



**Education and ICT (E-Learning) Doctoral Programme**  
**Open University of Catalonia**

**Dropout, persistence, and retention**  
**in online higher education:**  
**The case of the Open University of Catalonia**

**Doctoral Thesis**  
presented as a  
**Compendium of Publications**

by  
**Marlon Xavier**

Thesis supervisor: Dr. Julio Meneses

Barcelona, 2022

*For*  
Edgar Xavier

## ABSTRACT

High dropout rates in online higher education (OHE) have been a longstanding concern. The Open University of Catalonia (UOC), as a fully online open university, is a representative case of these concerns. However, the literature stresses that the reasons behind student dropout in OHE are complex, multidimensional, and not well understood. Moreover, there is a dearth of knowledge about how students experience these reasons, particularly in their first year of studies, when most dropout occurs; and how time poverty, one of the most common reasons for dropout, affects them. Addressing these gaps, this dissertation explores dropout - and related phenomena: persistence, stopout, and retention - and its risk factors and dynamics by analyzing the lived experiences of students and faculty in the UOC context, focusing on its undergraduate programs. The dissertation is presented as a compendium of six publications. Each contribution has its own aims and foci, related to the main themes of this thesis: (a) a scoping review of the literature, mapping the field of OHE dropout research and analyzing its research gaps; (b) a preliminary review on the dropout factors connected to time, advancing theoretical approaches; (c) and (d) two qualitative studies, the first with persistent students and the other with students who dropped out or stopped out, focusing on their time-challenges during their first year and their reasons for withdrawing; (e) a qualitative study with professors who are learning designers, focusing on their experiences connected to student dropout reasons and flexibility in OHE; (f) a qualitative study with persistent students addressing their profiles and their perception of useful or risky flexible measures, and presenting an institutional intervention implemented at UOC to foster persistence in the first year.

Integrating such contributions, a qualitative, exploratory-descriptive research design took the UOC as a single case study with multiple embedded cases. Participants in the empirical studies included students and professors in fully online undergraduate programs. In-depth open-ended interviews were employed and analyzed via qualitative content analysis. Lastly, a comparative, integrated discussion of all the results from subcases was performed.

Findings confirm the significance of the first-year experience for withdrawal and persistence – particularly the transition period and the first semester. Transition appears as a multifaceted *adaptation process* that, in addition to motivation, self-regulation, and other connected variables, chiefly requires *time* from students. Indeed, time-related factors were overwhelmingly perceived as the most important persistence barriers and reasons for withdrawal: time poverty and time-related conflicts, which were connected to students' life circumstances and the struggle to balance study with work and family commitments. Non-traditional students who withdrew were the most affected by time challenges, but these were perceived as key persistence barriers even by young, traditional students. Several other student factors were linked to these main barriers: poor time management, particularly in the form of academic procrastination; low academic preparedness and lack of online academic experience; and unrealistic expectations around studyload, time/effort, and level of self-regulation, self-efficacy, and motivation demanded by OHE studies. Many secondary factors appeared connected to withdrawal, such as demotivation and dissatisfaction, course difficulty and workload, and bad enrollment choices. Persisters experienced similar time challenges, but

presented distinct characteristics and dynamics in comparison with students who withdrew. Although most had good time management, a few were procrastinators and even needed to study under pressure; unrealistic expectations and misconceptions were less prevalent among them. Persisters also reported high levels of self-regulation and self-efficacy, resilience and commitment, intrinsic motivation, and satisfaction. Lastly, the pros and cons of OHE flexibility were discussed in their relations with dropout and persistence from the viewpoints of both students and professors, which generated various possible intervention measures.

Several theoretical and practical implications derived from the integrated findings are discussed, including a number of recommendations for practice and student-based interventions grounded on key tenets: to focus on the student experience; on induction and first year; and on temporal challenges. Finally, the dissertation concludes with a discussion of its limitations and an exploration of several avenues for future research.

**Keywords:** dropout, stopout, persistence, retention, open university, open learning, online higher education, first year, student experience.

## RESUMEN

Las altas tasas de abandono en la educación superior en línea (ESL) han sido una preocupación de larga data. La Universitat Oberta de Catalunya (UOC), como universidad abierta totalmente en línea, es un caso representativo de estas inquietudes. Sin embargo, la literatura destaca que las razones detrás de la deserción de los estudiantes en ESL son complejas, multidimensionales y poco comprendidas. Además, hay escasez de conocimiento sobre las experiencias de los estudiantes respecto a estas razones, particularmente en su primer año de estudios, cuando ocurre la mayor deserción; y sobre cómo les afecta la falta de tiempo, una de las razones más comunes del abandono estudiantil. Abordando estas brechas, esta tesis explora el abandono - y fenómenos relacionados: persistencia y retención - y sus factores de riesgo y dinámicas mediante el análisis de las experiencias vividas por estudiantes y profesores en el contexto de la UOC, centrándose en sus programas de grado. La tesis se presenta como un compendio de seis publicaciones. Cada contribución tiene sus propios objetivos y enfoques, relacionados con los temas principales de esta tesis: (a) una revisión de la literatura, mapeando el campo de la investigación sobre el abandono estudiantil en ESL y analizando sus lagunas de investigación; (b) una revisión preliminar sobre los factores de abandono relacionados con el tiempo, avanzando en los enfoques teóricos; (c) y (d) dos estudios cualitativos, el primero con estudiantes persistentes y el otro con estudiantes que desertaron o se desvincularon temporalmente, enfocándose en sus desafíos de tiempo durante su primer año y sus razones para no continuar los estudios; (e) un estudio cualitativo con profesores (diseñadores de aprendizaje), centrándose en sus experiencias conectadas con las razones de deserción estudiantil y la flexibilidad en ESL; (f) un estudio cualitativo con estudiantes persistentes que aborda sus perfiles y su percepción de medidas flexibles útiles o riesgosas, presentando una intervención implementada en la UOC para fomentar la persistencia en el primer año.



Integrando las contribuciones, un diseño de investigación cualitativo y exploratorio-descriptivo tomó la UOC como un estudio de caso único con múltiples subcasos contenidos. Los participantes en los estudios empíricos incluyeron estudiantes y profesores en programas de grado totalmente en línea. Se emplearon entrevistas abiertas en profundidad, analizadas a través del análisis de contenido cualitativo. Por último, se realizó una discusión comparativa e integrada de todos los hallazgos de los subcasos.

Los hallazgos confirman la importancia de la experiencia del primer año para el abandono y la persistencia, particularmente el período de transición y el primer semestre. La transición aparece como un proceso de adaptación multifacético que, además de motivación, autorregulación y otras variables relacionadas, requiere principalmente *tiempo* por parte de los estudiantes. De hecho, los factores relacionados con el tiempo se percibieron abrumadoramente como las más importantes barreras de persistencia y razones para el abandono: la escasez de tiempo y los conflictos relacionados con el tiempo, que estaban conectados con las circunstancias de vida de los estudiantes y con la lucha por equilibrar el estudio con los compromisos laborales y familiares. Los estudiantes no tradicionales que desertaron fueron los más afectados por los desafíos de tiempo, pero estos fueron percibidos como barreras clave de persistencia incluso por estudiantes jóvenes tradicionales. Varios otros factores estudiantiles estaban vinculados a estas barreras principales: mala gestión del tiempo, particularmente en forma de procrastinación académica; baja preparación académica y falta de experiencia académica en línea; y expectativas poco realistas sobre la carga de estudio, el tiempo/esfuerzo y el nivel de autorregulación, autoeficacia y motivación exigidos por la ESL. Muchos factores secundarios aparecieron relacionados con el abandono, como desmotivación y insatisfacción, dificultad del curso y su carga de trabajo, y las malas elecciones en la matrícula. Los estudiantes persistentes experimentaron desafíos de tiempo similares, pero presentaron características y dinámicas distintas en comparación con los estudiantes que abandonaron. Aunque la mayoría tenía una buena gestión del tiempo, algunos eran procrastinadores e incluso necesitaban estudiar bajo presión; expectativas poco realistas y preconcepciones erróneas eran menos frecuentes entre ellos. Los persistentes también informaron altos niveles de autorregulación y autoeficacia, resiliencia y compromiso, motivación intrínseca y satisfacción. Por último, se discutieron los pros y los contras de la flexibilidad de la ESL en sus relaciones con la deserción y la persistencia desde la perspectiva de estudiantes y profesores, lo que generó varias posibles medidas de intervención.

Se discuten varias implicaciones teóricas y prácticas derivadas de los hallazgos integrados, incluyendo una serie de recomendaciones para la práctica y para intervenciones basadas en los estudiantes, asentadas en principios clave: centrarse en la experiencia del estudiante; en el acompañamiento pre-matricula y durante el primer año; y en los desafíos temporales de los estudiantes. Finalmente, la tesis concluye con una discusión de sus limitaciones y una exploración de varias vías para futuras investigaciones.

**Palabras clave:** abandono universitario, deserción temporal, persistencia, retención, universidad abierta, aprendizaje abierta, educación superior en línea, primer año, experiencia del estudiantado

# INDEX

<b>ABSTRACT</b> .....	<b>3</b>
<b>RESUMEN</b> .....	<b>4</b>
<b>CHAPTER 1</b> .....	<b>11</b>
<b>GENERAL INTRODUCTION</b> .....	<b>11</b>
1.1. INTRODUCTION .....	11
1.2. THEORETICAL BACKGROUND .....	12
1.2.1. <i>Dropout Definitions</i> .....	12
1.2.2. <i>The Problem of Dropout in Higher Education</i> .....	13
1.2.3. <i>Dropout in Online Higher Education</i> .....	14
1.2.4. <i>Dropout Factors or Motivations</i> .....	15
1.2.5. <i>Dropout Models</i> .....	16
1.2.6. <i>Specific Foci of Inquiry</i> .....	17
1.3. CONTEXT OF RESEARCH .....	24
1.4. RESEARCH PROBLEM.....	26
1.5. RESEARCH QUESTIONS AND OBJECTIVES.....	26
1.6. PRESENTATION OF PUBLICATIONS AND ORGANIZATION OF THE CHAPTERS.....	27
1.7. REFERENCES .....	31
<b>CHAPTER 2</b> .....	<b>47</b>
<b>METHOD, COHERENCE, AND RELEVANCE OF CONTRIBUTIONS</b> .....	<b>47</b>
2.1. INTRODUCTION .....	47
2.2. METHOD .....	48
2.2.1. <i>Research Design</i> .....	48
2.2.2. <i>Sampling Strategy</i> .....	49
2.2.3. <i>Participants</i> .....	49
2.2.4. <i>Instruments and Data Collection</i> .....	49
2.2.5. <i>Data Analysis</i> .....	51
2.2.6. <i>Ethical Considerations</i> .....	52
2.3. COHERENCE AND RELEVANCE OF CONTRIBUTIONS.....	52
2.3.1. <i>Contribution 1</i> .....	52
2.3.2. <i>Contribution 2</i> .....	53
2.3.3. <i>Contribution 3</i> .....	53
2.3.4. <i>Contribution 4</i> .....	53
2.3.5. <i>Contribution 5</i> .....	54
2.3.6. <i>Contribution 6</i> .....	54
2.3.7. <i>Supplementary Contribution</i> .....	55
2.4. REFERENCES .....	55
<b>CHAPTER 3</b> .....	<b>57</b>
<b>DROPOUT IN ONLINE HIGHER EDUCATION: A SCOPING REVIEW OF THE LITERATURE</b> .....	<b>57</b>
ABSTRACT.....	57
1.1. BACKGROUND: CONCEPTUALIZING DROPOUT RESEARCH IN ONLINE HIGHER EDUCATION .....	57
1.1.1. <i>Definition</i> .....	57
1.1.2. <i>Prevalence and Importance of Dropout</i> .....	58

1.1.3. Dropout Risk Factors .....	58
1.1.4. Dropout Models for Distance Education .....	58
1.1.5. Previous Reviews of Dropout in Online Education .....	59
1.1.6. A Scoping Review of Dropout in Online Higher Education.....	60
1.2. METHOD .....	60
1.2.1. Identifying the Research Questions .....	60
1.2.2. Identifying Relevant Studies .....	61
1.2.3. Study Selection .....	62
1.2.4. Charting the Data .....	62
1.2.5. Summarizing and Reporting Findings.....	63
1.3. RESULTS .....	63
1.3.1. Study Characteristics .....	63
1.3.2. Domains and Themes .....	66
1.3.3. Definitions and Concepts.....	69
1.3.4. Dropout Models.....	73
1.3.5. Dropout Factors.....	74
1.3.6. Main Findings.....	77
1.4. DISCUSSION .....	81
1.4.1. General Overview of Characteristics .....	81
1.4.2. A Complex Phenomenon without a Clear Definition .....	82
1.4.3. Multiple and Interchangeable Domains and Themes.....	83
1.4.4. Numerous Causal Factors and Lack of Unified Theories and Models.....	83
1.4.5. Findings: Five Years of Progress, and Now What? .....	84
1.4.6. Limitations.....	85
1.5. CONCLUSION .....	85
1.6. REFERENCES .....	85
<b>CHAPTER 4 .....</b>	<b>102</b>
<b>THE TIME FACTOR IN STUDIES ON DROPOUT IN ONLINE HIGHER EDUCATION: INITIAL REVIEW OF THE LITERATURE AND FUTURE APPROACHES .....</b>	<b>102</b>
SUMMARY .....	102
4.1. DROPOUT IN ONLINE HIGHER EDUCATION AND THE TIME FACTOR.....	102
4.2. THE TIME FACTOR: INITIAL REVIEW AND IMPLICATIONS FOR OHE.....	103
4.3. THEORETICAL APPROACHES .....	104
4.3.1. Time management approach .....	104
4.3.2. Work-study-home conflict/balance approach.....	105
4.3. FUTURE DIRECTIONS: POSSIBLE INTERVENTIONS AND RESULTS .....	105
4.4. REFERENCES .....	106
<b>CHAPTER 5 .....</b>	<b>109</b>
<b>PERSISTENCE AND TIME CHALLENGES IN AN OPEN ONLINE UNIVERSITY: A CASE STUDY OF THE EXPERIENCES OF FIRST-YEAR LEARNERS .....</b>	<b>109</b>
ABSTRACT.....	109
5.1. INTRODUCTION .....	109
5.2. LITERATURE REVIEW.....	110
5.3. METHODS.....	112
5.3.1. Context of research .....	112
5.3.2. Design and participants.....	112
5.3.3. Data collection .....	113
5.3.4. Data analysis.....	113
5.4. RESULTS .....	114

5.4.1. Participants' information .....	114
5.4.2. Reasons for choosing OHE.....	114
5.4.3. Transition and first year experience .....	114
5.4.4. Time challenges and experiences .....	116
5.4.5. Related factors .....	118
5.5. DISCUSSION .....	119
5.6. CONCLUSION .....	123
5.7. REFERENCES .....	124
<b>CHAPTER 6 .....</b>	<b>127</b>
<b>DROPOUT, STOPOUT, AND TIME CHALLENGES IN OPEN ONLINE HIGHER EDUCATION: A QUALITATIVE STUDY OF THE FIRST-YEAR STUDENT EXPERIENCE .....</b>	<b>127</b>
ABSTRACT.....	127
6.1. INTRODUCTION .....	127
6.1.1. Background: The problems of dropout and stopout.....	127
6.1.2. Justifications.....	129
6.1.3. Research aim .....	130
6.2. METHODS.....	130
6.2.1. Setting .....	130
6.2.2. Design and participants.....	130
6.2.3. Data collection .....	<b>Error! Bookmark not defined.</b>
6.2.4. Data analysis.....	<b>Error! Bookmark not defined.</b>
6.2.5. Limitations.....	131
6.3. RESULTS .....	132
6.3.1. The first-semester experience .....	132
6.3.2. Time-related challenges and experiences .....	134
6.3.3. Main dropout and stopout motives.....	135
6.3.4. Main reasons for returning .....	136
6.4. DISCUSSION .....	136
6.5. CONCLUSIONS .....	140
6.6. APPENDIX A .....	141
6.6.1. Guidance questions for the interview (translated from the original language).....	141
6.7. REFERENCES .....	141
<b>CHAPTER 7 .....</b>	<b>144</b>
<b>THE TENSIONS BETWEEN STUDENT DROPOUT AND FLEXIBILITY IN LEARNING DESIGN: THE VOICES OF PROFESSORS IN OPEN ONLINE HIGHER EDUCATION.....</b>	<b>144</b>
ABSTRACT.....	144
7.1. INTRODUCTION .....	144
7.2. CONTEXT OF RESEARCH .....	146
7.3. METHOD .....	147
7.3.1. Design and Participants.....	147
7.3.2. Data Collection .....	148
7.3.3. Data Analysis.....	148
7.4. RESULTS .....	148
7.4.1. Perception of Dropout Factors .....	149
7.4.2. Learning Design and Dropout.....	150
7.4.3. Flexible Measures in Learning Design: Risks and Opportunities.....	151
7.4.4. Revisiting the Problem with First-Year Students .....	153
7.5. CONCLUSION .....	154
7.6. REFERENCES .....	156

<b>CHAPTER 8 .....</b>	<b>160</b>
<b>FOSTERING RETENTION IN ONLINE HIGHER EDUCATION: STUDENTS' PERCEPTIONS OF AN INTERVENTION ADDRESSING THEIR FIRST-YEAR EXPERIENCE .....</b>	<b>160</b>
ABSTRACT.....	160
8.1. INTRODUCTION .....	160
8.1.1. <i>Dropout and Retention in Online Higher Education</i> .....	160
8.1.2. <i>Context of Intervention and Research</i> .....	161
8.1.3. <i>The ESPRIA Intervention</i> .....	162
8.2. METHOD .....	163
8.3. PRELIMINARY RESULTS .....	163
8.4. CONCLUSIONS .....	165
8.5. REFERENCES .....	166
<b>CHAPTER 9 .....</b>	<b>168</b>
<b>INTEGRATED DISCUSSION OF RESEARCH FINDINGS AND CONCLUSION .....</b>	<b>168</b>
9.1. RESULTS .....	168
9.1.1. <i>Contribution 3</i> .....	168
9.1.2. <i>Contribution 4</i> .....	170
9.1.3. <i>Contribution 5</i> .....	171
9.1.4. <i>Contribution 6</i> .....	172
9.2. INTEGRATED FINDINGS AND DISCUSSION .....	173
9.2.1. <i>Research Questions 1 and 2: Perception of Key Dropout and Persistence Factors and the Impact of the Time Factor</i> .....	173
9.2.2. <i>Research Question 3: Perception of the Roles of Flexibility for Dropout/Persistence</i> .....	185
9.2.3. <i>Research Question 4: Recommendations for Practice</i> .....	187
9.3. CONCLUSIONS .....	190
9.3.1. <i>Key Findings and Theoretical Contributions</i> .....	190
9.3.2. <i>Key Findings and Practical Implications</i> .....	192
9.3.3. <i>Limitations</i> .....	192
9.3.4. <i>Further Research</i> .....	195
9.4. REFERENCES .....	196
<b>APPENDIX 1 .....</b>	<b>210</b>
<b>A LITERATURE REVIEW ON THE DEFINITIONS OF DROPOUT IN ONLINE HIGHER EDUCATION .....</b>	<b>210</b>
ABSTRACT.....	210
A1.1. BACKGROUND: CONCEPTUALIZING DROPOUT RESEARCH IN ONLINE HIGHER EDUCATION .....	210
A1.1.1. <i>The Issue with Definitions</i> .....	210
A1.1.2. <i>Prevalence and Importance of Dropout</i> .....	211
A1.1.3. <i>A Scoping Review of Dropout in Online Higher Education</i> .....	211
A1.2. METHOD .....	211
A1.3. RESULTS .....	212
A1.3.1. <i>Definitions and concepts</i> .....	212
A1.4. CONCLUSION: A COMPLEX PHENOMENON WITHOUT A CLEAR DEFINITION.....	215
A1.5. REFERENCES.....	216
<b>APPENDIX 2 .....</b>	<b>192</b>
<b>POSTER: THE TIME FACTOR IN STUDIES ON DROPOUT IN ONLINE HIGHER EDUCATION .....</b>	<b>210</b>
<b>APPENDIX 3 .....</b>	<b>210</b>
<b>SCOPING REVIEW: COMPLETE SPREADSHEET WITH CODED PAPERS .....</b>	<b>210</b>

<b>APPENDIX 4 .....</b>	<b>210</b>
<b>INTERVIEW PROTOCOLS.....</b>	<b>210</b>
A4.1. INTERVIEW PROTOCOL – PERSISTERS (STUDENTS).....	211
A4.2. INTERVIEW PROTOCOL – DROPOUTS (STUDENTS).....	211
A4.3. INTERVIEW PROTOCOL – STOPOUTS (STUDENTS).....	211
A4.4. INTERVIEW PROTOCOL – COORDINATING PROFESSORS.....	211
<b>BIBLIOGRAPHY.....</b>	<b>285</b>

# CHAPTER 1

## GENERAL INTRODUCTION

### 1.1. Introduction

Student dropout in the field of higher education (HE) has been a matter of concern for a long time, particularly in Spain (Fernández-Melliz, 2022). In online higher education (OHE), such problem has even more significance, as online learning has consistently shown significantly higher student dropout rates than on-campus conventional courses (Kember et al., 2022).

Given its context, the Universitat Oberta de Catalunya (UOC) faces the same challenge. Like other online open universities, it suffers from very high student attrition rates, a fortiori of new-entry students during or after finalizing their first semester (Sánchez-Gelabert, 2021).

To address this problem, this qualitative dissertation explores dropout - and related phenomena: persistence, stopout, and retention - and its risk factors and dynamics by analyzing the lived experiences of students and faculty in the context of a fully online open university (UOC), focusing on its undergraduate students and programs. Tackling the dropout problem in this way acknowledges the need to employ a multidimensional approach that takes into full account the experiences of the main actors involved (students, professors, instructors, and academic advisors), the relationships between them and with the institution, and the multiplicity of factors and frameworks presented in the literature (Choi & Park, 2018). It gives special importance to *time*-related factors such as time poverty, time management, time-related challenges, and procrastination; to *flexibility* - as the main attraction and a crucial challenge for OHE learners; and to *learning design*, particularly continuous assessment, as key dropout and persistence factors.

The current dissertation thus intends to offer several practical results. Theoretically, it will contribute to online retention studies by mapping, categorizing, and discussing extensively the extant dropout literature and its gaps; and by giving voice to and analyzing the students' (and professors') experiences and viewpoints regarding persistence and attrition, especially by exploring factors that are indeed important yet seldom studied (time, flexibility, assessment), thereby providing answers to literature gaps. In practical terms, such analyses shall contribute practical recommendations to foster persistence, thus aiding OHE institutions, particularly the UOC, to address dropout and retention issues, via designing, providing, and evaluating the support and interventions needed. Its overarching aim is a betterment of the student experience, thus improving persistence, continuance, and retention.

This dissertation is structured in three parts. Part I begins with the current chapter, presenting a general introduction to the main themes, their relevance, the context of research, and knowledge and literature gaps that originated and justified our research aims and contributions, followed by a chapter discussing the methodology chosen and the coherence between the

contributions published and our research problem and aims. Part II is composed of our published contributions. Part III offers a general overview of the results found and their discussion, including possible limitations of this work and recommendations for future research and institutional interventions, and ends with an overall conclusion.

## **1.2. Theoretical Background**

### **1.2.1. Dropout Definitions**

Dropout can be broadly defined as a student's failure to enroll for a definite number of successive semesters<sup>1</sup>. In this thesis, dropout was operationalized as non-enrollment in the same university for two consecutive semesters. However, there are many different definitions of dropout in the literature, none of which being accepted as standard, and the issue is controversial (Behr et al., 2020; Grau-Valldosera & Minguillón, 2014; Larsen et al., 2013; Tinto, 1982; Tresman, 2002; Xavier & Meneses, 2020a, 2020b). Several related concepts are often employed, some as synonymous – attrition, withdrawal, non-completion – and others as antonymous - retention, persistence, continuance, completion, and success. Inconsistent terminology is important because how dropout is defined determines how it is measured, tackled, and researched (Ashby, 2004). The main issue regards who to count as having dropped out (Nichols, 2010). Defining dropout as withdrawal from a single course is prevalent, yet other authors have proposed a long-term definition and a program perspective (Grau-Valldosera et al., 2018) as more adequate to OHE. Moreover, dropout is usually about students who do not complete a course or program of study, but it can also mean several other things, such as moving on to another course or institution (transfer out, or institutional departure, in the expression coined by Tinto, 1993), or even leaving higher education altogether (Tresman, 2002), i.e., system departure (Tinto, 1993).

Other related concepts suffer from the same imprecision; for the purposes of this thesis, they can be defined as follows. Persistence can refer both to course and degree program: “remaining, and engaged, in the course of study to completion of the enrollment period” (McClelland, 2014, p. 14); “continued pursuit of a student in a degree program leading toward completion of the program” (Lehan et al., 2018, p. 9) – despite obstacles, difficulties, and failures (Wang et al., 2021). A more student-focused definition can be found in Tinto (1993): continuous or intermittent program attendance until students reach their educational goals (usually completion of course or program). Retention means “continued enrollment in an online program from admission through program completion” (Knestrick et al., 2016, p. 636). Stop-out refers to students who have not maintained continuous enrollment in college (Shachar & Neumann, 2010) for a certain period (e.g., one or two semesters) that, however, does not allow one to classify them as dropouts (either because they eventually re-enroll or because the period they remain non-enrolled does not meet the criteria for dropout). Withdrawal can thus be temporary (stop-out) or more or less definitive (dropout).

---

<sup>1</sup> In Spain, dropout is officially defined as not enrolling for two consecutive years (i.e., four semesters) (Ministerio de Universidades, 2021).



### **1.2.2. The Problem of Dropout in Higher Education**

Dropout rates in higher education (HE) have become a matter of utmost concern, as education authorities utilize them as a key parameter for evaluating higher education quality and allocating government resources (Netanda et al., 2019; Thomas, 2011), and their costs – for institutions, students, and society – are considerable. For universities, attrition often leads to revenue loss; non-completion is seen as wasted time and money – often public funding - invested on the students' formation that do not increase human and social capital, and may possibly result in reputational damage, as dropout is seen as indicating poor or substandard performance (Tresman, 2002). For the students, dropping out may represent loss of invested time and resources and a source of frustration and demotivation to continue their education in the future (Delnoij et al., 2021; Larsen et al., 2013; Y. Lee et al., 2013).

#### ***1.2.2.1. Dropout in Spain***

Such concern with high dropout rates in higher education has also been present in Spain (Arce et al., 2015). Overall, the situation in Spain is similar to the picture found in other so-called developed countries as regards student dropout, achievement, and graduation rates in on-campus undergraduate programs. A recent study (Fernández-Mellizo, 2022) provides the most up-to-date data for Spain. Dropout averages 13.5% in Spanish brick-and-mortar college education. Males, students from lower socioeconomic strata, and students of Arts and Humanities majors are more likely to withdraw from college. Dropout usually happens at the beginning of the academic trajectory: more than half of the students who drop out do so in the first year of studies. Student academic performance - the percentage of credits earned in relation to credits enrolled – during the first academic year is the most important predictor for dropout.

However, there is a huge difference in dropout rates in distance universities compared to their on-campus counterparts in Spain. At Universidad Nacional de Educación a Distancia (UNED), a public distance (not online) university, six out of ten students withdraw from college before graduating. At the Universitat Oberta de Catalunya (UOC), a private, fully online university that provides a public service, almost 50% of new-entry students drop out, according to the measures found by Fernández-Mellizo (2022). Nonetheless, in other online universities, dropout rates are lower and range from 17.7% (Universidad Internacional Isabel I de Castilla - UII) to 36.6% (Universidad Internacional de Valencia - VIU).

This probably reflects a clear difference in the typical student populations at distance versus on-campus universities. Distance learners are usually *non-traditional students*: they are much more likely to be older, with full work and/or familial commitments, and their academic objectives may be different (studying to further their careers or for pleasure or hobby), which makes their trajectories quite diverse (Sánchez-Gelabert, 2021, 2022; Sánchez-Gelabert & Elías, 2017).

It must be noted that, in the study by Fernández-Mellizo (2022), the definition and measurement of dropout are tailored for on-campus universities: definitive dropout is defined as a student enrolling in the first year or semester of studies and not enrolling again for two consecutive years nor graduating within four years of the first enrollment. This definition

excludes transfers (from programs within the same university) and transfer out (leaving one university to enroll in a different one). However, online and distance students typically take much longer to graduate and are more likely to take enrollment breaks, which likely augments the dropout rate when measured this way.

### 1.2.3. Dropout in Online Higher Education

Although few studies have found that online learning may increase the likelihood of degree completion (Creelman & Reneland-Forsman, 2013; Shea & Bidjerano, 2014; Wavle & Ozogul, 2019), most of the literature points out that OHE presents persistent higher dropout rates than on-campus, traditional higher education, which has been a longstanding concern for online educators and stakeholders globally (Bawa, 2016; Delnoij et al., 2020; Grau-Valldosera et al., 2018; Y. Lee & Choi, 2011; Muljana & Luo, 2019; Murphy & Stewart, 2017; Nistor & Neubauer, 2010; Orellana et al., 2020; Simpson, 2003, 2013; Stone & O’Shea, 2019a; Woodley & Simpson, 2014; Xu & Jaggars, 2013). Early dropout in the first year of studies is typical of OHE programs (Grau-Valldosera et al., 2018; Willging & Johnson, 2009), sometimes reaching 50% of freshmen (Simpson, 2010). A fortiori in open online universities, “Dropping out is the norm and the graduate is the ‘deviant’” (Woodley & Simpson, 2014, p. 465). This scenario led Simpson (2013), one important pioneer in online dropout research, to affirm that “the biggest problem in distance education is student dropout” (p. 117) – its elephant in the room (Woodley & Simpson, 2014).

Such problem must be seen in its present context, which has changed considerably in the last decades. First, online education in its various modes has experienced a booming in overall enrollments (Hachey et al., 2018) and has been growing steadily worldwide (Palvia et al., 2018; Veletsianos, 2020). Kember et al. (2021) pointed to a dramatic shift in higher education over the last twenty years: the popularization of open online education has led to a diversification of the student body, with much more non-traditional students engaging with post-secondary studies – which arguably impacts attrition rates. Second, the recent global pandemic seems to have increased first-year dropout in HE: “This problem has been exacerbated in the context of the deregulation of teaching and learning conditions in physical distance due to the COVID-19 pandemic” (Bernardo et al., 2022). To describe the convergence of such phenomena in the present context, I have coined the expression *online turn*<sup>2</sup> (Xavier & Meneses, 2021; see Chapters 5 and 7): the growing trend in higher education towards transitioning to online teaching (Naylor & Nyanjom, 2021), and its exacerbation by the impact of COVID-19, which forced higher education institutions to adopt online delivery overnight<sup>3</sup>. It is probable indeed that the viral epidemic has accelerated the irreversible emergence of an “online global era” in higher education (Guo et al., 2020), which, while engaging an enormously larger number and range of people in online learning, will also present numerous challenges (Adedoyin & Soykan,

---

<sup>2</sup> This expression was inspired by the *linguistic turn* in philosophy and psychology in the last century. Later on, I learned that the term “digital turn” was already in use (see, e.g., Kergel et al., 2018).

<sup>3</sup> Indeed, the impact of the pandemic on universities has been described as “the future arrived ahead of schedule, abruptly and without invitation” (KPMG, 2020). For in-depth analyses of the profound and forced changes brought by the pandemic upon universities, faculty, and the student experience, see Bozkurt et al. (2022) and Shah et al. (2021).

2020; Veletsianos & Houlden, 2020). Thus, with online learning and its higher attrition rates becoming the new normal, the problem of dropout will likely become even more pressing for both OHE and HE stakeholders (J. Brown et al., 2022; Kember et al., 2021).

#### **1.2.4. Dropout Factors or Motivations**

There is strong evidence that online student dropout is caused by an interrelated, complex set of factors and must be seen as multidimensional and context-specific (Beer & Lawson, 2017; Kember, 1989; Y. Lee & Choi, 2011; K. Li & Wong, 2019; Ortiz-Lozano et al., 2018; Tresman, 2002; Woodley et al., 2001). As a result, the literature has inquired into a staggering multiplicity of possible reasons or motivations for dropout (Woodley, 2004); there is a lack of consensus regarding the number of, and what should be considered as, valuable predictor factors (Storrings, 2005). Moreover, it has been claimed that dropout reasons are not fully understood (Greenland & Moore, 2022).

One major reason for that is that OHE presents very different contexts, dropout rates, and stakeholders as compared to traditional face-to-face, on-campus HE – so it likely has different dropout-influencing drivers. As mentioned above, its student body is quite different and usually presents typical specificities. The vast majority of students in open OHE is composed of *non-traditional learners*: older, mature students (over 25 years old) who are more likely to be fully employed and/or have familial responsibilities and other life commitments (Kara et al., 2019; Sánchez-Gelabert, 2021). Having more complex life circumstances and multiple commitments, open online learners are more prone to be time-poor and face a wider array of study challenges that influence attrition (Greenland & Moore, 2014, 2022; Hachey et al., 2018; Stone & O'Shea, 2019a). Moreover, these students usually enroll in one to three courses per semester, i.e., are part-timers; and many non-traditional students do not plan to graduate or even complete their courses (Woodley & Simpson, 2014), i.e., they often have different study motivations, aspirations, and objectives in comparison to traditional on-campus students, whose main priority is usually studying and graduating (Delnoij et al., 2020).

Given the importance of the subject, many studies have investigated the *factors* that influence student dropout – or related concepts: retention, persistence, success, and non-completion - and attempted to derive profiles of students most likely to dropout or persist in OHE. Reviewing the literature, Y. Lee and Choi (2011) identified 44 unique dropout factors, which they categorized as student factors, course and program factors, and environmental factors. Among the most cited factors were student entry characteristics (e.g., time management and technological skills and previous academic experience) and psychological attributes (e.g., student satisfaction and motivation), course characteristics (e.g., course design and institutional support), and situational variables (e.g., work and family responsibilities and health). Analogously, reviews (Hart, 2012; Holder, 2007) on persistence facilitators indicated that persisters were academically prepared and possessed good time management skills, intrinsic motivation, internal locus of control, and high levels of engagement, resilience, self-discipline, and commitment. It must be highlighted that what makes students persist (persistence drivers or facilitators) is not necessarily the converse of what leads them to drop out (persistence barriers). Noticeably, a recent review on persistence factors (K. Li & Wong, 2019), spanning

40 years of publications, found that environmental factors related to students' family and work have been decreasingly examined, which arguably results in a major literature gap.

In Chapter 3 below we review the recent literature regarding OHE dropout and persistence factors. However, some reviews on factors have been published since 2018, when sampling of papers for our literature review was concluded. Among them, Kara et al. (2019), reviewing the challenges faced by adult learners in OHE; K. Li and Wong (2019), analyzing empirical studies on persistence factors in open universities; Muljana and Luo (2019), who focused on retention factors (and strategies for improvement); Delnoij et al. (2020), presenting a review of reviews examining predictors of non-completion in OHE; Orellana et al. (2020), who reviewed the literature on dropout factors in OHE; Rotar (2020), a systematic review of attrition, retention and success factors for adult learners in OHE; and Shaikh and Asif (2022), reviewing and presenting a new taxonomy of persistence factors and barriers from the literature.

### **1.2.5. Dropout Models**

Likewise, several authors have tried to construct new conceptual models of attrition – either providing taxonomies encompassing factors found in the literature or building predictive, theoretical models focusing on certain factors that were hypothesized to hold more predictive value. Chapter 3 provides a short genealogical or historical presentation of the main attrition models, starting with the most influential one, the institutional departure model by Tinto (1975), and ending with the then-latest models for OHE dropout (e.g., Choi & Park, 2018).

However, in the contributions that follow we did not employ nor prioritized exclusively one model. Nevertheless, two models were more influential for our endeavors. First, the taxonomy created by Y. Lee and Choi (2011), slightly modified to categorize student factors, course, program, and institutional factors, and environmental or situational factors. Second, the most theoretically influential model was the model of dropout from distance education built by Kember (1989), followed by his model of student progress in open learning courses (Kember, 1995), for two main reasons: because of his focus on part-time adult students (the great majority in open OHE) and on the role of *time* (and student coping mechanisms and time management) in integrating life obligations with studies, which we reckon is the most important factor for dropout and persistence in OHE.

In Kember's (1989) model, dropout is seen as a longitudinal process whereby the student is continually deciding whether to persist or withdraw based on cost-benefit analysis (Woodley, 2004). Kember (1989) moved beyond the academic integration factor – i.e., student integration with course, institution, and peers - stressed by Tinto (1975) for attrition in traditional higher education, acknowledging that *social integration* - the extent to which students can integrate study with employment, family, and social and personal life – is often much more important for student continuance or withdrawal in open learning. In that sense, non-integration is viewed as the main driver for online attrition; its main causes are usually conflicting demands and time constraints, which Kember (1989) called *external attribution*. Indeed, Kember (1999) mentions that insufficient time for study because of occupational or other commitments always appears at the top of the list of reasons given for student-initiated withdrawal. However, success in

integration is largely dependent upon the student's capacity for employing accommodation mechanisms; thus, coping and integration mechanisms later became the focus of Kember's inquiries (Kember, 1999; Kember & Leung, 2004; Kember et al., 2005).

Kember (1989) thus inaugurated a tendency in dropout and retention models for online learners to de-emphasize social integration components of traditional models – which were deeply influenced by Tinto (1975) - and focus instead on factors external to the institution, i.e., student and environmental factors: self-regulation, academic preparedness, family and employment responsibilities, and life circumstances. However, this trend is fairly recent in the field, and there is still little research on retention or persistence that focuses on variables outside of the institution (Martin, 2017; Wavle, 2021).

Such tendency may reflect a focus change in retention studies, from the perspective of institutions to the perspective of the student, which has been defended by recent studies (Martin, 2017; Sorenson & Donovan, 2017; Tinto, 2017). This may represent a paradigm shift - from retention and dropout to persistence and success. According to Tinto (2017), the “prevailing view of student retention has been shaped by theories that view student retention through the lens of institutional action”; however, students “do not seek to be retained. They seek to persist” (p. 254).

Indeed, some new dropout and persistence models commonly emphasize the importance of student and environmental factors in open OHE, particularly for non-traditional students. For instance, the Persistence Model of Non-traditional online learners (Stephen et al., 2020) focuses on persistence in the first year of studies and concentrates on specific student factors: self-regulation, self-direction, and self-efficacy, which are connected to the motivation construct proposed by Tinto (2017) – comprising student self-efficacy, sense of belonging, and perceived value of the curriculum - as key to persistence. Hachey et al. (2018) proposed a theoretical model of online retention based on dropout motivations reported by students. Although course factors (e.g., quality of instruction/instructor, course workload/difficulty) were mentioned often, the most cited reasons were all related to student time poverty: lack of time, personal time commitments, paid work, and family commitments. Lastly, Greenland and Moore (2022) advanced a factor model for non-traditional student dropout in open OHE through the analysis of the reasons given by students for withdrawing. Noticeably, 90% of students who dropped out mentioned personal and learner context reasons. The frequency and importance of factors connected to time poverty - such as, inter alia, employment, being unable to balance work and study, overestimation of capacities and unrealistic enrollment, family commitments, study time management, and lack of time for studies - far exceeded other possible reasons.

### **1.2.6. Specific Foci of Inquiry**

In the contributions that compose this thesis, we have strived to conciliate two complementary viewpoints to grasp and try to understand our objects of inquiry. On the one hand, we have adopted a holistic, *generalist* approach – as mentioned, we did not employ one specific model or theory on dropout, trying instead to assume as broad a perspective as possible, informed by multiple authors and standpoints and taking into consideration every possible factor. This was

due to two main reasons: to seek to portray the multiplicity of experiences regarding dropout and persistence that the main actors or subjects voiced, including their perceived reasons and rationales; and to acknowledge the multicausality and complexity of dropout and persistence phenomena (K. Li & Wong, 2019; Yılmaz & Karataş, 2022). On the other hand, we have focused specifically upon some factors and contexts underlying these phenomena that were deemed more relevant for the open university setting and/or under-researched in online dropout studies. These specific foci of inquiry, embedded in a generalist theoretical approach, are: *time*, as a crucial factor for OHE dropout or persistence; *flexibility*, as a core characteristic of open OHE that may produce more attrition but also foster persistence; and the *first-year student experience*, a period when most dropout occurs and which is key to persistence.

In-depth contextualization in the literature and justification for the relevance of such foci and contexts are discussed within the published contributions. However, in what follows we attempt to provide an overview of the importance of such factors in the literature and the reasons why we chose to focus upon them, whilst adding new arguments and references that are not present in our contributions.

#### **1.2.6.1. The Time Factor**

Time-related issues or challenges often appear in online retention literature as critical dropout factors (Carnoy et al., 2012; Y. Lee & Choi, 2011; Myers et al., 2021; Park & Choi, 2009; Romero & Gentil, 2014; Thorpe, 2006). Indeed, as mentioned above, Kember (1999) and Simpson (2003) pointed that *lack of time* (or insufficient time) is usually the *most* important reason given for student attrition in OHE. For instance, in a 1998-2000 survey, UK Open University (UKOU) students perceived lack of time as the most significant factor influencing their decision to withdraw (Tresman, 2002). This was even more pronounced in online learners who worked full-time (McNeill, 2014). However, despite its crucial importance, there is still a conspicuous dearth of retention research focusing specifically on time challenges. Recently, some publications by a group of researchers (Conway et al., 2021; Wladis et al., 2018, 2020) adopted a focus of inquiry that is indeed very close to our approach: the importance of *time poverty*, and external stressors, for persistence and dropout. Wladis et al. (2018) defined academic time poverty in the context of higher education as students having insufficient time to devote to their studies; external stressors refer to student and environmental factors that impoverish the quantity and/or quality of time that learners have available for studies.

Time has a structural influence on dropout, persistence, and engagement (Kahu et al., 2014). Indeed, it may be considered a complex macro-factor (Grau-Valldosera, 2019; Grau-Valldosera & Minguillón, 2013), connected to a number of secondary dropout variables. Several reasons render time particularly crucial for student success or attrition in OHE. However, here we focus on reasons connected to the specificity of open OHE, chiefly in terms of its flexibility and demands; and to its typical student body's characteristics, needs, and skills.

First, as mentioned, the vast majority of learners in open OHE is composed of non-traditional students: older, employed, often with family and other life responsibilities (Sánchez-Gelabert, 2021, 2022). These characteristics have been connected to higher stress levels and higher rates

of time poverty (Hachey et al., 2018; Wladis et al., 2018, 2020). That means that most learners who enter open OHE are already time-poor (Romero & Barberà, 2011; Whitelock et al., 2015). In engaging with tertiary online education, they often struggle to carve out time and *balance multiple commitments* with their studies, which represents a key persistence challenge (M. Brown et al., 2015; Kember, 1999; Romero, 2011) and a source of considerable stress (M. Brown et al., 2015; Farrell & Brunton, 2020; Stone & O’Shea, 2019a). This has been known for a long time. For instance, reviewing the most common reasons for withdrawal, Ashby (2004) found that the most important ones were “the difficulties students have in juggling their studies with other aspects of their lives”, concluding that “[t]ime is clearly a major issue for O[pen] U[niversity] students” (p. 72). Tresman (2002) mentioned that domestic factors, such as balancing study, work, and family obligations, ranked second in the list of dropout reasons for students at UKOU, only below insufficient time. More recently, Kara et al. (2019) found that management challenges – the balance between education and work/family commitments – were by far the most important barriers for the persistence of adult online learners; and Farrell and Brunton (2020) found that the most challenging aspect of being an online student was studying while balancing work, family, and caring responsibilities. Adult female learners are often more affected by such challenges, as they are more likely to be primary caregivers; their complex family and domestic responsibilities, as well as their work if they are also employed, must often be accommodated with their studies whilst ensuring that study time does not impinge on family time (Carney-Crompton & Tan, 2002; Kahu et al., 2014; Kara et al., 2019; O’Shea, 2022; Selwyn, 2011; Stone & O’Shea, 2019b; Veletsianos et al., 2021). It is known that conflictive commitments influence negatively academic performance and persistence (Owen et al., 2017). Thus, to give an example, Müller (2008), in a research focusing on female online learners, found that having multiple responsibilities and the resultant time limitations were the most important barrier for their persistence.

The characteristic *flexibility* offered by open OHE – discussed in more detail below, as one of our specific foci of inquiry – may also represent a source of student time poverty and attrition, and this for several reasons. One of them is that non-traditional learners, precisely because they have many professional, family, and social time constraints, choose to enroll in open OHE because they value and need the temporal and spatial flexibility that it offers (Duncheon & Tierney, 2013; Kahu et al., 2014; Romero & Barberà, 2015; Samra et al., 2021). Sometimes their personal circumstances and limited time for learning even prevent any other mode of study (Butcher & Rose-Adams, 2015; Holder, 2007). However, as flexibility increases, so does the responsibility of students to self-regulate - to independently plan and self-manage time (Barberà & Reimann, 2014; Kocdar et al., 2018). In other words, open OHE offers flexible education but also *demands* much more of the students in terms of more self-motivation, self-regulation, discipline, and time regulation competencies (Naidu, 2014). Moreover, the spatial and temporal flexibility of online studies tends to blur the boundaries between study and home or work, often occasioning conflict among the three spheres. Thus, while “flexibility can be seen as a virtue, enabling multitasking and fluidity of roles, it can also be seen as a curse, impacting negatively on family life and creating new stress” (Kahu et al., 2014, p. 524).

In this sense, *student skills* may also influence considerably their time challenges. The main skills have been studied under the umbrella of self-regulated learning (SRL) strategies (Broadbent & Poon, 2015; Geduld, 2016; Kocdar et al., 2018), which are a key competence for higher academic achievement and university success (Theobald & Bellhäuser, 2022). A most important skill for open OHE is *academic time management*, which can be defined as the ability to plan study time and tasks (Broadbent & Poon, 2015). Time management skills correlate strongly with motivation, performance, and persistence (Bawa, 2016; Hart, 2012; Holder, 2007; Y. Lee & Choi, 2011; Y. Lee et al., 2013) and are essential to achieve good balance between different life commitments and studies (Buck, 2016; Romero & Gentil, 2014). Even students with a heavy workload can persist and succeed, provided they have good time management skills to deal effectively with competing demands and thus remain motivated (Bunn, 2004; Katiso, 2015). However, sometimes learners are or become so time-poor that it matters little how well-honed their time management skills are (Veletsianos et al., 2021).

Conversely, students with poor time regulation may present behavior that produces or increases their time challenges: *academic procrastination*, defined as “the voluntary delay of an intended course of *study-related* action despite expecting to be worse off for the delay” (Steel & Klingsieck, 2016, p. 37), which has been connected to poor performance or failure (Elvers et al., 2003) and higher dropout rates (Cerezo et al., 2017; Michinov et al., 2011). Coupled with lack of time, bad time management and procrastination have been found to be the primary reasons for students failing or dropping an online course (Doherty, 2006). Although the matter is controversial – i.e., active procrastinators may often achieve success and persist (Chun Chu & Choi, 2005; Klingsieck et al., 2012) -, overall academic procrastination has been shown to have negative consequences for academic performance and retention in OHE (Grau-Valldosera & Minguillón, 2013; Hasan et al., 2021; Kim & Seo, 2015; Svartdal et al., 2020), a fortiori during the coronavirus pandemic (Hong et al., 2021; Melgaard et al., 2022).

However, despite their importance, temporal factors have not been given much attention in distance education research (Barberà et al., 2012; Hülsmann et al., 2015; Møeglin & Vidal, 2015). Little is known about the impact of temporality upon success and completion (Veletsianos et al., 2021). Therefore, if *time* appears to be a crucial factor for attrition in online learning environments, it seems clear that understanding its impact and dynamics for students in open, fully OHE is essential. Such an understanding may inform the design of institutional interventions and induction programs to improve persistence, performance, success, and retention rates (Holcomb et al., 2018; Shah & Cheng, 2019).

#### **1.2.6.2. Flexibility**

This focus of inquiry is important for dropout and retention in OHE for several reasons. First, flexibility is *typical* of open OHE: it is regarded as the most crucial element of (part-time) distance learning (Butcher & Rose-Adams, 2015). “Open” and “flexible” higher education are seen as almost synonymous, as flexibility is perceived as intrinsic to a student-centered approach which would be more open, democratic, and empowering (Houlden & Veletsianos, 2019). Thus, flexibility has arguably become an ethos (Veletsianos et al., 2021), a value



principle (Naidu, 2017b), a structural element of open OHE, characterizing and profoundly influencing its philosophy, practices, and policies.

Indeed, the theme has been much discussed lately in both OHE and HE literature (K. Li & Wong, 2018). For instance, Naidu (2017a, 2017b), in editorials in *Distance Education*, affirms that openness and flexibility have become the norm in distance education, and analyzes possible opportunities and challenges of flexible practices and policies in HE. Sheail (2018) recognizes that flexibility in HE has become a field of inquiry on its own and defends radical flexibility in general as particularly important in our times of crisis. Thus, flexibility is almost taken for granted as a common condition of the contemporary educational landscape (Selwyn, 2011). Yet, institutional claims to flexibility have been harshly criticized and need to be seen critically in OHE (Houlden & Veletsianos, 2019, 2021; Selwyn, 2011; Veletsianos & Houlden, 2020; Veletsianos et al., 2021). Sheail (2018) summarizes one criticism that is indeed important for both online dropout studies and our contributions:

... while a discourse of flexibility promises opportunities for access to online education, it also has the potential to devalue it by paying too little attention to education's time-consuming practices, often perpetuating a notion of teaching and learning which is depicted as a-temporal and free from the constraints of time. (p. 462)

Thus, the promise that flexible open OHE touts is that it will enable students to study when, how, and what they want – the oft-repeated “anytime, anywhere” claim (Ilgaz & Gülbahar, 2015; Kahu et al., 2014; Veletsianos et al., 2021). However, the spatial and temporal flexibilities offered also impose higher demands on student self-motivation, self-discipline, self-regulation, and time availability (Buck, 2016; Kuo et al., 2014; Nikolova & Collis, 1998). In a certain sense, the more student-centered and flexible OHE gets, the more the student will bear the responsibility for their learning and success – the andragogical assumption that online learners are active, individualistic, and self-reliant becomes axiomatic (Houlden & Veletsianos, 2019; K. Lee et al., 2019; Nikolova & Collis, 1998), thus running the risk of individualizing failure (Hülsmann et al., 2015). “Flexibility ... may improve access to education, but rather than eliminating all barriers, it brings different sets of difficulties, typically stemming from the need to vie for time and space to study in an already full schedule” (Houlden & Veletsianos, 2019, p. 1010). As seen, OHE students are very likely to have multiple time-consuming demands – and they choose open OHE precisely because of that. However, many of them are not able to carve out the time and space necessary for studies amidst their complex lives and eventually withdraw (Kahu et al., 2014). In other words, the very reasons which cause learners to elect OHE – time paucity and the promise of temporal flexibility – may in turn cause them to drop out (Farrell & Brunton, 2020; Simpson, 2004). In this case, dropout stems from the collision between the flexibility promised by OHE and the students' *inflexibilities* – particularly their limited time availability due to other life responsibilities (Veletsianos et al., 2021).

Flexibility may also generate student misconceptions and unrealistic expectations regarding their studies, which are an important cause for dropout (Bawa, 2016; Henry, 2020; K. Lee et al., 2019). Many new-entry online learners believe that they will be able to study anywhere, anytime, and what they want, and that online learning is easier due to such flexibility

(Hyllegard et al., 2008; Veletsianos et al., 2021). However, they often underestimate the time, space, and workload required by OHE, or else overestimate flexibility itself and their own capacities and time availability (Korstange et al., 2020). Moreover, the promise of learning “anywhere, anytime” should be complemented by “for anyone”<sup>4</sup>: open entry often allows access of students with low academic preparedness and qualifications and without previous OHE experience, who are more prone to have difficulties and misconceptions in their first semester, thus becoming more likely to drop out early on (Hachey et al., 2012; Korstange et al., 2020; K. Li & Wong, 2019; Rivera-Vargas et al., 2021; Simpson, 2013; Tait, 2018).

However, flexibility in OHE can obviously present many advantages and benefits for student persistence (see a discussion of them in Houlden and Veletsianos, 2019), as flexible learning supports personalized learning (Soffer et al., 2019). Furthermore, adopting more flexible practices based on such benefits, particularly as regards learning design and the assessment process, may help and support students in their performance and persistence (Bergamin et al., 2012; Deschacht & Goeman, 2015; Moore & Greenland, 2017; Simpson, 2003; Soffer et al., 2019; Whitelock et al., 2015). Learning design can be defined as “the creative and deliberate act of devising new practices, plans and activities, resources and tools aimed at achieving particular educational aims in a given context” (Mor & Craft, 2012, p. 86). It strongly impacts several aspects of the students’ experience, particularly their engagement, performance, and satisfaction (N. Li et al., 2017; Nguyen et al., 2022; Rienties & Toetenel, 2016), as it encompasses course design and delivery, curriculum, program pathways, assessment, and feedback. Course design and learning environment are key factors for dropout and persistence (Korstange et al., 2020; Park & Choi, 2009; Snyder, 2014). As central elements of learning design, assessment and feedback play an enormous role in OHE, being key drivers for learning and success (Conole, 2012; Simpson, 2003, 2012; Tait, 2015).

Nevertheless, little is known about providing students with more flexibility as a strategy to prevent dropout in OHE, as the relationship between flexible learning and achievement is controversial (Soffer et al., 2019). The risks of flexibility - inducing (more) procrastination, lowering the standards of education - have seldom been researched (Simpson, 2003). Thus, the adequacy, feasibility, and efficacy of different flexible measures in continuous assessment and learning design need to be further investigated - from the perspective of students, but also considering the experiences of instructors and learning designers, for they are the institutional stakeholders who can influence student retention the most through the modification or alleviation of course and program dropout factors (Bawa, 2016). Moreover, such investigation should be carried out considering the critical debate discussed above – the pros and cons of flexibility for OHE dropout and persistence.

### ***1.2.6.3. Online first-year student experience***

These specific foci of inquiry are interrelated and constituted of a focus on the first year of studies in OHE, and a focus on the student experience - in that first year, before, and beyond.

---

<sup>4</sup> This expression – “anytime, anywhere, for anyone” – was coined by my advisor, Julio Meneses (personal communication).

The first year of studies, including the period of transition and induction, is important for two main reasons, which have been extensively researched under the label of *first-year experience* studies (Feldman, 2018; James et al., 2010; Kember et al., 2022; Korstange et al., 2020; Tinto, 2006). First, as discussed, dropout is much more common early in the degree, particularly in OHE, which is why the first-year experience has been deemed so relevant (Kember et al., 2021). Second, that attests to the criticality of transition and the first year for student persistence or withdrawal - particularly the first semester. New-entry students in OHE are more likely to present the pre-entry student factors discussed previously: time poverty and coping with job and family responsibilities, low academic and technological preparedness, poor self-regulation, lack of previous academic experience, misconceptions and unrealistic expectations, and so on. These student characteristics may compose a dramatic transition phase in the face of considerable flexibility and a new, unfamiliar mode of studies that promises accommodation and easiness but may in fact present numerous challenges and demand quite a lot from learners (Henry, 2018). Thus, while it is generally acknowledged that the first-year experience is particularly crucial for persistence and success (Henry, 2020; Tinto, 1993; Tinto & Pusser, 2006), first-year transition may be even more critical and difficult for OHE learners (Henry, 2018; Stone & O’Shea, 2019a).

To comprehend online dropout, persistence, and the first-year experience, recent research (Balloo, 2018; Myers et al., 2021; O’Shea et al., 2015) has called for researchers and institutions to understand better who their students are, their needs, motivations, expectations, and experiences – a student-centered perspective. Indeed, “surprisingly little is known about what actually happens to first year distance students once they have enrolled in tertiary institutions; what motivates them and how they actually experience the transition to formal study by distance” (M. Brown et al., 2015). This knowledge gap has recently originated a trend in online retention studies that we might call the Online Student Experience (OSE), focusing on the lived experiences of OHE learners, which remain somewhat elusive (Becker & Schad, 2022; Blackmon & Major, 2012; Manca et al., 2017; O’Shea et al., 2015; Veletsianos, 2020). To complement institutional understanding and quantitative metrics of retention, there needs to be more holistic research into the student experience that links OHE learning with a full account of the students’ lives outside of the classroom (Kahu et al., 2014; Shah & Cheng, 2019). Indeed, “few empirical studies of online learning offer reports of students’ experiences in their own words” (Veletsianos, 2020, p. 6).

Based on such claims, we argue that OHE dropout and persistence must be seen through the lens of student experience. However, we assume the standpoint that the experiences of all the other OHE actors – instructors, professors, learning designers, academic advisors – are also important, not only for attrition, but also and crucially for student success and persistence. Yet, there is an analogous dearth of research on the lived experiences of faculty regarding student dropout and retention (Badia & Chumpitaz-Campos, 2018; Dews-Farrar, 2018).

### 1.3. Context of Research

Our empirical research was performed in the context of a fully online open university, the Open University of Catalonia (*Universitat Oberta de Catalunya* - UOC). Established in 1995 as the world's first online university (UOC, 2021), it is currently the largest fully online university in Spain, with seven faculties and a doctoral school (Badia et al., 2019). During the 2020–2021 academic year, UOC had 87,500 active students, of which 48,074 were undertaking bachelor's degrees studies and 26,384 were new-entry students. Despite the hardships caused by the COVID-19 pandemic, UOC saw an increase of 18.57% in the number of new students in comparison with the previous year (UOC, 2021). Since its inception, the university has been committed to flexible, open entry policies as an integral part of its social commitment – “Our objective was to provide learning opportunities for all throughout their lives, regardless of their circumstances” (UOC, 2021). While its entry requisites are similar to the ones required by other Spanish public universities, UOC's academic system does not have compulsory enrollment nor completion deadlines, allowing students to take enrollment breaks and follow academic pathways of their choice (Grau-Valldosera, 2019).

UOC's typical students are *non-traditional learners*: adults with jobs and/or family responsibilities; 78.7% are 25 or over, ~90% study and work, and ~40% have multiple responsibilities (work and family); most (70%) have previous university experience (Sánchez-Gelabert, 2021). Half of the new students opt for the UOC and its flexibility so as to conciliate studies, work, and other responsibilities (UOC, 2020). However, a substantial proportion of UOC students (16.8%) corresponds to the *traditional* profile found in on-campus universities: young, without family or work responsibilities (Sánchez-Gelabert et al., 2020)<sup>5</sup>.

As discussed, the non-traditional student profile is more likely to suffer from conflictive commitments, which impact negatively academic performance, thus influencing dropout-proneness (Owen et al., 2017). Undergraduate dropout rate at UOC is 57.6%, in a long-term, program perspective, with first semester dropouts accounting for nearly half of this total; almost half (47.1%) of the new-entry students abandon their programs after the first year (Grau-Valldosera et al., 2018). Stopping out is important in this context, as only 6.2% of UOC students who take a break in their second semester return in the third semester (Grau-Valldosera et al., 2018). Dropout rates are similar for traditional and non-traditional students. However, female students (both traditional and non-traditional ones) are more likely to have persistent academic trajectories (Sánchez-Gelabert, 2021).

Regarding educational models, UOC employs a flexible, student-centered e-learning model and an asynchronous mode (Sangrà, 2002). Learning is integrally supported by the virtual campus encompassing a modern learning management system (Rivera-Vargas et al., 2021). UOC's learning model seeks to promote student autonomy and self-regulation, which are central for their learning process (Rivera-Vargas et al., 2021; Sánchez-Gelabert et al., 2020;

---

<sup>5</sup> Incidentally, it is likely that the number of new-entry traditional students at UOC has increased during the pandemic, as brick-and-mortar universities were closed or forced to adopt online delivery overnight. However, at present we do not have such data.

UOC, 2020). However, being largely self-directed, such model is strongly dependent upon the learners' agency and ability to manage their personal and academic responsibilities.

E-learning design at UOC is characterized by the full integration of continuous assessment (CA), of a diagnostic, formative, and summative character, employing graded continuous assessment activities (CAAs), which the student must submit online according to a pre-established calendar. CA is devised as a mechanism for learning and providing feedback in the learning process. In order to pass a course, students have to succeed in the CA process; in some cases, they have the alternative of only sitting final summative exams<sup>6</sup>, which are usually mandatory in undergraduate programs and for which the CA process prepares them. Therefore, dropping out of the CA process does not necessarily imply that the student dropped out of the course or failed it; but it is very often the first and most important step towards attrition. Nonetheless, at UOC dropout from CA is almost synonymous with dropout from or failing in a course. Thus, CA is arguably the prime moment to intervene in terms of dropout – for professors and instructors cannot control inter-semester dropout.

UOC faculty is composed by distinct actors. Coordinating professors<sup>7</sup> are responsible for the e-learning design of courses, including assessment and educational resources and goals, and for overseeing and supervising the work of instructors. Course instructors (usually part-time associate professors) are mainly responsible for teaching courses and guiding and monitoring the student learning process. Academic advisors guide and support students in everything that is not related to the course itself – enrollment and academic pathways, problem solution in general, and as intermediaries in the communication with other faculty and the institution – from initial registration to graduation (Sánchez-Gelabert et al., 2020; UOC, 2021).

Finally, this dissertation is also situated in a more specific context within the UOC and its Doctoral Program in Education and ICT. It was designed and elaborated in the context of the research line *Dropout in higher education: analysis of causes and design of interventions*<sup>8</sup>, coordinated by my doctoral supervisor, Julio Meneses. Thus, two UOC institutional interventions to foster student persistence and retention, designed and implemented within such research line in the eLearning Innovation Center and directed by Julio Meneses, also compose the context of our research. The first one, called SAC Project (*Millora del Seguiment de l'Avaluació Contínua – Improving Engagement in Continuous Assessment*)<sup>9</sup>, is the immediate context of Contribution 5 (Chapter 7), and is explained in depth therein. It first promoted debate

---

<sup>6</sup> Before the COVID pandemic, such exams were face-to-face; after 2020, they became fully online as well.

<sup>7</sup> In the fifth contribution below (Chapter 7), we called them “full professors”, and in the sixth contribution (Chapter 8), “tenured professors”, which are not entirely accurate. Faculty actors at UOC have different roles and positions in comparison to universities in other countries; the names of their positions in Spanish and Catalan are thus difficult to translate (respectively, *profesor responsable de asignatura* = coordinating professor; *profesor colaborador* = instructor; *tutor* = academic advisor). See also Rivera-Vargas et al. (2021).

<sup>8</sup> The research line has been renamed and expanded as *Analysing students' success and failure: Incorporation, retention, and graduation at the UOC*. See <https://www.uoc.edu/portal/en/escola-doctorat/linies-recerca/linies-elearning/responsive-teaching/index.html>

<sup>9</sup> This intervention project and the ones that followed it were preceded in 2014-2015 by a pilot project called *Project SAFE (Suport i Acompanyament per a la Fidelització de l'Estudiant – Supporting and Monitoring Student Retention)*, which aimed at designing, implementing, and evaluating future retention interventions.

among coordinating professors of possible *flexibility* measures that could be employed in their undergraduate courses to improve student continuance and success in the continuous assessment process, with the subsequent implementation of such measures at their discretion. The second intervention, ESPRIA (*Millora de l'Acompanyament dels EStudiants de PRImer Any* - Improving First-year Student Mentoring), is the context of Contribution 6 below (Chapter 8). It adopted flexibility measures derived from the SAC Project experience, while also adding changes in course design, program pathways, and academic support with the specific aims of providing first-year students with personalized support, realistic enrollments, and calibrated course workload and assessment. It thus seeks to help students adhere to and be successful in the continuous assessment process, particularly in their first semester, fostering their persistence and continuance (González et al., 2018, 2020; Meneses et al., 2019).

#### 1.4. Research Problem

Given the importance of the problems of dropout and persistence for OHE and for the UOC in particular, and the justifications and knowledge gaps argued above, this dissertation work explores and attempts to understand *dropout, persistence, and retention in open online higher education*, taking the *UOC as a case study* and focusing specifically on the influence of *time challenges, flexibility*, and the *first-year student experience* upon such phenomena. As a result, this work also offers recommendations to foster student persistence and success, thus preventing the problem of dropout and increasing retention.

#### 1.5. Research Questions and Objectives

This section presents the research questions and aims that guided our approach to the research problem delineated and discussed above.

The main research question (RQ) for this exploratory and descriptive investigation is:

- **RQ** What is the nature of the students' experiences that are connected to dropout and persistence in open OHE?

The main question can be subdivided into the following questions:

- Q1 What factors or reasons are perceived to be more important for dropout and persistence in open OHE?
- Q2 How does the time-factor impact upon student dropout and persistence in OHE, particularly in the first year of studies?
- Q3 What is the impact of flexibility, particularly in learning design and assessment, upon student persistence, attrition, and engagement in OHE?
- Q4 What possible recommendations can be proposed to improve persistence and retention in OHE?

Such research questions lead to the main aim (MA) of this investigation:

- **MA** To explore and understand the nature of the students' experiences connected to dropout and persistence in open OHE, especially in the first year of studies, focusing

on their reasons and perceptions of factors that influence such phenomena, paying particular attention to the influence of time challenges and flexibility.

The main aim may be subdivided into the following operative aims:

- A1 To understand what factors or reasons are perceived to be more important for dropout and persistence in open OHE;
- A2 To explore relationships between the time factor and dropout/persistence in OHE, according to such experiences;
- A3 To explore the perceived relations between flexibility (particularly in learning design) and attrition, retention, and engagement in OHE;
- A4 To explore and propose actionable practical recommendations so as to improve persistence and retention in OHE.

Wherefore, the research design chosen seeks to fulfill these aims and answer these research questions. A qualitative case study design was thus employed, taking the UOC as a case study, which is discussed in the next chapter. Next, we end this introductory chapter by presenting the organization of its chapters and the publications (contributions) that compose it.

## **1.6. Presentation of Publications and Organization of the Chapters**

This doctoral dissertation is structured as a compendium of publications composed of six scientific articles (plus a supplementary article as appendix). Table 1 provides details about them. In order to present these contributions, the dissertation was organized in nine chapters and four appendices. In the following, both chapters and publications are presented and briefly summarized, detailing their aims and relevance.

**Chapter 1**, *General Introduction* (this chapter), introduces the main research theme: the problems of dropout and persistence in OHE, and the specific foci of research chosen, alongside their relevance, the knowledge gaps in the literature, and justifications for their study. It then presents the immediate context of this work through a general presentation of the UOC and its characteristics, to ground its investigation as a case study of an open OHE university. The chapter concludes with the research questions and objectives of this dissertation and a brief presentation of our published contributions.

**Chapter 2**, *Method and Coherence of Contributions*, first discusses and justifies the research design and general methodological approach that guided the construction and production of our research contributions. Next, it emphasizes the aims and relevance of the contributions offered and the coherence between them and the general object of inquiry of this dissertation.

**Chapter 3** contains our first contribution (C1), titled *Dropout in Online Higher Education: A scoping review from 2014 to 2018* (Xavier & Meneses, 2020b). It offers a scoping review of the then recent literature (2014-2018) published in the field of online dropout studies. Mapping and synthesizing the characteristics of the extant literature in a very comprehensive way, encompassing 138 scientific articles and doctoral dissertations (grey literature), it presents a

broad overview of the academic output on the theme, and its research gaps, in order to provide a general theoretical background for the other investigations.

**Chapter 4** presents our Contribution 2 (C2), titled *The time factor in studies on dropout in online higher education: Initial review of the literature and future approaches* (Xavier & Meneses, 2018). This work was written at the beginning of my doctorate and presented as a conference communication (and a poster, see Appendix 2). It maps in an exploratory manner the specific literature and possible approaches to the problem of time-challenges and their relationships with student dropout in OHE. Analyzing the literature that was then available, we found and discussed two main theoretical approaches: time management and procrastination; and work-family-studies balance. This initial theoretical approximation was produced in preparation for the subsequent empirical inquiries into the perception and experiences of time-challenges among students (and – peripherally, or as a secondary theme – also among professors and learning designers). These experiences are the object of research in the next two chapters.

**Chapter 5** introduces our Contribution 3 (C3), *Persistence and time challenges in an open online university: A case study of the experiences of first-year learners* (Xavier & Meneses, 2022). Through qualitative in-depth interviews, the article explores how undergraduate UOC students experienced and managed time challenges in their first year and how these impacted their persistence. Like the next three contributions below, it was designed as a case study, to be embedded in the overarching case study of the UOC, which is the subject of this dissertation. The foci of inquiry in this research were determined by the importance of the time-factor in the literature; the need to understand the students' lived experience; and the importance of their first year of studies. Moreover, following the paradigmatic shift proposed by Tinto (2017) and discussed above, it addresses persistence (in lieu of retention) in order to illuminate what differentiates persisters and their time-related experiences, especially when they face the same challenges that lead other students to withdraw, and to what they attribute their persistence. To do so, we intentionally selected students with varied profiles (traditional and non-traditional, with part-time and full-time enrollment) so as to compare their experiences and viewpoints.

**Chapter 6** consists of Contribution 4 (C4), named *Dropout, stopout, and time challenges in open online higher education: A qualitative study of the first-year student experience* (Xavier et al., 2022)<sup>10</sup>. This qualitative case study is analogous to Contribution 3; however, instead of inquiring persisters, it explored how first-year students who withdrew from an open university (UOC) experienced and managed their time, how they perceived and coped with time challenges, and how the latter impacted their stopout or dropout behavior. This focus on students with varied profiles who dropped out or stopped out intends to understand the role of time – and other related factors – for their decisions to withdraw after their first semester. By comparing their respective profiles and narratives, we discuss what in their experiences is similar, but also what might differentiate them.

---

<sup>10</sup> This article was written in British English per the journal's instructions, while all the other contributions herein employed American English.



**Chapter 7** presents Contribution 5 (C5), *The tensions between student dropout and flexibility in learning design: The voices of professors in open online higher education* (Xavier & Meneses, 2021). This case study complements the focus on the student experience by analyzing the lived experiences of faculty – professors who are learning designers in an open online university (UOC). First, it addresses their perception of student dropout, its temporality and key reasons and drivers. Then, it addresses their experiences and opinions regarding flexibility in open online education, but more specifically in e-learning design and continuous assessment, and their perception of the risks and opportunities that more flexibility would imply for student persistence, engagement, and dropout. Finally, it discusses the feasibility and adequacy of intervention measures intended to provide students with more flexibility.

**Chapter 8** consists of the Contribution 6 (C6), an article titled *Fostering retention in online higher education: Students' perceptions of an intervention addressing their first-year experience* (Xavier & Meneses, 2020c). Following the study of the professors' experiences, this paper addresses an institutional intervention implemented in an open online university (UOC) based essentially on the adoption of flexibility measures in learning design and academic support, aiming at improving student engagement, persistence, and success. First, the intervention (ESPRIA, see above) is presented. To build this case study, UOC undergraduate first-year students with varied profiles were interviewed, as our aim was to give voice to their diverse experiences. Their profiles (e.g., young, traditional part-time learners) are characterized. The research explores their perception of intervention measures and their possible advantages or risks, while also discussing suggested flexible measures they would like to be implemented in their UOC programs or courses. Based on their experiences, the paper offers practical recommendations to guide further interventions to increase persistence.

**Chapter 9** is titled *Integrated Discussion of Research Findings and Conclusions*. It summarizes the results found in our contributions to answer the research questions and aims of this dissertation. Then, the results are further integrated and discussed grounded on the current body of literature. Based on this global discussion, several student-based recommendations for practice are suggested and, whenever possible, connected to references in the literature. Next, the conclusions section draws concluding inferences about the findings and their discussion and the originality of our contributions in academic and practical terms. Finally, it discusses the limitations of our contributions and of this dissertation, thus opening avenues for further research, which are suggested.

**Appendix 1** contains a supplementary contribution (SC1) titled *A literature review on the definitions of dropout in online higher education* (Xavier & Meneses, 2020a). It is a paper derived from our scoping review (C1), presented in an international congress and published in its proceedings. It focuses on the problem of definitions of dropout, persistence, and related constructs in the online dropout literature, identifying, synthesizing, and clarifying its key concepts. It addresses a major problem in the field that was pointed above – the lack of standardized definitions and constructs – and proposes recommendations to address it.

**Appendix 2** is a poster (SC2) presented at an international conference – *10th EDEN Research Workshop*, Barcelona – derived from C2 (Chapter 4), summarizing through a visual medium the results of our initial review of literature on the time-factor.

**Appendix 3** presents the complete chartered studies spreadsheet with the detailed 138 studies that were analyzed in our scoping review (Contribution 3). Each paper was coded in terms of, inter alia, year of publication; authors; keywords; type of publication; dropout concepts or definitions; dropout factors and models; unit of analysis (sample); research purposes; research domains and themes; method; data collection; findings; and strategies proposed to overcome dropout.

**Appendix 4** offers the interview protocols that were used as instruments for data collection for our empirical investigations.

Table 1. Scientific contributions

Published papers	Type	Relevance
<p><b>Contribution 1</b>  Xavier, M., &amp; Meneses, J. (2020b). <i>Dropout in Online Higher Education: A scoping review from 2014 to 2018</i>. eLearning Innovation Center, Universitat Oberta de Catalunya.  <a href="https://doi.org/10.7238/uoc.dropout.factors.2020">https://doi.org/10.7238/uoc.dropout.factors.2020</a></p>	E-book (UOC Repository)	No peer review ISBN: 978-84-09-21209-5
<p><b>Contribution 2</b>  Xavier, M., &amp; Meneses, J. (2018). The time factor in studies on dropout in online higher education: Initial review of the literature and future approaches. In J. M. Duart &amp; A. Szucs (Eds.), <i>Proceedings of the 10th EDEN Research Workshop: Towards Personalized Guidance and Support for Learning</i> (pp. 361-367). European Distance and E-Learning Network.  <a href="https://proceedings.eden-online.org/wp-content/uploads/2018/11/RW10_2018_Barcelona_Proceedings_ISSN.pdf">https://proceedings.eden-online.org/wp-content/uploads/2018/11/RW10_2018_Barcelona_Proceedings_ISSN.pdf</a></p>	Article published in congress proceedings	International congress Peer-reviewed, indexed ISSN: 2707-2819
<p><b>Contribution 3</b>  Xavier, M., &amp; Meneses, J. (2022). Persistence and time challenges in an open online university: A case study of the experiences of first-year learners. <i>International Journal of Educational Technology in Higher Education</i>, 19, Article no. 31.  <a href="https://doi.org/10.1186/s41239-022-00338-6">https://doi.org/10.1186/s41239-022-00338-6</a></p>	Article	JCR 2021 Quartile: Q1 Category: Education ISSN: 2365-9440
<p><b>Contribution 4</b>  Xavier, M., Meneses, J., &amp; Fiuza, P. J. (2022). Dropout, stopout, and time challenges in open online higher education: A qualitative study of the first-year student experience. <i>Open Learning: The Journal of Open and Distance Learning</i>.  <a href="https://doi.org/10.1080/02680513.2022.2160236">https://doi.org/10.1080/02680513.2022.2160236</a></p>	Article	JCR 2021 Quartile: Q2 Category: Education ISSN: 0268-0513
<p><b>Contribution 5</b>  Xavier, M., &amp; Meneses, J. (2021). The tensions between student dropout and flexibility in learning design: The voices of professors in open online higher education. <i>International Review of Research in Open and Distributed Learning</i>, 22(4), 72-88.  <a href="https://doi.org/10.19173/irrodl.v23i1.5652">https://doi.org/10.19173/irrodl.v23i1.5652</a></p>	Article	JCR 2021 Quartile: Q2 SJR 2021 Quartile: Q1 Category: Education ISSN: 1492-3831

<p><b>Contribution 6</b>  Xavier, M., &amp; Meneses, J. (2020b). Fostering retention in online higher education: Students' perceptions of an intervention addressing their first-year experience. In S. Softic, D. Andone, &amp; A. Szucs (Eds.), <i>European Distance and E-Learning Network (EDEN) Proceedings: Human and Artificial Intelligence for the Society of the Future</i> (pp. 389-397). <a href="http://doi.org/10.38069/edenconf-2020-ac0037">http://doi.org/10.38069/edenconf-2020-ac0037</a></p>	<p>Article published in congress proceedings</p>	<p>International congress Peer-reviewed, indexed ISSN: 2707-2819</p>
<p><b>Supplementary Contribution 1</b>  Xavier, M., &amp; Meneses, J. (2020a). A literature review on the definitions of dropout in online higher education. In S. Softic, D. Andone, &amp; A. Szucs (Eds.), <i>European Distance and E-Learning Network (EDEN) Proceedings: Human and Artificial Intelligence for the Society of the Future</i> (pp. 73-80). <a href="http://doi.org/10.38069/edenconf-2020-ac0004">http://doi.org/10.38069/edenconf-2020-ac0004</a></p>	<p>Article published in congress proceedings</p>	<p>International congress Peer-reviewed, indexed ISSN: 2707-2819</p>

## 1.7. References

- Adedoyin, O. B., & Soykan, E. (2020). Covid-19 pandemic and online learning: The challenges and opportunities. *Interactive learning environments*. <https://doi.org/10.1080/10494820.2020.1813180>
- Arce, M. E., Crespo, B., & Míguez-Álvarez, C. (2015). Higher education drop-out in Spain—Particular case of universities in Galicia. *International Education Studies*, 8, 247–264. <http://doi.org/10.5539/ies.v8n5p247>
- Ashby, A. (2004). Monitoring student retention in the Open University: Definition, measurement, interpretation and action. *Open Learning*, 19(1), 65–77. <https://doi.org/10.1080/0268051042000177854>
- Badia, A., & Chumpitaz-Campos, L. (2018). Teachers learn about student learning assessment through a teacher education process. *Studies in Educational Evaluation*, 58, 1–7. <https://doi.org/10.1016/j.stueduc.2018.05.004>
- Badia, A., Garcia, C., & Meneses, J. (2019). Emotions in response to teaching online: Exploring the factors influencing teachers in a fully online university. *Innovations in Education and Teaching International*, 56(4), 446-457. <https://doi.org/10.1080/14703297.2018.1546608>
- Balloo, K. (2018). In-depth profiles of the expectations of undergraduate students commencing university: A Q methodological analysis. *Studies in Higher Education*, 43(12), 2251-2262. <https://doi.org/10.1080/03075079.2017.1320373>
- Barberà, E., & Clarà, M. (2012). Time in e-Learning research: A qualitative review of the empirical consideration of time in research into e-Learning. *International Scholarly Research Network ISRN Education*, Article ID 640802. <https://doi.org/10.5402/2012/640802>
- Barberà, E., Gros, B., & Kirschner, P.A. (2012). Temporal issues in e-learning research: A literature review. *British Journal of Educational Technology*, 43(2), E53-E55. <https://doi.org/10.1111/j.1467-8535.2011.01255.x>
- Barberà, E., & Reimann, P. (Eds.) (2014). *Assessment and evaluation of time factors in online teaching and learning*. Information Science Reference.

- Bawa, P. (2016). Retention in online courses: Exploring issues and solutions - a literature review. *SAGE Open*, 6(1). <https://doi.org/10.1177/2158244015621777>
- Bean, J., & Metzner, B. (1985). A conceptual model of non-traditional undergraduate student attrition. *Review of Educational Research*, 55(4), 485-540. <http://doi.org/10.3102/00346543055004485>
- Becker, J. D. & Schad, M. (2022). Understanding the lived experiences of online learners: Towards a framework for phenomenological research on distance education. *Online Learning*, 26(2), 296-322. <http://doi.org/10.24059/olj.v26i2.2642>
- Beer, C., & Lawson, C. (2017). The problem of student attrition in higher education: An alternative perspective. *Journal of Further and Higher Education*, 41(6), 773-784. <https://doi.org/10.1080/0309877X.2016.1177171>
- Behr, A., Giese, M., Tegum Kamdjou, H. D., & Theune, K. (2020). Dropping out of university: A literature review. *Review of Education*, 8(2), 614–652. <https://doi.org/10.1002/rev3.3202>
- Bergamin, P. B., Ziska, S., Werlen, E., & Siegenthaler, E. (2012). The relationship between flexible and self-regulated learning in open and distance universities. *The International Review of Research in Open and Distributed Learning*, 13(2), 101–123. <https://doi.org/10.19173/irrodl.v13i2.1124>
- Bernardo, A. B., Castro-Lopez, A., & Mujica, A. D. (2022). Editorial: Higher education dropout after COVID-19: New strategies to optimize success. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.880295>
- Blackmon, S. J., & Major, C. (2012). Student experiences in online courses: A qualitative research synthesis. *Quarterly Review of Distance Education*, 13(2), 77–85.
- Bozkurt, A., Karakaya, K., Turk, M., Karakaya, Ö., & Castellanos-Reyes, D. (2022). The impact of COVID-19 on education: A meta-narrative review. *TechTrends*. <https://doi.org/10.1007/s11528-022-00759-0>
- Broadbent, J., & Poon, W. L. (2015). Self-regulated learning strategies & academic achievement in online higher education learning environments: A systematic review. *Internet and Higher Education*, 27, 1-13. <https://doi.org/10.1016/j.iheduc.2015.04.007>
- Brown, J. T., Kush, J. M., & Volk, F. A. (2022). Centering the marginalized: The impact of the pandemic on online student retention. *Journal of Student Financial Aid*, 51(1), Article 3. <https://doi.org/10.55504/0884-9153.1777>
- Brown, M., Hughes, H., Keppell, M., Hard, N., & Smith, L. (2015). Stories from students in their first semester of distance learning. *The International Review of Research in Open and Distributed Learning*, 16(4). <https://doi.org/10.19173/irrodl.v16i4.1647>
- Buck, S. (2016). In their own voices: Study habits of distance education students. *Journal of Library & Information Services in Distance Learning*, 10(3–4), 137–173. <https://doi.org/10.1080/1533290X.2016.1206781>
- Bunn, J. (2004). Student persistence in a LIS distance education program. *Australian Academic Research Libraries*, 35(3), 253-269. <https://doi.org/10.1080/00048623.2004.10755275>
- Butcher, J., & Rose-Adams, J. (2015). Part-time learners in open and distance learning: Revisiting the critical importance of choice, flexibility and employability. *Open*

- Learning: The Journal of Open, Distance and e-Learning*, 30(2), 127–137.  
<https://doi.org/10.1080/02680513.2015.1055719>
- Carney-Crompton, S., & Tan, J. (2002). Support systems, psychological functioning, and academic performance of nontraditional female students. *Adult Education Quarterly*, 52(2), 140-154. <https://doi.org/10.1177/0741713602052002005>
- Carnoy, M., Rabling, B. J., Castaño-Muñoz, J., Montoliu, J. M. D., & Sancho-Vinuesa, T. (2012). Does on-line distance higher education pay off for adult learners? The case of the Open University of Catalonia. *Higher Education Quarterly*, 66(3), 248–271.  
<https://doi.org/10.1111/j.1468-2273.2012.00520.x>
- Cerezo, R., Esteban, M., Sánchez-Santillán, M., & Núñez, J. C. (2017). Procrastinating behavior in computer-based learning environments to predict performance: A case study in Moodle. *Frontiers in Psychology*, 8.  
<https://doi.org/10.3389/fpsyg.2017.01403>
- Choi, H. J., & Park, J.-H. (2018). Testing a path-analytic model of adult dropout in online degree programs. *Computers & Education*, 116, 130-138.  
<https://doi.org/10.1016/j.compedu.2017.09.005>
- Chun Chu, A. H., & Choi, J. N. (2005). Rethinking procrastination: Positive effects of "active" procrastination behavior on attitudes and performance. *The Journal of Social Psychology*, 145(3), 245-264. <https://doi.org/10.3200/SOCP.145.3.245-264>
- Conole, G. (2012). *Designing for learning in an open world*. Springer.
- Conway, K. M., Wladis, C., & Hachey, A. C. (2021). Time poverty and parenthood: Who has time for college? *AERA Open*, 7(1), 1–17.  
<https://doi.org/10.1177/23328584211011608>
- Creelman, A., & Reneland-Forsman, L. (2013). Completion rates - a false trail to measuring course quality? *European Journal of Open, Distance and E-Learning*, 16(2), 40-49.  
<https://www.diva-portal.org/smash/get/diva2:652156/FULLTEXT01.pdf>
- Delnoij, L., Dirx, K., Janssen, J., & Martens, R. (2020). Predicting and resolving non-completion in higher (online) education – A literature review. *Educational Research Review*, 29. <https://doi.org/10.1016/j.edurev.2020.100313>
- Delnoij, L., Janssen, J., Dirx, K., Gijsselaers, H., de Groot, R. H., Neroni, J., de Bie, M., & Martens, R. (2021). Predicting completion: The road to informed study decisions in higher online education. *Frontiers in Education*, 6.  
<https://doi.org/10.3389/feduc.2021.668922>
- Deschacht, N., & Goeman, K. (2015). The effect of blended learning on course persistence and performance of adult learners: A difference-in-differences analysis. *Computers and Education*, 87, 83–89. <https://doi.org/10.1016/j.compedu.2015.03.020>
- Dews-Farrar, V. (2018). *Students' reflections and experiences in online learning: A qualitative descriptive inquiry of persistence* [Doctoral dissertation, Grand Canyon University]. ProQuest Dissertations & Theses Global.  
<https://search.proquest.com/docview/2036952458>
- Doherty, W. (2006). An analysis of multiple factors affecting retention in web-based community college courses. *Internet and Higher Education*, 9, 245–255.  
<https://doi.org/10.1016/j.iheduc.2006.08.004>



- Duncheon, J. C., & Tierney, W. G. (2013). Changing conceptions of time: Implications for educational research and practice. *Review of Educational Research*, 83(2), 236-272. <https://doi.org/10.3102/0034654313478492>
- Elvers, G. C., Polzella, D. J., & Graetz, K. (2003). Procrastination in online courses: Performance and attitudinal differences. *Teaching of Psychology*, 30(2), 159-162. [https://doi.org/10.1207/S15328023TOP3002\\_13](https://doi.org/10.1207/S15328023TOP3002_13)
- Farrell, O., & Brunton, J. (2020). A balancing act: A window into online student engagement experiences. *International Journal of Educational Technology in Higher Education*, 17(1), 1-19. <https://doi.org/10.1186/s41239-020-00199-x>
- Feldman, R. (Ed.). (2018). *The first year of college: Research, theory, and practice on improving the student experience and increasing retention*. Cambridge University Press.
- Fernández-Mellizo, M. (2022). *Análisis del abandono de los estudiantes de grado en las universidades presenciales en España*. Ministerio de Universidades, Gobierno de España. [https://www.universidades.gob.es/stfls/universidades/ministerio/ficheros/Informe\\_Abandono\\_Universitario\\_completo\\_MFMS.pdf](https://www.universidades.gob.es/stfls/universidades/ministerio/ficheros/Informe_Abandono_Universitario_completo_MFMS.pdf)
- Geduld, B. (2016). Exploring differences between self-regulated learning strategies of high and low achievers in open distance learning. *Africa Education Review*, 13(1), 164-181. <https://doi.org/10.1080/18146627.2016.1182739>
- González, L., Aracil, X., Serres, J., Calvo, A., Minguillón, J., & Meneses, J. (2020). Evaluando el proceso para asegurar los resultados: Experiencia de una intervención institucional orientada a la retención de los estudiantes de primer año. In C. Lindín, M. B. Esteban, J. C. F. Bergmann, N. Castells., & P. Rivera-Vargas (Eds.), *Llibre d'Actes de la I Conferència Internacional de Recerca en Educació (IRED'19): Reptes, Tendències i Compromisos* (pp. 1016-1024). Institut de Recerca en Educació, Universitat de Barcelona. <http://www.ub.edu/ired19>
- González, L., Minguillón, J., Martínez-Aceituno, J. A., & Meneses, J. (2018). Institutional support to provide freshmen with flexible learning paths at course and semester level in open higher education. In J. M. Duart, & A. Szucs (Eds.), *Proceedings of the 10th EDEN Research Workshop: Towards Personalized Guidance and Support for Learning* (pp. 344-350). European Distance and E-Learning Network.
- Grau-Valldosera, J. (2019). *A dropout definition for continuance intention and effective re-enrolment models in online distance learning* [Doctoral dissertation, Universitat Oberta de Catalunya]. UOC Repository. <http://hdl.handle.net/10609/112746>
- Grau-Valldosera, J. & Minguillón, J. (2013). When procrastination leads to dropping out: Analysing students at risk. *eLC Research Paper Series*, 6, 63-74. <https://elcrps.uoc.edu/elcrps/index.php/elcrps/article/view/1872.html>
- Grau-Valldosera, J., & Minguillón, J. (2014). Rethinking dropout in online higher education: The case of the Universitat Oberta de Catalunya. *The International Review of Research in Open and Distributed Learning*, 15(1), 290-308. <https://doi.org/10.1080/10494820.2018.1470986>
- Grau-Valldosera, J., Minguillón, J., & Blasco-Moreno, A. (2018). Returning after taking a break in online distance higher education: From intention to effective re-enrollment.

- Interactive Learning Environments*, 27(3), 307-323.  
<https://doi.org/10.1080/10494820.2018.1470986>
- Greenland, S. J., & Moore, C. (2014). Patterns of student enrolment and attrition in Australian open access online education: A preliminary case study. *Open Praxis*, 6(1), 45–54. <https://doi.org/10.5944/openpraxis.6.1.95>
- Greenland, S. J., & Moore, C. (2022). Large qualitative sample and thematic analysis to redefine student dropout and retention strategy in open online education. *British Journal of Educational Technology*, 53(3), 647-667.  
<https://doi.org/10.1111/bjet.13173>
- Guo, F., Hong, X., & Coates, H. (2020). Accelerated transformation: Designing global online higher education. *Higher Education Research & Development*, 39(7), 1322-1326.  
<https://doi.org/10.1080/07294360.2020.1824209>
- Hachey, A., Wladis, C., & Conway, K. (2012). Is the second time the charm? Investigating trends in online re-enrollment, retention and success. *Journal of Educators Online*, 9(1). <https://files.eric.ed.gov/fulltext/EJ972049.pdf>
- Hachey, A., Wladis, C., & Conway, K. (2018). What factors influence student decisions to drop online courses? Comparing online and face-to-face sections. *EDEN 2018 Conference Proceedings* (pp. 99-107). <https://doi.org/10.38069/edenconf-2018-ac-0015>
- Hart, C. (2012). Factors associated with student persistence in an online program of study: A review of the literature. *Journal of Interactive Online Learning*, 11(1), 19–42.  
<http://www.ncolr.org/jiol/issues/pdf/11.1.2.pdf>
- Hasan, U. C. A. R., Bozkurt, A., & Zawacki-Richter, O. (2021). Academic procrastination and performance in distance education: a causal-comparative study in an online learning environment. *Turkish Online Journal of Distance Education*, 22(4), 13-23.  
<https://doi.org/10.17718/tojde.1002726>
- Henry, M. (2018). *The online student experience: An exploration of first-year university students' expectations, experiences and outcomes of online education*. [Doctoral dissertation, Edith Cowan University]. ECU Repository.  
<https://ro.ecu.edu.au/theses/2059>
- Henry, M. (2020). Online student expectations: A multifaceted, student-centred understanding of online education. *Student Success*, 11(2), 91-98.  
<https://doi.org/10.5204/ssj.1678>
- Holcomb, J., Jackson, J., Korstange, R., & Hall, J. (2018, May 8). From first steps to next steps: The Online First Year Experience (OFYE), Part 1. *The Evollution*.  
[https://evollution.com/revenue-streams/distance\\_online\\_learning/from-first-steps-to-next-steps-the-online-first-year-experience-ofye-part-1/](https://evollution.com/revenue-streams/distance_online_learning/from-first-steps-to-next-steps-the-online-first-year-experience-ofye-part-1/)
- Holder, B. (2007). An investigation of hope, academics, environment, and motivation as predictors of persistence in higher education online programs. *Internet and Higher Education*, 10(4), 245–260. <https://doi.org/10.1016/j.iheduc.2007.08.002>
- Hong, J. C., Lee, Y. F., & Ye, J. H. (2021). Procrastination predicts online self-regulated learning and online learning ineffectiveness during the coronavirus lockdown. *Personality and Individual Differences*, 174, 110673.  
<https://doi.org/10.1016/j.paid.2021.110673>

- Houlden, S., & Veletsianos, G. (2019). A posthumanist critique of flexible online learning and its “anytime anyplace” claims. *British Journal of Educational Technology*, 50(3), 1005-1018. <https://doi.org/10.1111/bjet.12779>
- Houlden, S., & Veletsianos, G. (2021). The problem with flexible learning: Neoliberalism, freedom, and learner subjectivities. *Learning, Media and Technology*, 46(2), 144-155. <https://doi.org/10.1080/17439884.2020.1833920>
- Hülsmann, T., Barberà, E., & Roberts, J. (2015). Editorial: Distance education and time. *Distance Education*, 36(2), 155–160. <http://doi.org/10.1080/01587919.2015.1056333>
- Hyllegard, D., Deng, H., & Hunter, C. (2008). Why do students leave online courses? Attrition in community college distance learning courses. *International Journal of Instructional Media*, 35(4), 429-434.
- Ilgaz, H., & Gülbahar, Y. (2015). A snapshot of online learners: E-readiness, e-satisfaction and expectations. *International Review of Research in Open and Distance Learning*, 16(2). <https://doi.org/10.19173/irrodl.v16i2.2117>
- James, R., Krause, K.-L., & Jennings, C. (2010). *The first year experience in Australian universities: Findings from 1994 to 2009*. Centre for Studies in Higher Education, University of Melbourne.
- Kahu, E. R., Stephens, C., Zepke, N., & Leach, L. (2014). Space and time to engage: Mature-aged distance students learn to fit study into their lives. *International Journal of Lifelong Education*, 33(4), 523–540. <https://doi.org/10.1080/02601370.2014.884177>
- Kara, M., Erdoğan, F., Kokoç, M., & Cagiltay, K. (2019). Challenges faced by adult learners in online distance education: A literature review. *Open Praxis*, 11(1), 5-22. <https://doi.org/10.5944/openpraxis.11.1.929>
- Katiso, A. E. (2015). *Online adult students' time management skills and their academic achievement and persistence: Technology-based learning and student success* [Doctoral dissertation, Keyser University]. ProQuest Dissertations & Theses Global. <https://www.proquest.com/docview/1783598302/>
- Kember, D. (1989). A longitudinal-process model of drop-out from distance education. *The Journal of Higher Education*, 60(3), 278-301. <https://doi.org/10.1080/00221546.1989.11775036>
- Kember, D. (1995). *Open learning courses for adults: A model of student progress*. Educational Technology Publications.
- Kember, D. (1999) Integrating part-time study with family, work and social obligations. *Studies in Higher Education*, 24(1), 109-124. <https://doi.org/10.1080/03075079912331380178>
- Kember, D., & Leung, D. (2004). Relationship between the employment of coping mechanisms and a sense of belonging for part-time students. *Educational Psychology*, 24(3), 345-357. <https://doi.org/10.1080/0144341042000211689>
- Kember, D., Leung, D., & Prosser, M. (2021). Has the open door become a revolving door? The impact on attrition of moving from elite to mass higher education. *Studies in Higher Education*, 46(2), 258–269. <https://doi.org/10.1080/03075079.2019.1629411>
- Kember, D., Trimble, A., & Fan, S. (2022). An investigation of the forms of support needed to promote the retention and success of online students. *American Journal of Distance Education*. <https://doi.org/10.1080/08923647.2022.2061235>



- Kember, D., Ying, C. K., Wan, C. S., Yung, C. S., Wai, C. T., et al. (2005). How students cope with part-time study. *Active Learning in Higher Education*, 6(3), 230-242. <https://doi.org/10.1177/1469787405057662>
- Kergel, D., Heidkamp, B., Tellés, P. K., Rachwal, T., & Nowakowski, S. (Eds.) (2018). *The digital turn in higher education: International perspectives on learning and teaching in a changing world*. Springer. <https://doi.org/10.1007/978-3-658-19925-8>
- Kim, K. R., & Seo, E. H. (2015). The relationship between procrastination and academic performance: A meta-analysis. *Personality and Individual Differences*, 82, 26-33. <https://doi.org/10.1016/j.paid.2015.02.038>
- Klingsieck, K. B., Fries, S., Horz, C., & Hofer, M. (2012). Procrastination in a distance university setting. *Distance Education*, 33(3), 295-310. <https://doi.org/10.1080/01587919.2012.723165>
- Knestrick, J. M., Wilkinson, M. R., Pellathy, T. P., Lange-Kessler, J., Katz, R., & Compton, P. (2016). Predictors of retention of students in an online nurse practitioner program. *Journal for Nurse Practitioners*, 12(9), 635–640. <https://doi.org/10.1016/j.nurpra.2016.06.011>
- Kocdar, S., Karadeniz, A., Bozkurt, A., & Buyuk, K. (2018). Measuring self-regulation in self-paced open and distance learning environments. *The International Review of Research in Open and Distributed Learning*, 19(1), 25–43. <https://doi.org/10.19173/irrodl.v19i1.3255>
- Korstange, R., Hall, J., Holcomb, J., & Jackson, J. (2020). The online first-year experience: Defining and illustrating a new reality. *Adult Learning*, 31(3), 95-108. <https://doi.org/10.1177/1045159519892680>
- KPMG (2020). *The future of higher education in a disruptive world*. <https://home.kpmg/xx/en/home/industries/government-public-sector/education/the-future-of-higher-education-in-a-disruptive-world.html>
- Kuo, Y. C., Walker, A. E., Schroder, K. E. E., & Belland, B. R. (2014). Interaction, Internet self-efficacy, and self-regulated learning as predictors of student satisfaction in online education courses. *Internet and Higher Education*, 20, 35-50. <https://doi.org/10.1016/j.iheduc.2013.10.001>
- Larsen, M. S., Kornbeck, K. P., Kristensen, R., Larsen, M. R. & Sommersel, H. B. (2013) *Dropout phenomena at universities: What is dropout? Why does dropout occur? What can be done by the universities to prevent or reduce it? A systematic review*. Danish Clearinghouse for Educational Research. [https://edudoc.ch/record/115243/files/Dropout\\_universities\\_technical\\_report.pdf](https://edudoc.ch/record/115243/files/Dropout_universities_technical_report.pdf)
- Lee, K., Choi, H., & Cho, Y. H. (2019). Becoming a competent self: A developmental process of adult distance learning. *The Internet and Higher Education*, 41, 25-33. <https://doi.org/10.1016/j.iheduc.2018.12.001>
- Lee, Y., & Choi, J. (2011). A review of online course dropout research: Implications for practice and future research. *Educational Technology Research and Development*, 59, 593–618. <https://doi.org/10.1007/s11423-010-9177-y>
- Lee, Y., Choi, J., & Kim, T. (2013). Discriminating factors between completers of and dropouts from online learning courses. *British Journal of Educational Technology*, 44(2), 328-337. <https://doi.org/10.1111/j.1467-8535.2012.01306.x>

- Lehan, T. J., Hussey, H. D., & Shriner, M. (2018). The influence of academic coaching on persistence in online graduate students. *Mentoring & Tutoring: Partnership in Learning*, 26(3), 289-304. <https://doi.org/10.1080/13611267.2018.1511949>
- Li, K., Wong, B. Y. Y. (2018). Revisiting the definitions and implementation of flexible learning. In K. Li, K. Yuen, & B. Wong (Eds.), *Innovations in open and flexible education* (pp. 3-13). Springer, Singapore. [https://doi.org/10.1007/978-981-10-7995-5\\_1](https://doi.org/10.1007/978-981-10-7995-5_1)
- Li, K., & Wong, B. T. M. (2019). Factors related to student persistence in open universities: Changes over the years. *International Review of Research in Open and Distributed Learning*, 20(4), 132-151. <https://doi.org/10.19173/irrodl.v20i4.4103>
- Li, N., Marsh, V., Rienties, B., & Whitelock, D. (2017). Online learning experiences of new versus continuing learners: a large-scale replication study. *Assessment & Evaluation in Higher Education*, 42(4), 657-672. <https://doi.org/10.1080/02602938.2016.1176989>
- Manca, S., Grion, V., Armellini, A., & Devecchi, C. (2017). Editorial: Student voice. Listening to students to improve education through digital technologies. *British Journal of Educational Technology*, 48(5), 1075–1080. <https://doi.org/10.1111/bjet.12568>
- Martin, J. M. (2017). It just didn't work out: Examining nonreturning students' stories about their freshman experience. *Journal of College Student Retention: Research, Theory and Practice*, 19(2), 176–198. <https://doi.org/10.1177/1521025115611670>
- McClelland, T. J. (2014). *Why do they leave? An exploration of situational, dispositional, institutional, technological, and epistemological factors on undergraduate student withdrawal from online studies at an institute of technology in New Zealand*. [Doctoral dissertation, Northeastern University]. NU Campus Repository. <https://repository.library.northeastern.edu/files/neu:349649/fulltext.pdf>
- McNeill, B. (2014). Time and the working online learner. In E. Barberà & P. Reimann (Eds.), *Assessment and evaluation of time factors in online teaching and learning* (pp. 24-62). Information Science Reference. <https://doi.org/10.4018/978-1-4666-4651-3.ch00>
- Melgaard, J., Monir, R., Lasrado, L. A., & Fagerstrøm, A. (2022). Academic procrastination and online learning during the COVID-19 pandemic. *Procedia Computer Science*, 196, 117-124. <https://doi.org/10.1016/j.procs.2021.11.080>
- Meneses, J., Minguillón, J., González, L., & Martínez-Aceituno, T. (2019). *ESPRIA. Millora de l'Acompanyament dels Estudiants de Primer Any*. Universitat Oberta de Catalunya. <http://hdl.handle.net/10609/103166>
- Michinov, N., Brunot, S., Le Bohec, O., Juhel, J., & Delaval, M. (2011). Procrastination, participation, and performance in online learning environments. *Computers & Education*, 56(1), 243–252. <https://doi.org/10.1016/j.compedu.2010.07.025>
- Ministerio de Universidades [Spain] (2021). *Datos y cifras del sistema universitario español: Publicación 2020-2021*. [https://www.universidades.gob.es/stfls/universidades/Estadisticas/ficheros/Datos\\_y\\_Cifras\\_2020-21.pdf](https://www.universidades.gob.es/stfls/universidades/Estadisticas/ficheros/Datos_y_Cifras_2020-21.pdf)
- Møeglin, P., & Vidal, M. (2015). Managing time, workload and costs in distance education: Findings from a literature review of Distances et Médiations des Savoirs (formerly

- Distances et Savoirs). *Distance Education*, 36(2), 282-289.  
<http://doi.org/10.1080/01587919.2015.1056335>
- Moore, C., & Greenland, S. (2017). Employment-driven online student attrition and the assessment policy divide: An Australian open-access higher education perspective. *Journal of Open, Flexible and Distance Learning*, 21(1), 52–62.  
<https://doi.org/10.3316/informit.957285975121219>
- Mor, Y., & Craft, B. (2012). Learning design: Reflections upon the current landscape. *Research in Learning Technology*, 20(Suppl.), 85–94.  
<https://doi.org/10.3402/rlt.v20i0.19196>
- Muljana, P. S., & Luo, T. (2019). Factors contributing to student retention in online learning and recommended strategies for improvement: A systematic literature review. *Journal of Information Technology Education: Research*, 18, 19-57.  
<https://doi.org/10.28945/4182>
- Müller, T. (2008). Persistence of women in online degree-completion programs. *International Review of Research in Open and Distributed Learning*, 9(2), 1-18.  
<https://doi.org/10.19173/irrodl.v9i2.455>
- Murphy, C. A., & Stewart, J. C. (2017). On-campus students taking online courses: Factors associated with unsuccessful course completion. *The Internet and Higher Education*, 34, 1-9. <https://doi.org/10.1016/j.iheduc.2017.03.001>
- Myers, F., Glover, H., & Stephens, C. (2021). Learner interrupted: understanding the stories behind the codes—A qualitative analysis of HE distance-learner withdrawals. *Journal of Further and Higher Education*, 45(8), 1134-1146.  
<https://doi.org/10.1080/0309877X.2021.1931061>
- Naidu, S. (2014). Foreword. In E. Barberà & P. Reimann (Eds.), *Assessment and evaluation of time factors in online teaching and learning* (pp. xiii-xv). Information Science Reference.
- Naidu, S. (2017a). Openness and flexibility are the norm, but what are the challenges? *Distance Education*, 38(1), 1–4. <https://doi.org/10.1080/01587919.2017.1297185>
- Naidu, S. (2017b). How flexible is flexible learning, who is to decide and what are its implications? *Distance Education*, 38(3), 269–272.  
<https://doi.org/10.1080/01587919.2017.1371831>
- Naylor, D., & Nyanjom, J. (2021). Educators’ emotions involved in the transition to online teaching in higher education. *Higher Education Research & Development*, 40(6), 1236-1250. <https://doi.org/10.1080/07294360.2020.1811645>
- Netanda, R. S., Mamabolo, J., & Themane, M. (2019). Do or die: Student support interventions for the survival of distance education institutions in a competitive higher education system. *Studies in Higher Education*, 44(2), 397–414.  
<https://doi.org/10.1080/03075079.2017.1378632>
- Nikolova, I., & Collis, B. (1998). Flexible learning and design of instruction. *British Journal of Educational Technology*, 29(1), 59–72. <https://doi.org/10.1111/1467-8535.00046>
- Nguyen, Q., Rienties, B., & Whitelock, D. (2022). Informing learning design in online education using learning analytics of student engagement. In B. Rienties, R. Hampel, E. Scanlon, & D. Whitelock (Eds.), *Open world learning: Research, innovation and*

- the challenges of high-quality education* (pp. 189-207). Routledge.  
<https://doi.org/10.4324/9781003177098-17>
- Nistor, N., & Neubauer, K. (2010). From participation to dropout: Quantitative participation patterns in online university courses. *Computers and Education*, 55(2), 663–672.  
<https://doi.org/10.1016/j.compedu.2010.02.026>
- Orellana, D., Segovia, N., & Cánovas, B. R. (2020). El abandono estudiantil en programas de educación superior virtual: revisión de literatura. *Revista de la Educación Superior*, 49(194), 45-62. <https://doi.org/10.36857/resu.2020.194.1124>
- Ortiz-Lozano, J. M., Rua-Vieites, A., Bilbao-Calabuig, P., & Casadesús-Fa, M. (2018). University student retention: Best time and data to identify undergraduate students at risk of dropout. *Innovations in Education and Teaching International*, 57(1), 74-85.  
<https://doi.org/10.1080/14703297.2018.1502090>
- O’Shea, S. (2022). Negotiating embodied aspirations: Exploring the emotional labour of higher education persistence for female caregivers. In G. Hook, M. P. Moreau, & R. Brooks, (Eds.), *Student carers in higher education: Navigating, resisting, and re-inventing academic cultures* (pp. 28-45). Routledge.  
<https://doi.org/10.4324/9781003177104-3>
- O’Shea, S., Stone, C., & Delahunty, J. (2015). “I ‘feel’ like I am at university even though I am online”: Exploring how students narrate their engagement with higher education institutions in an online learning environment. *Distance Education*, 36(1), 41–58.  
<https://doi.org/10.1080/01587919.2015.1019970>
- Owen, M., Kavanagh, P., & Dollard, M. (2017). An integrated model of work–study conflict and work–study facilitation. *Journal of Career Development*, 45(5), 504-517.  
<https://doi.org/10.1177/0894845317720071>
- Palvia, S., Aeron, P., Gupta, P., Mahapatra, D., Parida, R., Rosner, R., & Sindhi, S. (2018). Online education: Worldwide status, challenges, trends, and implications. *Journal of Global Information Technology Management*, 21(4), 233-241.  
<https://doi.org/10.1080/1097198X.2018.1542262>
- Park, J. H., & Choi, H. J. (2009). Factors influencing adult learners' decision to drop out or persist in online learning. *Journal of Educational Technology & Society*, 12(4), 207-217. <https://doi.org/10.2307/jeductechsoci.12.4.207>
- Rienties, B., & Toetenel, L. (2016). The impact of learning design on student behaviour, satisfaction and performance: A cross-institutional comparison across 151 modules. *Computers in Human Behavior*, 60, 333-341.  
<https://doi.org/10.1016/j.chb.2016.02.074>
- Rivera-Vargas, P., Anderson, T. & Cano, C. A. (2021). Exploring students’ learning experience in online education: analysis and improvement proposals based on the case of a Spanish open learning university. *Education Technology Research and Development*, 69, 3367–3389. <https://doi.org/10.1007/s11423-021-10045-0>
- Romero, M. (2011). Distance learners’ work life learning balance. *Journal of Instructional Technology and Distance Learning*, 8(5), 43–48.
- Romero, M., & Barberà, E. (2011). Quality of learners’ time and learning performance beyond quantitative time-on-task. *International Review of Research in Open and Distributed Learning*, 12(5), 125-137. <https://doi.org/10.19173/irrodl.v12i5.999>

- Romero, M., & Barberà, E. (2015). Lifelong learners and teacher's time-management competency in e-learning. In M. Ally & B. H. Khan (Eds.), *International Handbook of E-Learning Volume 2: Implementation and Case Studies* (pp. 135-146). Routledge. <https://doi.org/10.4324/9781315760902-13>
- Romero, M., & Gentil, C. (2014). Characterizing online learners' time regulation: Comparative case studies of virtual campuses in France and Spain. In E. Barberà & P. Reimann (Eds.), *Assessment and evaluation of time factors in online teaching and learning* (pp. 91-110). Information Science Reference. <https://doi.org/10.4018/978-1-5225-5472-1.ch077>
- Rotar, O. (2020). *A missing element of online HE students' attrition, retention, and success: An analysis through a systematic literature review* (Working Paper No. 3). CHERE, Lancaster University. <https://www.lancaster.ac.uk/educational-research/research/centre-for-higher-education-research-and-evaluation/working-papers/>
- Samra, R., Waterhouse, P., & Lucassen, M. (2021). Combining and managing work-family-study roles and perceptions of institutional support. *Distance Education*, 42(1), 88-105. <https://doi.org/10.1080/01587919.2020.1869530>
- Sánchez-Gelabert, A. (2021). Non-traditional students, university trajectories, and higher education institutions: A comparative analysis of face-to-face and online universities. *Studia Paedagogica*, 25(4), 51-72. <http://doi.org/10.5817/SP2020-4-3>
- Sánchez-Gelabert, A. (2022). *Condicions socials i de vida dels estudiants, trajectòries acadèmiques i modalitat d'universitat: Una aproximació a l'abandonament universitari* [Doctoral dissertation, Universitat Autònoma de Barcelona]. UAB Repository. <https://ddd.uab.cat/record/265580>
- Sánchez-Gelabert, A., & Elías, M. (2017). Los estudiantes universitarios no tradicionales y el abandono de los estudios. *Estudios sobre Educación*, 32, 27-48. <http://doi.org/10.15581/004.32.27-48>
- Sánchez-Gelabert, A., Valente, R., & Duarte, J. M. (2020). Profiles of online students and the impact of their university experience. *The International Review of Research in Open and Distributed Learning*, 21(3), 230-249. <https://doi.org/10.19173/irrodl.v21i3.4784>
- Sangrà, A. (2002). A new learning model for the information and knowledge society: The case of the Universitat Oberta de Catalunya (UOC), Spain. *The International Review of Research in Open and Distributed Learning*, 2(2). <https://doi.org/10.19173/irrodl.v2i2.55>
- Selwyn, N. (2011). 'Finding an appropriate fit for me': Examining the (in)flexibilities of international distance learning. *International Journal of Lifelong Education*, 30(3), 367-383. <https://doi.org/10.1080/02601370.2011.570873>
- Shachar, M., & Neumann, Y. (2010). Twenty years of research on the academic performance differences between traditional and distance learning: Summative meta-analysis and trend examination. *MERLOT Journal of Online Learning and Teaching*, 6(2). [https://jolt.merlot.org/vol6no2/shachar\\_0610.htm](https://jolt.merlot.org/vol6no2/shachar_0610.htm)
- Shah, M., & Cheng, M. (2019). Exploring factors impacting student engagement in open access courses. *Open Learning*, 34, 187-202. <https://doi.org/10.1080/02680513.2018.1508337>



- Shah, M., Pabel, A., Richardson, J. (2021). Introduction to the twenty-first century student experience: Issues, trends, disruptions and expectations. In M. Shah, J. Richardson, A. Pabel, & B. Oliver (Eds.), *Assessing and enhancing student experience in higher education* (pp. 1-17). Palgrave Macmillan, Cham. [https://doi.org/10.1007/978-3-030-80889-1\\_1](https://doi.org/10.1007/978-3-030-80889-1_1)
- Shaikh, U., & Asif, Z. (2022). Persistence and dropout in higher online education: Review and categorization of factors. *Frontiers in Psychology, 13*, Article 902070. <https://doi.org/10.3389/fpsyg.2022.902070>
- Shea, P., & Bidjerano, T. (2014). Does online learning impede degree completion? A national study of community college students. *Computers & Education, 75*, 103-111. <https://doi.org/10.1016/j.compedu.2014.02.009>
- Sheail, P. (2018). Temporal flexibility in the digital university: Full-time, part-time, flexitime. *Distance Education, 39*(4), 462-479. <https://doi.org/10.1080/01587919.2018.1520039>
- Simpson, O. (2003). *Student retention in online, open and distance learning*. Routledge. <https://doi.org/10.4324/9780203416563>
- Simpson, O. (2004). *Supporting students for success in online and distance education*. Routledge. <https://doi.org/10.4324/9780203095737>
- Simpson, O. (2010). '22% - can we do better?' - *The CWP Retention Literature Review Final report*. Open University UK. <https://ormondsimpson.com/wp-content/uploads/2016/05/Retention-literature-review.pdf>
- Simpson, O. (2012). Technology-supported assessment for retention. In L. Clouder, C. Broughan, S. Jewell, & G. Steventon (Eds.), *Improving student engagement and development through assessment* (pp. 195-209). Routledge. <https://doi.org/10.4324/9780203817520>
- Simpson, O. (2013). Student retention in distance education: Are we failing our students? *Open Learning: The Journal of Open, Distance and e-Learning, 28*(2), 105–119. <https://doi.org/10.1080/02680513.2013.847363>
- Snyder, J. (2014). *Student perceptions of online learning and persistence for course completion* (Publication No. 3613731) [Doctoral dissertation, Walden University]. ProQuest Dissertations & Theses Global. <http://search.proquest.com/docview/1512414837>
- Soffer, T., Kahan, T., & Nachmias, R. (2019). Patterns of students' utilization of flexibility in online academic courses and their relation to course achievement. *The International Review of Research in Open and Distributed Learning, 20*(3). <https://doi.org/10.19173/irrodl.v20i4.3949>
- Sorensen, C., & Donovan, J. (2017). An examination of factors that impact the retention of online students at a for-profit university. *Online Learning, 21*(3), 206–221. <https://doi.org/10.24059/olj.v21i3.935>
- Steel, P., & Klingsieck, K. B. (2016). Academic procrastination: Psychological antecedents revisited. *Australian Psychologist, 51*(1), 36-46. <https://doi.org/10.1111/ap.12173>
- Stephen, J., Rockinson-Szapkiw, A., & Dubay, C. (2020). Persistence model of non-traditional online learners: Self-efficacy, self-regulation, and self-direction. *American*

- Journal of Distance Education*, 34(4), 306-321.  
<https://doi.org/10.1080/08923647.2020.1745619>
- Stone, C., & O'Shea, S. (2019a). Older, online and first: Recommendations for retention and success. *Australasian Journal of Educational Technology*, 35(1), 57–69.  
<https://doi.org/10.14742/ajet.3913>
- Stone, C., & O'Shea, S. (2019b). My children... think it's cool that Mum is a uni student: Women with caring responsibilities studying online. *Australasian Journal of Educational Technology*, 35(6), 97-110. <https://doi.org/10.14742/ajet.5504>
- Storrings, D. A. (2005). *Attrition in distance education: A meta-analysis* (Publication No. 305382352) [Doctoral dissertation, Syracuse University]. ProQuest Dissertations & Theses Global.
- Svartdal, F., Dahl, T. I., Gamst-Klaussen, T., Koppenborg, M., & Klingsieck, K. B. (2020). How study environments foster academic procrastination: Overview and recommendations. *Frontiers in Psychology*, 11, Article No. 540910.  
<https://doi.org/10.3389/fpsyg.2020.540910>
- Tait, A. (2015). *Student success in open, distance and e-learning*. International Council for Open and Distance Learning. <https://www.glokalde.com/pdf/issues/3/republished-2.pdf>
- Tait, A. (2018). Education for development: From distance to open education. *Journal of Learning for Development*, 5(2), 101-115. <https://www.learntechlib.org/p/189225/>
- Theobald, M., & Bellhäuser, H. (2022). How am I going and where to next? Elaborated online feedback improves university students' self-regulated learning and performance. *The Internet and Higher Education*, 55, Article 100872.  
<https://doi.org/10.1016/j.iheduc.2022.100872>
- Thomas, L. (2011). Do pre-entry interventions such as 'Aimhigher' impact on student retention and success? A review of the literature. *Higher Education Quarterly*, 65(3), 230–250. <https://doi.org/10.1111/j.1468-2273.2010.00481.x>
- Thorpe, M. (2006). Perceptions about time and learning: Researching the student experience. *Distances et Savoirs*, 4(4), 497–511. <https://doi.org/10.3166/ds.4.497-511>
- Tinto, V. (1975). Dropout from Higher Education: A theoretical synthesis of recent research. *Review of Educational Research*, 45(1), 89-125.  
<https://doi.org/10.3102/00346543045001089>
- Tinto, V. (1982). Defining dropout: A matter of perspective. *New Directions for Institutional Research*, 1982(36), 3-15. <https://doi.org/10.1002/ir.37019823603>
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). University of Chicago Press.
- Tinto, V. (2006). Research and practice of student retention: What next? *Journal of College Student Retention*, 8(1), 1–19. <https://doi.org/10.2190/4YNU-4TMB-22DJ-AN4W>
- Tinto, V. (2017). Reflections on student persistence. *Student Success*, 8(2), 1-8.  
<https://doi.org/10.5204/ssj.v8i2.376>
- Tinto, V., & Pusser, B. (2006). *Moving from theory to action: Building a model of institutional action for student success*. National Postsecondary Education Cooperative.

[https://www.researchgate.net/publication/251378009\\_Moving\\_From\\_Theory\\_to\\_Acti\\_on\\_Building\\_a\\_Model\\_of\\_Institutional\\_Action\\_for\\_Student\\_Success](https://www.researchgate.net/publication/251378009_Moving_From_Theory_to_Acti_on_Building_a_Model_of_Institutional_Action_for_Student_Success)

- Tresman, S. (2002). Towards a strategy for improved student retention in programmes of open, distance education: A case study from the Open University UK. *The International Review of Research in Open and Distributed Learning*, 3(1).  
<https://doi.org/10.19173/irrodl.v3i1.75>
- UOC (2020). *Report of the 2018–2019 academic year: We grow in research, we share knowledge*. Universitat Oberta de Catalunya.  
[https://www.uoc.edu/portal/\\_resources/ES/documents/memories/1819/memoria-UOC-2018-2019\\_es.pdf](https://www.uoc.edu/portal/_resources/ES/documents/memories/1819/memoria-UOC-2018-2019_es.pdf)
- UOC (2021). *Annual report 2020/2021: 25 years learning and transforming*. Universitat Oberta de Catalunya.  
[https://www.uoc.edu/portal/\\_resources/CA/documents/memories/2021/UOC\\_Memoria-2020-21-EN.pdf](https://www.uoc.edu/portal/_resources/CA/documents/memories/2021/UOC_Memoria-2020-21-EN.pdf)
- Veletsianos, G. (2020). *Learning online: The student experience*. JHU Press.
- Veletsianos, G., & Houlden, S. (2019). An analysis of flexible learning and flexibility over the last 40 years of *Distance Education*. *Distance Education*, 40(4), 454-468.  
<https://doi.org/10.1080/01587919.2019.1681893>
- Veletsianos, G., & Houlden, S. (2020). Radical flexibility and relationality as responses to education in times of crisis. *Postdigital Science and Education*, 2(3), 849-862.  
<https://doi.org/10.1007/s42438-020-00196-3>
- Veletsianos, G., Kimmons, R., Larsen, R., & Rogers, J. (2021). Temporal flexibility, gender, and online learning completion. *Distance Education*, 42(1), 22-36.  
<https://doi.org/10.1080/01587919.2020.1869523>
- Wang, Y., Zhang, J., & Lee, H. (2021). An online experiment during COVID-19: Testing the influences of autonomy support toward emotions and academic persistence. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.747209>
- Wavle, S. (2021). *An exploratory mixed methods study of persistence patterns in online undergraduate programs and perspectives of returning online undergraduate students* [Doctoral dissertation, Indiana University]. IU Repository.  
<https://hdl.handle.net/2022/26474>
- Wavle, S., & Ozogul, G. (2019). Investigating the impact of online classes on undergraduate degree completion. *Online Learning*, 23(4), 281-295.  
<https://doi.org/10.24059/olj.v23i4.1558>
- Whitelock, D., Thorpe, M., & Galley, R. (2015). Student workload: a case study of its significance, evaluation and management at the Open University. *Distance Education*, 36(2), 161-176. <https://doi.org/10.1080/01587919.2015.1055059>
- Willging, P. A. & Johnson, S. D. (2009). Factors that influence students' decision to dropout of online courses. *Journal of Asynchronous Learning Networks*, 13(3), 115–127.  
<https://files.eric.ed.gov/fulltext/EJ862360.pdf>
- Wladis, C., Hachey, A., & Conway, K. (2018). No time for college? An investigation of time poverty and parenthood. *Journal of Higher Education*, 89(6), 807-831.  
<https://doi.org/10.1080/00221546.2018.1442983>



- Wladis, C., Hachey, A., & Conway, K. (2020). External stressors and time poverty among online students: An exploratory study. In S. Softic, D. Andone, & A. Szucs (Eds.), *EDEN Proceedings, 2020 Annual Conference* (pp. 172-183). European Distance and E-Learning Network. <https://doi.org/10.38069/edenconf-2020-ac0015>
- Woodley, A. (2004). Conceptualizing student dropout in part-time distance education: Pathologizing the normal? *Open Learning: The Journal of Open, Distance and e-Learning*, 19(1), 47–63. <https://doi.org/10.1080/0268051042000177845>
- Woodley, A., de Lange, P., & Tanewski, G. (2001). Student progress in distance education: Kember's model re-visited. *Open Learning: The Journal of Open, Distance and e-Learning*, 16(2), 113-131. <http://doi.org/10.1080/02680510123105>
- Woodley, A., & Simpson, O. (2014). Student dropout: The elephant in the room. In O. Zawacki-Richter & T. Anderson (Eds.), *Online distance education: Towards a research agenda* (pp. 459–483). Athabasca University Press.
- Xavier, M., & Meneses, J. (2018). The time factor in studies on dropout in online higher education: Initial review of the literature and future approaches. In J. M. Duart & A. Szucs (Eds.), *Proceedings of the 10th EDEN Research Workshop: Towards Personalized Guidance and Support for Learning* (pp. 357-363). European Distance and E-Learning Network. [https://proceedings.eden-online.org/wp-content/uploads/2018/11/RW10\\_2018\\_Barcelona\\_Proceedings\\_ISSN.pdf](https://proceedings.eden-online.org/wp-content/uploads/2018/11/RW10_2018_Barcelona_Proceedings_ISSN.pdf)
- Xavier, M., & Meneses, J. (2020a). A literature review on the definitions of dropout in online higher education. In S. Softic, D. Andone, & A. Szucs (Eds.), *European Distance and E-Learning Network (EDEN) Proceedings: Human and Artificial Intelligence for the Society of the Future* (pp. 73-80). <http://doi.org/10.38069/edenconf-2020-ac0004>
- Xavier, M., & Meneses, J. (2020b). *Dropout in Online Higher Education: A scoping review from 2014 to 2018*. eLearning Innovation Center, Universitat Oberta de Catalunya. <https://doi.org/10.7238/uoc.dropout.factors.2020>
- Xavier, M., & Meneses, J. (2020c). Fostering retention in online higher education: Students' perceptions of an intervention addressing their first-year experience. In S. Softic, D. Andone, & A. Szucs (Eds.), *European Distance and E-Learning Network (EDEN) Proceedings: Human and Artificial Intelligence for the Society of the Future* (pp. 389-397). <http://doi.org/10.38069/edenconf-2020-ac0037>
- Xavier, M., & Meneses, J. (2021). The tensions between student dropout and flexibility in learning design: The voices of professors in open online higher education. *International Review of Research in Open and Distributed Learning*, 22(4), 72-88. <https://doi.org/10.19173/irrodl.v23i1.5652>
- Xavier, M., & Meneses, J. (2022). Persistence and time challenges in an open online university: A case study of the experiences of first-year learners. *International Journal of Educational Technology in Higher Education*, 19, Article no. 31. <https://doi.org/10.1186/s41239-022-00338-6>
- Xavier, M., Meneses, J., & Fiuza, P. (2022). Dropout, stopout, and time challenges in open online higher education: A qualitative study of the first-year student experience. *Open Learning: The Journal of Open, Distance and e-Learning*. <https://doi.org/10.1080/02680513.2022.2160236>

- Xu, D., & Jaggars, S. (2013). The impact of online learning on students' course outcomes: Evidence from a large community and technical college system. *Economics of Education Review*, 37, 46-57. <https://doi.org/10.1016/j.econedurev.2013.08.001>
- Yılmaz, A. B., & Karataş, S. (2022). Why do open and distance education students drop out? Views from various stakeholders. *International Journal of Educational Technology in Higher Education*, 19. <https://doi.org/10.1186/s41239-022-00333-x>

## CHAPTER 2

# METHOD, COHERENCE, AND RELEVANCE OF CONTRIBUTIONS

### 2.1. Introduction

This chapter is composed of two main parts. First, it discusses and justifies the research design and general methodological approach that guided the construction and production of the empirical articles that constitute this dissertation. It must be noted that in-depth explanations of the methods and procedures employed in each article - including the theoretical papers – are available within the articles themselves. The second part emphasizes the aims and relevance of the contributions offered to discuss the coherence between them and the general object of inquiry of this doctoral dissertation.

In the previous chapter, the import of dropout, persistence, and retention for OHE was ascertained, alongside a discussion of their main reasons. The gaps in dropout and retention literature and arguments for performing qualitative research focusing on certain key factors were also presented. These discussions ground and justify the election of eminently qualitative inquiry into our different research subjects. As mentioned, the main justifications for such election have been voiced by the so-called Online Student Experience (OSE) research trend in retention studies. This trend affirms the need for holistic, qualitative research that captures, expresses, and listens to the students' voices, aiming to gain a deeper, finer understanding of their needs, barriers, and personal experiences. Such understanding is paramount to improve educational and support practices, enable student-informed interventions, and enhance as much as possible the OHE learner journey (Butcher & Rose-Adams, 2015; Greenland & Moore, 2022; Manca et al., 2017; O'Shea et al., 2015).

In addition, most research (~80%) in the field have relied on predominantly quantitative methods (Henry, 2018; Xavier & Meneses, 2020b), an approach which arguably often falls short of providing in-depth comprehension of the complexity and multidimensionality of dropout, persistence, and retention phenomena. Moreover, our proposed specific foci of inquiry – particularly time-related issues – and their nexuses with dropout and persistence are indeed complex and multidetermined; they ultimately depend on the student's life context and experience.

The previous chapter foregrounded the significance of dropout and persistence phenomena for the UOC and the need to engage with the student experience in its specific context. Hence, our empirical investigations were designed to explore and understand the experiences of two of the main UOC actors – students and professors – in relation to such phenomena.

Coherently with such needs and justifications, a qualitative, exploratory-descriptive single case study design was adopted in this dissertation. In what follows this research design is explained

in a general fashion, in order to render transparent the more specific methodological elections and procedures that appear in the compendium of publications.

## 2.2. Method

### 2.2.1. Research Design

The case study method is defined as the intensive and detailed empirical investigation of a contemporary phenomenon within its real-life context (Yin, 2003). It is considered useful to study problems in depth (Gilgun, 1994) as its aim is to build a *comprehensive understanding* of a case, the focus of the study (Fetters et al., 2013; Stake, 1995; Yin, 2003). Case studies “provide evidence that more effectively depicts complex, multiple-factor events/situations and processes” (Neuman, 2014, p. 42) – which is precisely the case of our research objects, dropout and persistence processes in OHE. Compared with other research methods, the case study is more apposite when the investigation addresses (a) contemporary events in which the relevant behaviors cannot be manipulated, and (b) descriptive questions (*what* happened?) or explanatory questions (*how* or *why* did something happen?) (Yin, 2003, 2005, 2012). Accordingly, Yin (2003) classified case studies as exploratory, descriptive, and explanatory. Whereas in descriptive case studies the data are usually presented paying attention to cause-effect relationships, when the case study also has an explanatory purpose the researcher has to propose concurrent explanations for the same set of events and point how such explanations can be applied to other situations and events (Yin, 2003).

Case study research may consist of a single unit or bounded entity (Putney, 2010) – a single-case study – or multiple units of analysis – a multiple-case study (Yin, 2003). However, a single case study may also investigate several cases, or subcases, embedded within a larger system or entity – which is called *embedded case design* (Putney, 2010). When that is the research strategy chosen, “care must be taken to limit the number of cases in order to allow for in-depth analysis and description of each case” (Putney, 2010, p. 115). Moreover, investigating “subunits [subcases] can often add significant opportunities for extensive analysis, enhancing the insights into the single case” (Yin, 2003, p. 46); inquiring into multiple embedded cases “can represent a form of generalizability, in that researchers may be able to show similarities of issues across the cases” (Putney, 2010, p. 118), and offer “an even deeper understanding of the processes and outcomes of cases” (Miles et al., 2014, p. 45).

Another important requisite for the development of a case study is the establishment of theoretical propositions to guide data collection and analysis. In the case of this dissertation, theoretical propositions and specific foci of inquiry were derived from two literature reviews (see Chapters 3 and 4). Furthermore, the theoretical propositions at the outset of the inquiry lead to the possibility of generalizing the results – for, rather than being statistical, generalization from case study analysis is limited to the theoretical level (i.e., to expanding and generalizing theories). Such approach, called “analytical generalization” as opposed to “statistical generalization” (Yin, 2003, p. 37), implies that the case study has to be considered as an *experiment*, rather than as a (representative) sample; therefore multiple case studies correspond to multiple experiments, following a *replication logic*. Broadly speaking, the

generalizability of the case study findings is demonstrated through showing the connections between the findings and prior knowledge; i.e., the findings from a single case are tested in their congruence (pattern-matching) with other cases – in a *comparison of cases* – and with patterns predicted by theory, or with previous research and theory (Gilgun, 1994).

In light of these arguments, this dissertation employed an *embedded single-case study* design of an *exploratory-descriptive* nature, and an interpretive approach. Its bounded entity or main unit of analysis is the UOC. Within the bounded entity are the embedded units of analysis: the actual lived experiences of students and professors (regarding multiple themes linked to their OHE experience in general that are connected to the main research themes of this dissertation: dropout, persistence, and retention). In this sense, each article that follows presents a different (sub)case study, which, taken as a whole, constitute the single case study of the UOC.

### **2.2.2. Sampling Strategy**

UOC participants were selected according to a purposive, criterion-based sampling, using a maximum variation sampling approach: a “deliberate strategy to include cases which vary widely from each other. The aim is to identify central themes which cut across the variety of cases or people” (Ritchie et al., 2014, p. 114). Sampling criteria varied depending on each study. However, sampling procedures had one common denominator: to capture a rich variety of experiences as comprehensively as possible from a diversity of subjects. According to Neuman (2014), purposive sampling is appropriate when the researcher “wants to identify particular types of cases for in-depth investigation to gain a deeper understanding of types” (p. 274). Hence, the samples selected in our empirical papers are *not* representative of the overall (student or professorial) population. Purposive sampling does not offer population validity (Stake, 1995).

On the one hand, such methodological choice presents the inconvenience of providing less data on the type that may represent the vast majority of the population (in the case of undergraduate OHE learners, non-traditional part-time students). On the other hand, purposive sampling holds the potential for yielding insights and in-depth understanding of the studied population as a whole, including minorities, rather than empirical generalizations (Patton, 2002). In this sense, it is adequate for studies that attempt to capture data in a holistic fashion – thus satisfying the requisite that data on the case(s) must be detailed, varied, and extensive (Neuman, 2014). Accordingly, purposive sampling suits the exploratory and holistic aims of this thesis and highlights one of the strengths of case study research, *holistic elaboration*: “Case studies can elaborate on an entire situation or process holistically and permit the incorporation of multiple perspectives or viewpoints” (Neuman, 2014, p. 42).

### **2.2.3. Participants**

The empirical data analyzed in our published contributions came from two main cohorts of participants: UOC undergraduate students (for Contributions 3, 4, and 6) and coordinating professors (for Contribution 5).

*Undergraduate students*: participants included 36 first-year undergraduate students who started their studies at UOC in September 2017.1. Participants were selected according to the following criteria:

- age: traditional students (<25 years of age), and non-traditional students ( $\geq 25$  y-o);
- gender: female or male;
- enrollment status: persisters (2 consecutive reenrollments); stopouts (did not enroll in 2017.2, but did so in 2018.1); dropouts (did not enroll in 2017.2 and 2018.2);
- enrolment type (dedication): part-time (enrolled in  $\leq 18$  ECTS credits per semester), or full-time ( $> 18$  ECTS credits per semester).

Thus four main profiles were created: traditional part-timers, traditional full-timers, non-traditional part-timers, and non-traditional full-timers. Regarding the persisters cohort, five participants were selected per profile, balancing gender. Regarding stopout and dropout participants, we aimed at selecting two participants (one male and one female) per profile. However, that proved impossible, for we did not find available candidates that fitted certain full-time profiles; they were replaced by part-time participants with similar profiles, also balancing gender (see Table 1).

Table 1. Student participants

Profile	Dedication	Gender	PERSISTERS	STOPOUTS	DROPOUTS
Traditional ( $< 25$ y-o)	Part-time	M	2	1	1
		F	3	2	1
	Full-time	M	3	-	-
		F	2	1	-
Non-traditional ( $\geq 25$ y-o)	Part-time	M	3	1	3
		F	2	2	2
	Full-time	M	2	1	1
		F	3	-	-
TOTAL			20	8	8

*Coordinating professors*: participants included 18 coordinating professors (50% females) from UOC undergraduate programs, with varying ages ( $M = 46.22$ ;  $SD = 6.59$ ) and years of experience as coordinating professors ( $M = 9.08$ ;  $SD = 4.58$ ). Professors were randomly selected according to the characteristics of the *courses* they coordinated. Three different courses per program were selected using a stratified random sampling approach, according to the rates (lower, average, and higher) of student persistence (i.e., number of students who complete the continuous assessment process) in their courses in relation to the rates in their respective programs. Then the professors who coordinated these selected courses were contacted via UOC and included as participants according to their availability (see Table 2). Half of the courses were introductory, first-semester courses; only one course was optional (as opposed to mandatory in the program).

Table 2. Professor participants, gender, type of course, and persistence rate in CA process

Program	Lower persistence	Average persistence	Higher persistence
Arts and Humanities	Male prof.; FS	Male	Female; FS
Business and Economics	Female prof.	Male; FS	Female; FS
Computer Science, Multimedia and Telecommunication	Male prof.; FS	Male	Male
Information & Communication Sciences	Male prof.; FS	Female; FS	Male
Law and Political Science	Female prof.	Female; FS	Male
Psychology and Education	Female prof.; FS	Male	Female; optional

Legend: FS = first-semester, introductory course

*Academic advisors:* It must be mentioned that we also selected and interviewed academic advisors, as our initial and ambitious aim was to research *all* the main UOC actors that were important for dropout and persistence phenomena (students, professors, academic advisors, and instructors). Unfortunately, I did not have sufficient time to produce another publishable article based on their data. Participants included 12 UOC academic advisors from 6 undergraduate programs that participated in the ESPRIA intervention process (see 1.3. above and Chapter 8). Each of these programs was represented by two types of participants: one with long experience (> 3 years) working in the program, and one with less experience (< 2 years). The data collected shall be used in a future article, complementing the contributions presented here.

#### 2.2.4. Instruments and Data Collection

Our empirical studies employed one main instrument: in-depth semi-structured interviews. Open-ended questions were utilized, as they are typically exploratory in nature, to match our exploratory research questions and case study design. Interview protocols sketching the structure of themes and sequence of questions were developed for each study and population according to previous theoretical propositions derived from the literature, the factors that constitute our specific foci of inquiry, the specificities of the actors studied, and UOC's specific context and learning model. Seeking an in-depth, comprehensive range of inquiry, broad open-ended questions also addressed themes that might be peripheral yet important for the main research theme of each study (see Appendix 4 for the interview protocols employed). Interviews were mostly face-to-face, informal, digitally recorded, and lasted around one hour.

#### 2.2.5. Data Analysis

The recorded interviews in Catalan or Spanish were transcribed verbatim. Although the process of data analysis varied slightly for each article, it was essentially based on the content analysis strategy proposed by Schreier (2012). Searching for the most important aspects of meaning in each interview produced coding schemes with codes and themes that were eventually agreed upon by my supervisor and myself. This process is detailed in each scientific contribution that follows.

A second process of data analysis, triangulating and integrating the findings from all our empirical contributions, is presented in Chapter 9, Section 9.2., *Integrated Findings and Discussion*. This process is based on a comparison of the subcases under study in each paper, synthesizing all the results while seeking pattern-matching among the different cases, in order to reach a final, global analysis of the case.

### **2.2.6. Ethical Considerations**

UOC's Human Ethics Committee gave approval for all our empirical investigations. Prior to taking part in the interviews, participants were explained their rights in relation to their personal data and the data resulting from interviews; and that all interview and personal data would be anonymized and they could have access to interview transcripts and published results. Informed Consent and Cession of image and videos rights forms were explained and read to each participant, who then signed them. Treatment and use of data followed Spanish law RGPD (2018). Personal data was only used for the selection of participants according to their different profiles and was deleted after the interview process. In the concrete results derived from the research (communications and publications), interview data and participant personal data were only used in aggregate form and later anonymized in published articles. Audio and video files from interviews were deposited in UOC servers for two years.

## **2.3. Coherence and Relevance of Contributions**

In this section, each contribution that compose this compendium of publications is situated in the context of the dissertation structure, presenting the rationale for its ordering, and of its coherence with the research questions and the literature gap(s) it addresses, in order to argue for its relevance.

First, let us recall the research questions that guided our empirical endeavors:

- Main research question (RQ): What is the nature of the students' experiences that are connected to dropout and persistence in open OHE?

The main research question was subdivided into the following questions:

- Q1 What factors or reasons are perceived to be more important for dropout and persistence in open OHE?
- Q2 How does the time-factor impact upon student dropout and persistence in OHE, particularly in the first year of studies?
- Q3 What is the impact of flexibility, particularly in learning design and assessment, upon student persistence, attrition, and engagement in OHE?
- Q4 What possible recommendations can be proposed to improve persistence and retention in OHE?

### **2.3.1. Contribution 1**

Our Contribution 1 (Chapter 3) is titled *Dropout in Online Higher Education: A scoping review from 2014 to 2018*. It presents a scoping literature review that offers a very broad portrayal of the then-recent research on online dropout and related concepts (retention, persistence,



attrition, and so on) in OHE, mapping the field in a critical manner. To our knowledge, it was the first all-encompassing review of the online dropout body of literature, including grey literature. It puts forward a broad overview and analysis of the academic output on the theme, and its research gaps, in order to provide a general theoretical background for the other investigations. In this sense, it answers *theoretically* the main research question (RQ) and questions Q1, Q2, and Q4. Although we did not manage to publish it as a scientific article in a relevant journal (mainly because of its length), its relevance is also attested by the fact that it has already been cited in more than 47 scientific articles (as per Google Scholar).

### **2.3.2. Contribution 2**

Contribution 2 (Chapter 4) is titled *The time factor in studies on dropout in online higher education: Initial review of the literature and future approaches*. It presents an initial review of the literature on a more specific theme that is central to this dissertation: the significance of time-related factors and their relationships with student dropout in OHE. When it was published (2018), there was a conspicuous paucity of research focusing specifically on the importance of time-related factors for dropout and persistence in OHE, which adds to its relevance and novelty. It presents key concepts and two main theoretical approaches: academic time management and procrastination, and work-family-studies balance. In this sense, it provides *theoretical* answers and background to RQ, Q1, and Q2 - particularly to the latter, which constitutes its focus. Such theoretical background is relevant in that it grounds the subsequent empirical inquiries into the perception and experiences of time-challenges among students, which are the specific focus of research in Contributions 3 and 4.

### **2.3.3. Contribution 3**

Contribution 3 (Chapter 5) is the first empirical investigation, titled *Persistence and time challenges in an open online university: A case study of the experiences of first-year learners*. It explores how UOC undergraduate persistent students experienced and managed their time challenges and how they impacted their persistence in their first year of studies. With this aim, it provides empirical answers to RQ and all the subquestions – but particularly to Q2, which is its focus. This article is relevant for several reasons, in that it addresses a number of key literature gaps discussed above: a) it gives voice to the students' lived experiences and perceptions within their life context in a holistic, comprehensive fashion; b) it focuses on their first-year experience; c) it addresses persistence, instead of retention; d) it investigates a key factor – time challenges – that is very seldom studied in the field; e) it compares the experiences of students with different profiles, including minorities (traditional and full-time learners) who are seldom studied in open OHE. Inquiring into persisters' experiences is also relevant because it allows for comparisons between their perceptions and challenges and the experiences of students who end up withdrawing from studies – which is the subject of the next contribution.

### **2.3.4. Contribution 4**

Contribution 4 (Chapter 6) is titled *Dropout, stopout, and time challenges in open online higher education: A qualitative study of the first-year student experience*. This subcase study is analogous and complementary to Contribution 3, for, instead of inquiring persisters, it explored how first-year undergraduate students who *withdrew* from an open university (UOC)

experienced and managed their time, how they perceived and coped with time challenges, and how the latter impacted their decision to stop out or drop out. Similarly, it thus answers the RQ and all the other subquestions – but particularly Q2, which is its focus. The reasons for its relevance are analogous to the ones pointed above regarding Contribution 3, with one major difference: it compares the lived experiences of students who dropped out with those who withdrew but returned to their studies. As far as I know, this is the first study to do so in the OHE literature, which enhances its relevance. Furthermore, it involved a difficult, long, and time-consuming effort to find, recruit, and interview student dropouts – as they are notoriously difficult to track and recruit for research once they abandon the university, which makes qualitative research with them rather rare (Porter, 2003). Moreover, together with Contribution 3, it completes the picture of dropout, stopout, and persistence in the first year of studies, and the roles that time and several other factors play in that picture.

### **2.3.5. Contribution 5**

Contribution 5 (Chapter 7) is titled *The tensions between student dropout and flexibility in learning design: The voices of professors in open online higher education*. This subcase study complements the focus on the student experience, seen in Contributions 3, 4, and 6, by analyzing the lived experiences of *faculty* - professors who are learning designers at UOC. First, it addresses their perception of student dropout, its temporality and key reasons and drivers. Then, it addresses their experiences regarding flexibility in open OHE, but more specifically in e-learning design and continuous assessment, and their perception of the risks and opportunities that more flexibility would imply for student persistence, engagement, and dropout – particularly in their first year. Finally, it discusses the feasibility and adequacy of intervention measures intended to provide students with more flexibility. In this sense, it approximates the inquiry of lived experiences regarding dropout and persistence to the study of possible recommendations and interventions to ameliorate dropout rates and enhance student persistence in the first year, which is the focus of the next contribution. In this way, it provides empirical answers especially to Q3, but also to Q4; and, peripherally or secondarily, to RQ and Q1 – but from the perspective of the professors' viewpoints and experiences. Its relevance is manifold, addressing several research gaps: a) to focus on the lived experience of faculty (and learning designers); b) to address the experiences of faculty regarding dropout and its causes and temporality; c) to focus on the roles of flexibility and learning design for dropout and persistence; d) to provide faculty-informed recommendations for interventions; e) to investigate all of the above within the context of the UOC and its specificities (particularly, its unique continuous assessment process, the role that professors play in curriculum and learning design, and so on).

### **2.3.6. Contribution 6**

Contribution 6 (Chapter 8) is titled *Fostering retention in online higher education: Students' perceptions of an intervention addressing their first-year experience*. This subcase study returns to the student experience, but, complementing Contribution 5, it focuses more on providing answers to Q4 (recommendations and interventions) connected to Q3 (perception of flexibility and flexible measures in relation to dropout and persistence). First, it presents a UOC intervention (ESPRIA) that adopted flexibility measures in learning design and academic

support, aiming at improving student engagement and persistence. Following the same strategy that characterized other contributions, this paper gives voice to UOC undergraduate first-year students with varied profiles, which are characterized in a general way. Its relevance is connected to the same aforementioned literature gaps: a focus on the student experience, the first year of studies, different student profiles that include minorities, the positive or negative roles of flexibility, and so on. However, it is especially relevant because it inquires the students themselves about which measures they liked or would like to see implemented within the specific context of the UOC, thus strengthening empirically student-based interventions.

### 2.3.7. Supplementary Contribution

This supplementary contribution (Appendix 1) is titled *A literature review on the definitions of dropout in online higher education* and was largely derived from Contribution 1. It focuses specifically on definitions of dropout, persistence, and related constructs in the online dropout literature, identifying and clarifying its key concepts. Its relevance stems from addressing a major problem in the field - the lack of standardized definitions and constructs – and proposing recommendations to tackle it. However, as it does not answer our research questions directly, and repeats many points already made in Contribution 1, it is offered as a supplementary contribution because of its theoretical relevance.

## 2.4. References

- Butcher, J., & Rose-Adams, J. (2015). Part-time learners in open and distance learning: Revisiting the critical importance of choice, flexibility and employability. *Open Learning: The Journal of Open, Distance and e-Learning*, 30(2), 127–137. <https://doi.org/10.1080/02680513.2015.1055719>
- Fetters, M. D., Curry, L. A., & Creswell, J. W. (2013). Achieving integration in mixed methods designs - Principles and practices. *Health services research*, 48(6), 2134-2156. <https://doi.org/10.1111/1475-6773.12117>
- Gilgun, J. F. (1994). A case for case studies in social work research. *Social Work*, 39(4), 371-380. <https://doi.org/10.1093/sw/39.4.371>
- Greenland, S. J., & Moore, C. (2022). Large qualitative sample and thematic analysis to redefine student dropout and retention strategy in open online education. *British Journal of Educational Technology*, 53(3), 647-667. <https://doi.org/10.1111/bjet.13173>
- Henry, M. (2018). *The online student experience: An exploration of first-year university students' expectations, experiences and outcomes of online education*. [Doctoral dissertation, Edith Cowan University]. ECU Repository. <https://ro.ecu.edu.au/theses/2059>
- Manca, S., Grion, V., Armellini, A., & Devecchi, C. (2017). Editorial: Student voice. Listening to students to improve education through digital technologies. *British Journal of Educational Technology*, 48(5), 1075–1080. <https://doi.org/10.1111/bjet.12568>
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). Sage Publications.

- Neuman, W. L. (2014). *Social research methods: Qualitative and quantitative approaches* (7th ed.). Pearson Education Limited.
- O'Shea, S., Stone, C., & Delahunty, J. (2015). "I 'feel' like I am at university even though I am online": Exploring how students narrate their engagement with higher education institutions in an online learning environment. *Distance Education*, 36(1), 41–58. <https://doi.org/10.1080/01587919.2015.1019970>
- Patton, M. Q. (2002). *Qualitative research & evaluation methods* (3rd ed.). Sage Publications.
- Porter, S. (2003). Understanding retention outcomes: Using multiple data sources to distinguish between dropouts, stopouts, and transfer-outs. *Journal of College Student Retention*, 5(1), 53-70. <https://doi.org/10.2190/NV6H-55NG-8EYW-EKGP>
- Putney, L. G. (2010). Case study. In N. J. Salkind (Ed.), *Encyclopedia of research design* (Vol. 1, pp. 115-119). Sage Publications. <https://doi.org/10.4135/9781412961288.n39>
- Ritchie, J., Lewis, J., Elam, G., Tennant, R., & Rahim, N. (2014). Designing and selecting samples. In J. Ritchie, J. Lewis, C. M. Nicholls, & R. Ormston (Eds.), *Qualitative research practice: A guide for social science students and researchers* (pp. 111-146). Sage Publications.
- Schreier, M. (2012). *Qualitative content analysis in practice*. Sage Publications.
- Stake, R. E. (1995). *The art of case study research*. Sage Publications.
- Xavier, M., & Meneses, J. (2020b). *Dropout in Online Higher Education: A scoping review from 2014 to 2018*. eLearning Innovation Center, Universitat Oberta de Catalunya. <https://doi.org/10.7238/uoc.dropout.factors.2020>
- Yin, R. K. (2003). *Case study research: Design and methods* (3rd. ed.). Sage Publications.
- Yin, R. K. (2005). Case study methods. In J. Green, G. Camilli, & P. Elmore (Eds.), *Complementary methods for research in education* (3rd ed.) (pp. 111-122). American Educational Research Association.
- Yin, R. K. (2012). *Applications of case study research* (3rd ed.). Sage Publications.

## CHAPTER 3

# DROPOUT IN ONLINE HIGHER EDUCATION: A SCOPING REVIEW OF THE LITERATURE\*

### Abstract

Online higher education continues to grow, yet its high dropout rates remain a pressing and complex problem. This article presents a scoping review of the recent literature on the theme, focusing on dropout definitions, concepts, and models, study domains and themes, methodological approaches, and findings. A search of relevant databases yielded 138 articles and dissertations. Findings reveal a complex yet disorganized field, lacking standard definitions and models. The bulk of current research is focused on risk factors; the most important ones were course and program factors (student support), student factors (motivation, time management skills, and satisfaction), and environmental factors (time- and financial-related issues). Future research should strive to achieve greater consistency in terminology, methods, and measurement, develop new intervention strategies and produce reliable effectiveness information. Further implications of these findings for future dropout research and the limitations of the study are discussed.

**Keywords:** Dropout; dropout factors; retention; literature review; scoping review; online; distance education; higher education

### 1.1. Background: Conceptualizing Dropout Research in Online Higher Education

#### 1.1.1. Definition

Dropout can be broadly defined as the student's failure to enroll for a definite number of successive semesters. However, there are many different definitions of dropout in the literature, usually related to a temporal conception, and the issue is controversial (Grau-Valldosera & Minguillón, 2014). A number of related concepts are often employed, some as synonymous – attrition, withdrawal, non-completion – and others as antonymous - retention, persistence, continuance, completion, and success; however, they largely suffer from the same imprecision. Inconsistent terminology is problematic because the ways dropout is defined determine how it is measured, tackled, and researched (Ashby, 2004). The main issue regards who to count as having dropped out (Nichols, 2010); a single course definition is prevalent, i.e., dropping out of a specific course, yet other authors have proposed a program perspective (Lehan, Hussey, & Shriner, 2018), i.e., not graduating in a program. However, the time frame is also problematic, as students may take a break (of several semesters) but eventually return and re-enroll.

---

\* Xavier, M., & Meneses, J. (2020). *Dropout in Online Higher Education: A scoping review from 2014 to 2018*. eLearning Innovation Center, Universitat Oberta de Catalunya. <https://doi.org/10.7238/uoc.dropout.factors.2020>

### **1.1.2. Prevalence and Importance of Dropout**

In higher education (HE), dropout rates have become a matter of utmost concern, as education authorities utilize them as a key parameter for evaluating HE quality and allocating resources. Dropout costs are considerable: it impacts the student's self-esteem, well-being, employability, and probability of earning a degree. For institutions, it may lead to loss of reputation, profit, and funding (Arce, Crespo, & Míguez-Álvarez, 2015).

Over the last 20 years, research on dropout in online higher education (OHE) has gained importance, as official online programs showed significantly higher student dropout rates than face-to-face (f2f) programs (Grau-Valldosera, Minguillón, & Blasco-Moreno, 2018). Early dropout is typical of OHE programs, sometimes reaching 50% of first-year students (Simpson, 2010). In open universities, dropping out is the norm and graduating is deviant (Woodley & Simpson, 2014), which makes dropout rates one of the greatest challenges faced by OHE educators and administrators (Lee & Choi, 2011). Hence, in-depth understanding of the phenomenon, early identification of at-risk students, and efficient prevention measures have become crucial. Nonetheless, there appears to be a tension between conceptions and studies of dropout in traditional, f2f settings (the origin of dropout models), and in online settings, as the latter present very different contexts, rates, stakeholders, and influencing factors. Hence, it is important to review models and definitions employed in recent years for OHE, and their friction with older f2f models. It is about ordering a field that is clearly ample and somewhat disorganized, in order to better understand it and the phenomena it studies.

### **1.1.3. Dropout Risk Factors**

Many studies (see reviews in Hart, 2012, and Tyler-Smith, 2006) have investigated the *factors* that influence dropout, retention, persistence, and success, and attempted to derive profiles of students most likely to dropout or persist in OHE. However, the literature presents an enormous multiplicity of predictive variables.

Reviewing the empirical literature, Lee and Choi (2011) identified 44 unique dropout factors. Among the most cited factors were student entry characteristics (e.g., skills), psychological attributes (e.g., satisfaction and motivation), and course design. A review (Holder, 2007) on persisters' profiles indicated that they are academically prepared and possess good time management skills and high levels of self-discipline and motivation. Time-related issues such as lack of time or time management difficulties (Ashby, 2004) are key factors for persistence and attrition, especially for the most typical students in OHE, *non-traditional learners*: mature-aged or adults with job and/or family responsibilities (Huggins, 2016). The large number of predictive factors point to the complexity of dropout phenomena (Kember, 1989).

### **1.1.4. Dropout Models for Distance Education**

Despite the complexity of dropout, many authors have tried to construct theoretical models of attrition in distance education (Aljohani, 2016; Tyler-Smith, 2006), progressively moving towards the specificities of *online* education. The first ones were typically influenced by models for traditional, f2f settings: the work of Tinto (1975, 1993), which focused on student social and academic integration with peers and institution, and the Non-traditional Student

Attrition Model (Bean & Metzner, 1985), which gives more importance to environmental factors such as family commitments and working hours.

Kember (1989) proposed a complex, longitudinal-process dropout model, focusing on the specificities of distance education and mature learners. Integrating the models of Tinto (1993) and Bean and Metzner (1985), Rovai (2003) created a Composite Persistence Model with four categorical factors: student characteristics and skills prior to admission, and external and internal factors after admission. Berge and Huang (2004) advanced a holistic model for e-Learning retention, taking into account personal, institutional and circumstantial variables, and their interconnectedness. Park and Choi (2009) criticized the lack of attention given to external factors (e.g., family and organizational supports) in Berge and Huang's model, and proposed a framework focusing on such factors for adult dropout in online learning.

Lee and Choi (2011) developed a dropout model for online courses with 44 factors fitting three main categories: (a) student factors, (b) course/program factors, and (c) environmental factors. Conceição and Lehman (2012) proposed the Persistence model for online student retention, emphasizing factors such as skills, motivational barriers, and issues of administrative, financial, and technical support. McClelland (2014) advanced a holistic model for OHE withdrawal, encompassing situational, dispositional, institutional, technological, and epistemological factors. Finally, Choi (2016) modified Park's (2009) model and added an outcome factor, creating a multivariate model for adult dropout in OHE including learner, external, internal, and outcome factors.

### **1.1.5. Previous Reviews of Dropout in Online Education**

A few reviews on dropout and retention in online learning have been published in the last decades. Storrings's (2005) meta-analysis of attrition in distance education focused on the empirical literature and the effects of dropout. Park (2007) presented a review and a model on dropout, yet did not focus on OHE, but rather on corporate e-learning and adult learners. Simpson (2010) presented a comprehensive review of retention in OHE, encompassing ten years of publications and giving special attention to evidence-based research. Lee and Choi (2011) published arguably the most complete review to date, also presenting a comprehensive and detailed model. Bawa (2016) advanced a literature synthesis of retention in online courses; however, it is not a methodical review (i.e., it does not discuss how the articles were selected) and does not focus on OHE.

Other reviews focused on different concepts or populations. Tyler-Smith (2006) reviewed the dropout literature focusing on first-time, adult e-Learners, although his is not a methodical review either. Persistence was the focus of the reviews by Castles (2004), which concentrated on adult learners in open university settings but did not employ a systematic method, and by Hart (2012), studying articles on the facilitators and barriers to persistence in OHE. Other authors produced reviews on success and satisfaction in online learning, such as Kauffman (2015), who did not focus on HE and did not mention a review method; and Banks (2018), focusing on perceived barriers to success for adult e-Learners.

### **1.1.6. A Scoping Review of Dropout in Online Higher Education**

Building on the previous reviews mentioned, this article presents a scoping review of dropout in OHE. Scoping reviews can be defined as a method of research synthesis that seeks to map the relevant literature on a specific topic or research area, identifying and clarifying key concepts (Peters et al., 2017), research gaps, and types and sources of evidence to inform policymaking, practice, and research (Daudt, Van Mossel, & Scott, 2013). The scoping method was chosen because it is best designed for cases in which the body of literature exhibits a large, complex, and heterogeneous nature (Khalil et al., 2016), and when its key concepts are less well defined in advance (Gough & Thomas, 2016). While systematic reviews typically answer a focused, narrow research question and assess formally the quality of studies, scoping reviews answer broader questions and do not include a quality assessment of included studies or weight of evidence (Armstrong, Hall, Doyle, & Waters, 2011). Scoping reviews seek to explore and summarize data, rather than analyze and report (Aromataris, 2017). As argued, there are many difficult issues in the field of dropout studies, mainly stemming from the transition from f2f models and research to the peculiarities of OHE. Hence a scoping review is needed so as to map broadly what has been academically produced on the subject recently.

## **1.2. Method**

This scoping review followed the framework proposed by Arksey and O'Malley (2005), consisting of five stages: (1) identifying the research questions; (2) identifying relevant studies; (3) study selection; (4) charting the data; and (5) collating, summarizing, and reporting the results. Our proposal differs from previous reviews in that the timeframe is recent (2014–2018), encompassing empirical, theoretical, and grey literature.

### **1.2.1. Identifying the Research Questions**

Our approach here is concerned with two of the main *purposes* of a scoping review (Arksey & O'Malley, 2005): to map and synthesize a broad research topic (dropout), clarifying key definitions and concepts, and to identify literature gaps in research from an ample range of study methods and designs (Peters et al., 2017). Such purposes are linked to a broad *research question*:

- What are the characteristics of the scientific literature examining dropout in OHE, and what research gaps can be identified in it?

The following generative sub-questions are also advanced:

- What were the most examined domains and themes?
- How was dropout (and related concepts) defined in recent OHE dropout research?
- What factors appeared as influencing student dropout, and what theoretical models were employed or developed?
- What were the main findings?



### 1.2.2. Identifying Relevant Studies

In order to cover literature in a comprehensive way and answer the broad research question, the search strategy should include diverse sources and broadly defined search terms (Arksey & O'Malley, 2005). Studies were searched and selected from four main sources: two databases (Web of Science and Education Database); hand-searching of eight key journals (*British Journal of Educational Technology*; *Computers & Education*; *Distance Education*; *Educational Technology Research and Development*; *European Journal of Open and Distance Learning*; *International Review of Research in Open and Distance Learning*; *Internet and Higher Education*; *Journal of College Student Retention: Research, Theory & Practice*); Google Scholar, for the first 200 results (not including patents; sorted by relevance), aiming to identify grey literature; and key papers reference lists, adopting a snowball technique (reviewing references in the selected key papers for additional studies).

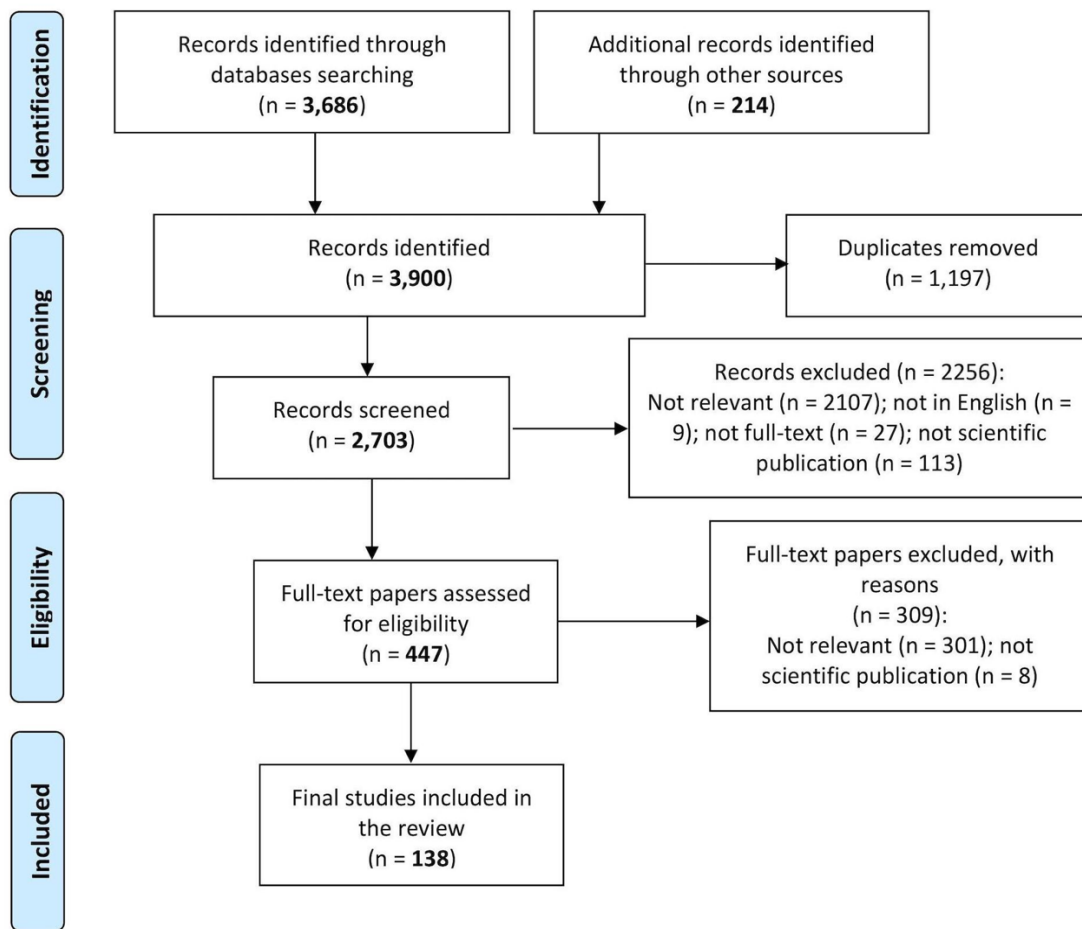
Key search terms (Figure 1) were selected based on key concepts found in dropout studies, and adapted to capture all relevant studies in OHE, regardless of typology (online, blended learning, etc.). The authors chose not to include "success" and "stop-out" as key words due to their imprecision. The search was performed in November 2018.

Studies were eligible for inclusion if they were in English and published after 2013, having academic dropout or related subjects (persistence, completion, etc.) in OHE as main research subject, and if their full text was available. Exclusion criteria included not researching or studying OHE (i.e., either not *online* distance education, or not *higher* education, e.g., MOOCs); and not being a scientific publication (e.g., in a newspaper or magazine).

Figure 1: Search strings

Concept	Search terms
Dropout	(dropout OR drop-out OR drop out OR retention OR persistence OR attrition OR withdrawal OR non-completion OR non-continuation OR non-completer OR non-persister OR retained OR persister OR continuance)
OHE	AND ((online education OR online learning OR e-learning OR eLearning OR open university OR distance education OR distance learning OR eLearner OR web based OR blended learning) NOT "MOOC*")

Figure 2: PRISMA flowchart



### 1.2.3. Study Selection

Employing the search strings, databases search generated 3,686 publications. The other three parallel search strategies yielded 214 additional studies, totaling 3,900 records. From these, 1,197 duplicates were removed, leaving a sample of 2,703 publications for screening by title and abstract relevance. A large number of papers was deemed not relevant or not scientific publications (e.g., opinion or theoretical papers in magazines). Thus 2,256 papers were discarded, reducing the sample to 447 studies, whose eligibility was assessed through reading the full published text. Applying the same inclusion criteria, 309 publications were excluded. A total of 138 publications were thus included in this review. The process of searching and selecting papers followed the PRISMA Statement (Moher, Liberate, Tetzlaff, Altman, & The PRISMA Group, 2009); it was concluded in March 2019. Figure 2 illustrates the search strategies and the selection process with a PRISMA flowchart.

### 1.2.4. Charting the Data

Each paper in the sample was thematically analyzed according to the model advanced by Levac, Colquhoun, and O'Brien (2010) and coded in terms of year of publication; authors; keywords; type of publication; dropout (or related) concepts or definitions employed; dropout factors and models; type of OHE, online course or program structure and subject; unit of

analysis (sample); research purposes; research domains and themes; methodological approach; method; data collection; findings; and strategies proposed to overcome dropout.

The methodological approaches were coded according to the model proposed by Leung and Chen (2018): quantitative methods (e.g., survey, experiment), qualitative methods (e.g., case study, interviews), non-empirical methods (including theoretical and/or literature review papers), and mixed methods. Based on the main concept(s) used, prevailing goal, and research direction of each study, papers were categorized in terms of their domains: attrition, completion, continuance, dropout, persistence, retention, stop-out, success, throughput, and withdrawal. The ten domains were not mutually exclusive and sometimes overlapped. Also based on their research aim and findings, the studies were further classified into eight main themes: factors (predictive of dropout-related phenomena); interventions; theoretical or literature review (for non-empirical papers); measures (mensuration); theoretical models; comparison between modes of delivery; recommendations, strategies, or best practices; and research methods and instruments. Thus, each domain may be represented by different research themes. Dropout factors were classified based on the model by Lee and Choi (2011): student factors, course/program/institution factors, and environmental factors. Their model was chosen because it was the most complete, and to allow for comparison with their findings to observe what has changed in the literature in terms of factors. Finally, the findings were coded following the main theme(s) of each paper.

A trial of the data-charting form was done with the first 20 papers, to check whether the approach to data extraction was consistent with the research questions (Levac et al., 2010). The complete spreadsheet with coded papers is available in the Appendix 3.

### **1.2.5. Summarizing and Reporting Findings**

The final stage of Arksey and O'Malley's (2015) framework consists in summarizing and reporting findings, which is the subject of the next section.

## **1.3. Results**

In this section we summarize our findings so as to provide a general overview of what has been produced in the dropout literature in OHE since 2014, situated in the context of current research and practice.

### **1.3.1. Study Characteristics**

Table 1 presents the general characteristics of the studies selected. Over the review period there were between 20 and 30 papers published per year, with a surprising decline in the number of publications from 2017 onwards. Most papers were peer-reviewed articles; however, one third of our sample was constituted by doctoral dissertations (grey literature). The majority of papers (in particular doctoral dissertations) were produced in the United States, followed by continental Europe (especially in Spain, Greece, and Germany). Many papers also came from Australia, New Zealand, and Asian countries such as Bangladesh, China, and Korea. Some papers (10%) did not provide information on their provenance, and few (3%) investigated

multiple countries. Provenance alludes to the authors' place of work or where the empirical study was conducted.

Table 1: Study general characteristics

<b>Characteristic</b>	<b><i>n</i></b>	<b>%</b>
<i>Year of publication</i>		
2014	33	23.91
2015	32	23.19
2016	30	21.74
2017	22	15.94
2018	21	15.22
<i>Type of publication</i>		
Book chapter	2	1.45
Conference presentation	7	5.07
Doctoral dissertation	46	33.33
Governmental project report	1	0.72
Master's thesis	1	0.72
Peer-reviewed article	81	58.7
<i>Geographical location</i>		
Asia (Bangladesh, China, Indonesia, Iran, Korea, Turkey)	9	6.52
Australia and New Zealand	9	6.52
Brazil	2	1.45
Canada	2	1.45
Europe (continental)	12	8.7
United Kingdom and Ireland	5	3.62
United States	82	59.42
Multiple countries	4	2.9
Not Applicable (N/AP)	13	9.42
<i>Type of higher education investigated</i>		
Online	88	63.77
Blended/hybrid	17	12.32
Distance education in general	1	0.72
(Comparison) Online and f2f	18	13.04
(Comparison) Online and blended	9	6.52
(Comparison) Online and blended and f2f	3	2.17
(Comparison) Hybrid and f2f	1	0.72
Not Provided (N/P)	1	0.72
<i>Methodological approach</i>		
Qualitative	29	21.01
Quantitative	79	57.25
Mixed	16	11.59
Theoretical (non-empirical)	13	9.42
<i>Method</i>		
Case study	13	9.42
Correlational	7	5.07
Delphi study	1	0.72
Experimental or quasi-experimental	12	8.7
Literature review	6	4.35

Others	25	18.12
Phenomenological	9	6.52
Statistical analyses	32	23.19
Survey	27	19.57
N/AP	10	7.25
N/P	3	2.17
<i>Data collection</i>		
Academic/institutional databases	66	47.83
Focus groups	4	2.9
Interviews	33	23.91
Publications (literature)	7	5.07
Scales	5	3.62
Survey/questionnaire	49	35.51
Others	8	5.8
N/AP	6	4.35
N/P	4	2.9
<i>Focus of empirical research</i>		
Undergraduate course(s)	66	47.83
Undergraduate program(s)	28	20.29
Master's program(s)	10	7.25
Doctoral program(s)	7	5.07
University(ies)	19	13.77
<i>Unit of analysis (sample)</i>		
Undergraduate students	73	52.9
Graduate students	15	10.87
Non-traditional or adult students	22	15.94
First-semester or first-year students	8	5.8
Faculty	17	12.32
Literature	4	2.9
N/AP	10	7.25
N/P	7	5.07

Regarding the type of HE investigated, most papers (65%) researched online settings, followed by studies on blended or hybrid HE, and studies comparing different modes of delivery (especially between online and f2f modes). Most of our sample (57%) employed quantitative methodological approaches; one fifth used qualitative ones, 12% mixed-method approaches, and 10% were purely theoretical. That is reflected in the methods chosen: almost half of the sample employed quantitative methods such as statistical analyses and surveys, while 16% utilized eminently qualitative methods, such as the phenomenological method and case studies. Only 9% used experimental or quasi-experimental methods. There is great variety in the field in this regard, which can also be seen in the use of other miscellaneous methods by 16% of our papers. Theoretical studies that were not literature reviews – e.g., discussing best practices – were counted as “not applicable” (9%). Almost half of the studies relied on academic or institutional databases for data collection; the other half employed surveys and/or questionnaires or interviews (usually semi-structured). Some papers used more than one method (i.e., a mixed-method approach) and were double- or triple-counted. Scales were seldom utilized.

Half of the studies focused their empirical research on undergraduate course(s), while one fifth studied undergraduate programs. There were not many studies of dropout in graduate degrees (13%). More complex studies (14%) studied the entire university or college or made a comparison between different universities. Accordingly, more than half of our papers studied undergraduate students. There appears to be a growing focus on non-traditional, adult students, who constituted the sample of 16% of our studies. In comparison, there is a scarcity of studies on first-year students (6%) and faculty (12%). Some studies investigated more than one sample category.

### **1.3.2. Domains and Themes**

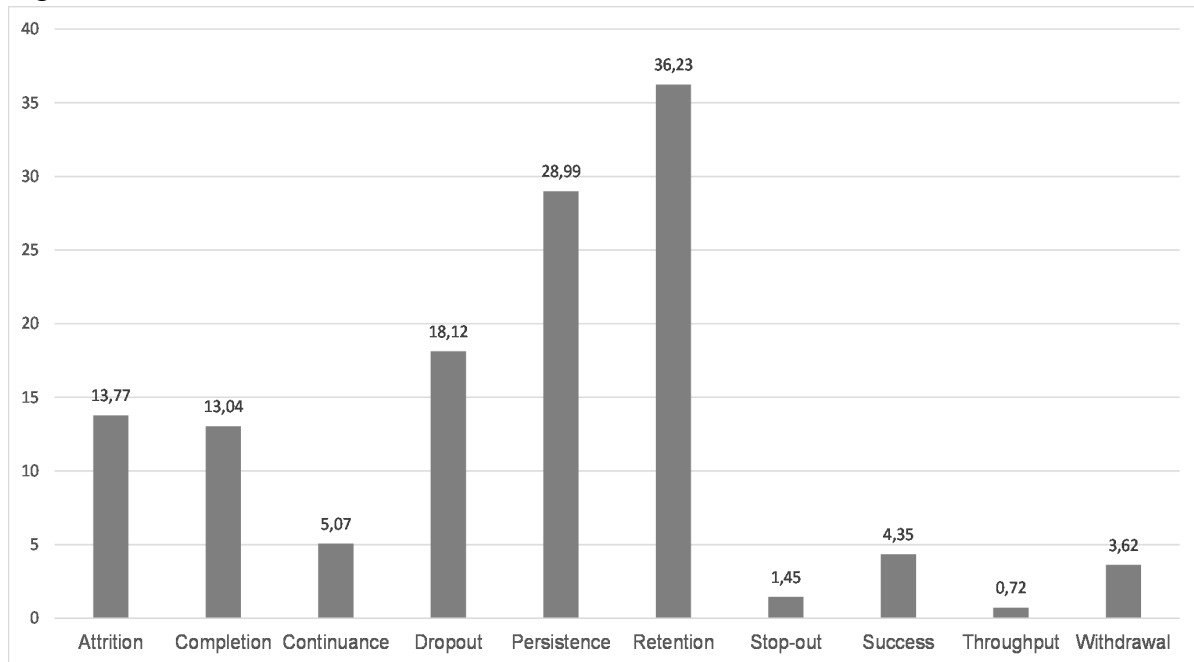
Figure 3 displays the study domains and shows the great variety of research directions (and concepts) in dropout studies. The most popular domains have a long-standing tradition: retention (36%) and persistence (29%), which is expected given that OHE institutions and researchers seek to understand both phenomena and improve their rates. For that, however, they also need to comprehend and prevent dropout and attrition, which were the third (18%) and fourth (14%) most studied domains. It seems these domains are not as popular as in the days of Tinto (1975, 1993); more “positive” domains (and concepts) such as completion (13%), retention, and persistence appear to have taken the lead in publications. Other related domains (continuance, success, withdrawal, stop-out, and throughput) were less studied, representing 15% of our sample. However, as our search strings did not include the terms success, stop-out, and throughput, this percentage must be taken with caution.

In order to clarify such distribution, it may be useful to group distinct domains according to their similarity. Certain domains are very similar, or even indistinguishable in some cases (e.g., “attrition” is often used as a synonym for “dropout”). Thus, we clustered the domains into five main groups, which are interrelated yet distinct:

1. Attrition, dropout, withdrawal, and non-enrolment (which focus on non-enrolment and/or withdrawing from a course, program, or institution);
2. Persistence and perseverance (which deal with persisting in the studies, in general - concepts more focused on individual psychological variables);
3. Retention and continuance (reflecting student retention or continuance in a course, program, or institution);
4. Success and completion (a more heterogenous group, for “success” can mean completion - of course or program - but also grades, performance, achievement, etc.);
5. Stop-out (which deals with the unique phenomenon of withdrawing from a course or program but returning later).

The study that focused on throughput was categorized as pertaining to groups 1 and 4, as it alludes to dropout, withdrawal, and completion rates.

Figure 3: Domains



Note: Articles that studied multiple domains of dropout were double counted or triple counted.

The Venn diagram (Heberle, Meirelles, da Silva, Telles, & Minghim, 2015) in Figure 4 illustrates the resulting distribution of domain groups and their overlapping. Thus grouped, the domains present a different picture. The literature seems more equally distributed among group 3 (retention and continuance), with 54 papers, group 1 (attrition, dropout, withdrawal), with 48 papers, and group 2 (persistence), with 39 papers. Group 4 (success and completion) appears as the fourth most popular. However, many papers researched more than one domain group. Papers dealing with the retention domain group often investigated themes pertaining to the persistence and success groups – which is understandable, given that both persistence and success are interrelated with retention in the literature; and three papers focused on both retention and attrition. The attrition group presented a significant overlap with the success and completion domain group, with seven papers; whereas four papers that focused on persistence also pertained to the attrition domain group. In the success/completion domain, more than half of the published literature also belonged to other domain groups, especially dropout and persistence (i.e., papers that focus on issues of success and completion tend to focus on other domains as well). Both papers that investigated stop-out also dealt with attrition and continuance. The resulting picture suggests that, while most papers (81%) can be classified as pertaining to one domain group, many (19%) pertained to more than one.

We also identified eight main themes in the dropout literature. As shown in Figure 5, the theme of factors that influence or predict dropout (or related phenomena) was by far the most popular, appearing in 77.5% of our sample. Other themes appeared less frequently (11%-16%) but are still relevant: research on interventions to ameliorate dropout rates, measures of dropout-related rates, construction of theoretical or statistical models, and comparison of dropout rates between different delivery modes. Many papers that focused on the theme of factors also studied some other theme(s). Ten papers provided recommendations and strategies to reduce dropout, nine

papers focused on theoretical issues or literature reviews, while seven studies were dedicated to discussing research methods and/or instruments for the field.

Figure 4: Venn diagram of domain groups

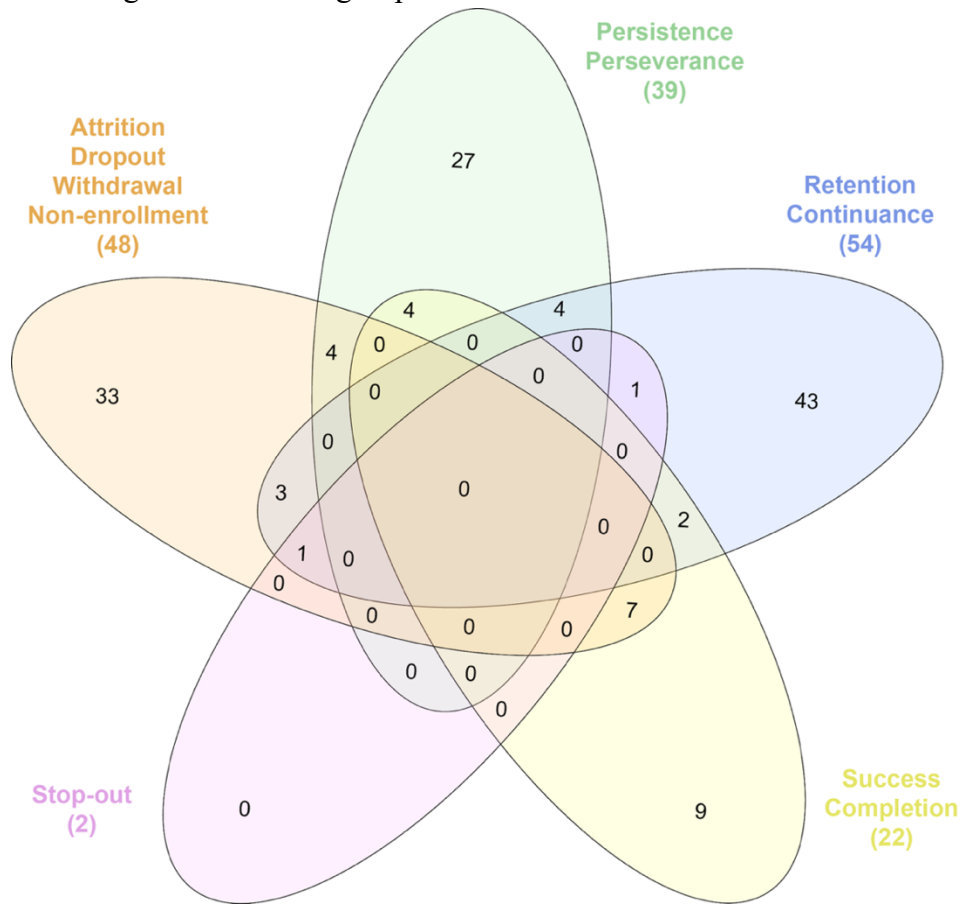
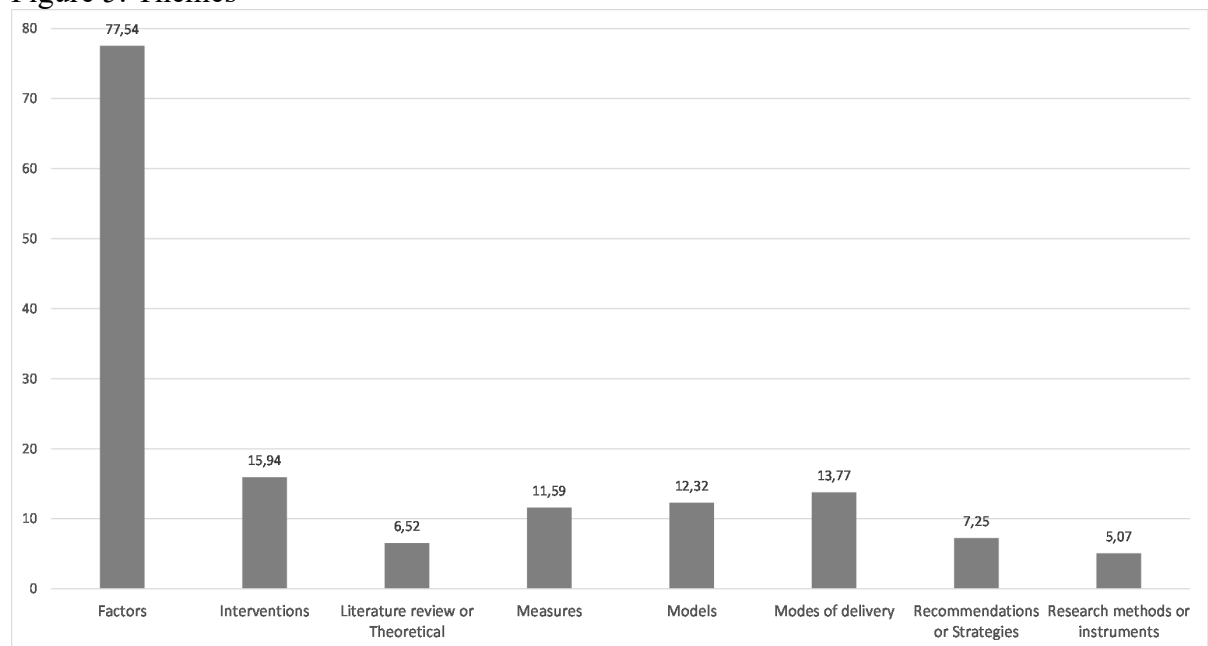


Figure 5: Themes



Note: Articles that studied multiple themes of dropout were double counted or triple counted.



### 1.3.3. Definitions and Concepts

Table 2 presents the definitions and concepts employed in the dropout literature. The most salient fact is that the majority of papers did not provide any definition of the central concepts employed; 78% of the studies that used the concept of withdrawal, 70% of the ones that employed dropout, and 63% of the ones using retention did not define such concepts, taking them for granted. Other concepts such as persistence and completion received definitions more often (in 65% and 56% of the studies that employed them, respectively).

Table 2: Concepts and definitions

Concepts and definitions	<i>n</i>	%	Shared characteristics/Selected references
<b>Attrition</b>			
<i>From author(s)</i>	9	18.37	<ul style="list-style-type: none"> <li>Attrition as failing (depending on grades) or withdrawing from <i>course or program</i> was prevalent (Dews-Farrar, 2018; Glazier, 2016; Zimmerman &amp; Johnson, 2017)</li> <li>Three papers defined attrition as leaving the <i>university</i> (Figueira, 2015; Hart, 2014; York, 2014)</li> <li>Most employed other concepts (dropout, completion, withdrawal, retention) to define attrition (Figueira, 2015; Knestrick et al., 2016; Nadasen, 2016)</li> </ul>
<i>From literature</i> (Ali & Leeds, 2009; Angelino & Natvig, 2009; Angelino, Williams, & Natvig, 2007; Berger, Ramirez & Lyons, 2012; Hart, 2012; Haydarov, Moxley, & Anderson, 2012; Kyger, 2008; Lee & Choi, 2011; Martinez, 2003; NCES, 2008; Seidman, 2005; Soen & Davidovitch, 2008; Tinto, 2013)	15	30.61	<ul style="list-style-type: none"> <li>Most common definition was failing to complete, or not continuing, <i>course or program</i> (Burgess, 2017; Huggins, 2017; Lucey, 2018; Wright, 2015)</li> <li>Two papers defined attrition as leaving the <i>institution</i> (Moore, D., 2014; Nuesell, 2016)</li> <li>Only one paper mentioned a specific timeframe (Hannah, 2017)</li> <li>Two papers (Strebe, 2016; Struble, 2014) defined attrition as a synonym of dropout, and one as the antonym of retention (Johnson, C., 2015)</li> <li>Martinez (2003) was the most employed author for definitions (Lucey, 2018; Russo-Gleicher, 2014; Wright, 2015)</li> </ul>
<i>Not Provided</i>	25	51.02	<ul style="list-style-type: none"> <li>Many papers simply did not provide any definition (Ali &amp; Smith, 2015; Bawa, 2016)</li> <li>Two papers did not provide a definition but employed the concept specifically in relation to courses (Cochran, Campbell, Baker, &amp; Leeds, 2014; Greenland &amp; Moore, 2014)</li> </ul>
Total	49	100	
<b>Completion</b>			
<i>From author(s)</i>	13	48.15	<ul style="list-style-type: none"> <li>6 articles: completing and obtaining a <i>degree</i> in a time period (usually 6 years) (Allen, 2017; Brock, 2014; Shea &amp; Bidjerano, 2018)</li> </ul>

			<ul style="list-style-type: none"> <li>4 articles: completing a <i>course</i>, which depends on grades (Nadasen, 2016; Strebe, 2016)</li> </ul>
<i>From literature</i> (Rust, 2006; Tinto, 2012)	2	7.41	<ul style="list-style-type: none"> <li>The first referred to course completion (pass), the second to graduation in a program (Heald, 2018; Moore, D., 2014)</li> </ul>
<i>Not Provided</i>	12	44.44	<ul style="list-style-type: none"> <li>Three papers did not provide a definition but employed the concept specifically in relation to courses (Gardner, 2016; Murphy &amp; Stewart, 2017)</li> <li>And two papers specifically in relation to a degree (Rashid, Jahan, Islam, &amp; Ratna, 2015; Sweeney, 2017)</li> </ul>
Total	27	100	
<b>Dropout</b>			
<i>From author(s)</i>	11	22.45	<ul style="list-style-type: none"> <li>Definitions varied wildly; some focused on dropout from an institution or program in a time period (2-4 semesters) (Brock, 2014; Gregori, Martínez, &amp; Moyano-Fernández, 2018)</li> <li>Others focused on dropout from course(s), depending on sitting exams (Deschascht &amp; Goeman, 2015; Tan &amp; Shao, 2015)</li> </ul>
<i>From literature</i> (Abbad, Carvalho, & Zerbini, 2006; Botsch & Botsch, 2012; Lee & Choi, 2011; Levitz, Noel, & Rizter, 1999)	4	8.16	<ul style="list-style-type: none"> <li>Definitions varied wildly; some focused on graduating or not, voluntarily or involuntarily; others on withdrawing from courses, depending also on grades (Franko, 2015; Gangaram, 2015; Grau-Valldosera &amp; Minguillon, 2014; Seabra, Henriques, Cardoso, Barros, &amp; Goulão, 2018)</li> </ul>
<i>Not Provided</i>	34	69.39	<ul style="list-style-type: none"> <li>Three papers did not provide a definition but employed the concept specifically in relation to <i>courses</i> (Burgos et al., 2018; Croxton, 2014; Mahmodi &amp; Ebrahimzade, 2015)</li> <li>Others mentioned <i>course or program</i> (Yang, Baldwin, &amp; Snelson, 2017; Yukselturk, Ozekes, &amp; Türel, 2014), or <i>course or institution</i> (Sanz, Vírveda, García, &amp; Arias, 2018; Woodley &amp; Simpson, 2014)</li> </ul>
Total	49	100	
<b>Persistence</b>			
<i>From author(s)</i>	16	33.33	<ul style="list-style-type: none"> <li>Continuous enrolment (in the next course or semester) was the most common definition (Allen, 2017; Bettinger, Doss, Loeb, Rogers, &amp; Taylor, 2017)</li> <li>Some employed a time frame (enrolment for 3-4 consecutive semesters) (Arifin, 2016; Dexter, 2015)</li> </ul>
<i>From literature</i>	15	31.25	<ul style="list-style-type: none"> <li>Martinez (2003) was the most employed author (to remain enrolled or complete a</li> </ul>

(Barnett, 2011; Berger et al., 2012; Escobedo, 2007; Hart, 2012; Kemp, 2002; Libby, & Catherine, 2008; Levitz et al., 1999; Martinez, 2003; Street, 2010; Tinto, 2012, 2013)			<p>course or program) (Budash, 2015; Nuesell, 2016; Verdinelli &amp; Kutner, 2015)</p> <ul style="list-style-type: none"> <li>• Most studies defined it as completion of degree or program (Duckett, 2014; Johnson, C., 2015; Struble, 2014)</li> <li>• Intention to continue, or continuation itself in HE (Tinto) (Adams, 2017; Mitchell, 2015)</li> <li>• Antonym of dropout, indicator of performance (Franko, 2015)</li> </ul>
<i>Not Provided</i>	17	35.42	(Banks, 2017; Bornschlegl & Cashman, 2018; Choi & Kim, 2017)
<b>Total</b>	<b>48</b>	<b>100</b>	
<b>Retention</b>			
<i>From author(s)</i>	13	18.57	<ul style="list-style-type: none"> <li>• Continuous enrolment (in the next year) was the most common definition (Chiyaka et al., 2016, mentioned "in the same institution") (Allen, 2017; Chiyaka, Sithole, Manyanga, Mccarthy, &amp; Bucklein, 2016; James, Swan, &amp; Daston, 2016; Macy, 2015)</li> <li>• Graduation or completion of a program/degree (Banks, 2017; Gazza &amp; Hunker, 2014; Knestrick et al., 2016; Wright, 2015)</li> <li>• Completion of course and/or degree; opposite of attrition (Dews-Farrar, 2018; Nadasen, 2016)</li> <li>• Intention or attempt to complete courses (González, 2015; Harris, 2015)</li> </ul>
<i>From literature</i> (Ali & Leeds, 2009; Bawa, 2016; Berger & Lyon, 2007; Berger, Ramirez & Lyon, 2012; Fowler & Luna, 2009; Hewitt & Rose-Adams, 2012; Hongwei, 2015; Koehnke, 2013; Martinez, 2003; Pascarella & Terenzini, 2005; Reason, 2009; Tinto, 1975, 2013)	13	18.57	<ul style="list-style-type: none"> <li>• Student progress or continuous enrolment from the institution perspective (Adams, 2017; Johnson, C., 2015; Strebe, 2015; Vadell, 2016)</li> <li>• Ability of an institution to retain a student through graduation (Duckett, 2014; Giannaris, 2016; Moore, D., 2014). Hannah (2017) mentions a time-period</li> <li>• Number of online students who complete online courses (Heald, 2018; Marshall, 2017; Struble, 2014)</li> </ul>
<i>Not Provided</i>	44	62.86	(Armstrong et al., 2018; Sorensen & Donovan, 2017; Stone, 2017)
<b>Total</b>	<b>70</b>	<b>100</b>	
<b>Success</b>			
<i>From author(s)</i>	7	33.33	<ul style="list-style-type: none"> <li>• Course grades or grade point average (GPA) (Dexter, 2015; Gardner, 2016; Harris, 2015; Levy &amp; Ramim, 2017)</li> <li>• Course grades and retention rates (Glazier, 2016)</li> </ul>

			<ul style="list-style-type: none"> <li>Different definitions - at the institutional level (retention and graduation rates), program level (retention and program completion), and course level (completion of courses) (Nadasen, 2016)</li> </ul>
<i>From literature</i> (Burns, 2013; Cuseo, Fecas, & Thompson, 2010)	2	9.52	<ul style="list-style-type: none"> <li>Students who display persistence throughout courses, measured by grades (Marshall, 2017; Wright, 2015)</li> </ul>
<i>Not Provided</i>	12	57.14	(Andrews & Tynan, 2014; Banks, 2017; Winger, 2016)
<b>Total</b>	<b>21</b>	<b>100</b>	
<b>Withdrawal</b>			
<i>From author(s)</i>	2	22.22	<ul style="list-style-type: none"> <li>Voluntary or involuntary removal from a course prior to completion (Lim, 2016; McClelland, 2014)</li> </ul>
<i>From literature</i>	0	0	<ul style="list-style-type: none"> <li>No definitions from the literature were employed</li> </ul>
<i>Not Provided</i>	7	77.78	<ul style="list-style-type: none"> <li>Most papers did not provide a definition but two employed the concept in relation to courses (Greenland &amp; Moore, 2014; Murphy &amp; Stewart, 2017)</li> </ul>
<b>Total</b>	<b>9</b>	<b>100</b>	
<b>Other concepts</b>			
<b>Continuance intention</b>			
<i>From author(s)</i>	2	100	<ul style="list-style-type: none"> <li>To continue studies after one or more periods of non-enrollment (stop-out) (Grau-Valldosera et al., 2018)</li> <li>Enrolling in at least one course at the university in the next period (Rodríguez-Ardura &amp; Meseguer-Artola, 2016a)</li> </ul>
<i>From literature</i>	0	0	<ul style="list-style-type: none"> <li>No definitions from the literature were employed</li> </ul>
<i>Not Provided</i>	0	0	
<b>Total</b>	<b>2</b>	<b>100</b>	
<b>Stop-out</b>			
<i>From author(s)</i>	5	100	<ul style="list-style-type: none"> <li>Most studies defined it as not enrolling for a period of time (from one semester up to 5 years) (Brock, 2014; Grau-Valldosera &amp; Minguillon, 2014; Nuesell, 2016)</li> <li>Returning to course within one year (Shefsky, 2014)</li> </ul>
<i>From literature</i>	0	0	<ul style="list-style-type: none"> <li>No definitions from the literature were employed</li> </ul>
<i>Not Provided</i>	0	0	
<b>Total</b>	<b>5</b>	<b>100</b>	
<b>Throughput</b>			

<i>From author(s)</i>	1	100	<ul style="list-style-type: none"> <li>Aggregate of three variables – drop rates, withdrawal rates, and C or better rates (Hilton III, Fischer, Wiley, &amp; William, 2016)</li> </ul>
<i>From literature</i>	0	0	<ul style="list-style-type: none"> <li>No definitions from the literature were employed</li> </ul>
<i>Not Provided</i>	0	0	
Total	1	100	

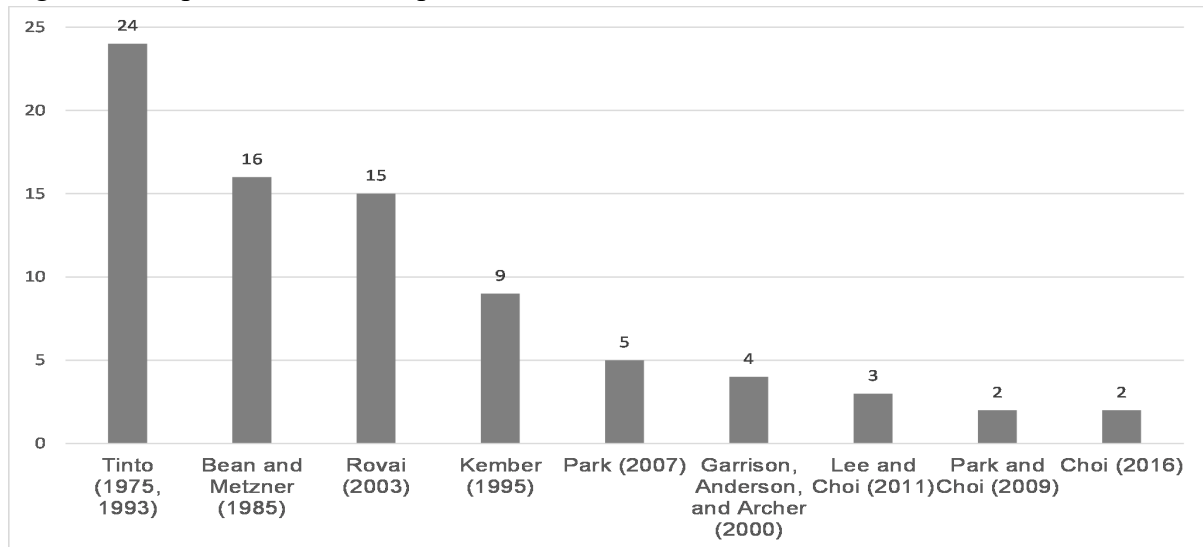
Completion seems to be a clearer, less controversial concept, usually alluding to completion of course or program; very few authors employed completion definitions from the body of literature. Many papers defined concepts such as attrition, persistence, and success employing other related concepts, sometimes without defining the latter (e.g., retention and persistence as completion; success as retention; etc.). Definitions of dropout varied wildly but centered upon dropping out from either institution or program or course, during a certain time period, and depending on grades or sitting exams. Comparatively few papers drew definitions from previous published literature (except for papers that employed attrition, persistence, and retention, in which case half of the definitions came from other authors). The other concepts - continuance intention, stop-out, and throughput -, which are far less common in our sample, received clear definitions, all of them produced by the authors themselves (and not extracted from previous literature).

#### **1.3.4. Dropout Models**

From the 13 papers that produced quantitative or conceptual predictive models, most focused on dropout/attrition, based on various predictor variables such as grades, age, and social isolation (e.g., Burgos et al., 2018; Knestruck et al., 2016; Laing & Laing, 2015; McClelland, 2014; Tan & Shao, 2015). Some other models investigated persistence (Shea & Bidjerano, 2014), including doctoral persistence (Rockinson-Szapkiw et al., 2016) and persistence in students with disabilities (Verdinelli & Kutner, 2015). Other models focused on completion (Zimmerman & Johnson, 2017), continuance (Rodríguez-Ardura & Meseguer-Artola, 2016a, 2016b), success (Nadasen, 2016), and stop-out (Shefsky, 2014). Quite a few papers (e.g., Bornschlegl & Cashman, 2018) employed multiple factors, classified under categories analogous to models, with student, environmental, and program factors.

A number of studies employed models from the literature, or discussed them at length, as shown in Figure 6. The most popular model was the one by Tinto (1975, 1993), probably the most famous author (and model) in the field, which appeared in 24 papers; followed by the models offered by Bean and Metzner (1985), Rovai (2003), and Kember (1995). Although it is not a dropout model per se, the Community of Inquiry framework (Garrison, Anderson, & Archer, 2000) was employed as such in four papers. By the number of different models employed one can see that there is ample variety in the field in that regard. Many papers (e.g., Budash, 2015; Nadasen, 2016) employed more than one model. Eighteen other models appeared just once (i.e., each model was employed in one single paper only).

Figure 6: Dropout models from previous literature



### 1.3.5. Dropout Factors

The overwhelming majority (77.5%) of studies focused their research on specific variables. The variety of factors, given the size of our sample, is impressive; so, many factors that appeared less often (e.g., privacy and loyalty) are not analyzed here. To classify them, we used the categories advanced by Lee and Choi (2011): student factors, course/program/institutional factors, and environmental factors. The three main categories contain a total of 12 factors (see details in Table 3). Many studies mentioned factors that pertained to more than one category, and thus were counted more than once.

Course/program/institutional factors (studied in 76% of our papers) were mentioned most often, followed by student factors (72%) and environmental factors (35%). This is a surprising result, given that Lee and Choi (2011) found that 55% of their identified dropout factors belonged to the student factors category, while only 20% of the variables were classified as course or program factors, and 24% as environmental factors. This seems to point that course/program/institutional factors have become more prevalent in the literature.

Student dropout factors mentioned in our sample followed more or less the patterns seen in Lee and Choi (2011), yet with certain differences. Demographic characteristics (which were excluded by Lee & Choi, 2011) appeared as an important factor, for many papers studied variables such as age, gender, and being a non-traditional student. This last variable seems to have acquired more prominence in the literature, which is logical considering its importance (and that non-traditional students are the majority in OHE). Skills like self-regulation and time management, and psychological attributes such as motivation, engagement, and satisfaction also appeared more often.

Table 3: Dropout factors

<b>Factors</b>	<b><i>n</i></b>	<b>%</b>	<b>Factors most studied/Selected references</b>
<b><i>Student factors</i></b>	100	72.46	
Academic background			<ul style="list-style-type: none"> <li>Most relevant factors were prior GPA (Hachey, Wladis, &amp; Conway, 2014; Macy, 2015) and academic preparedness (Gangaram, 2015; Knestrick et al., 2016)</li> </ul>
Demographic characteristics			<ul style="list-style-type: none"> <li>Age (James, Swan, &amp; Daston, 2016; Shefsky 2014); gender (Macy, 2015; Mitchell, 2015; Stone &amp; O’Shea, 2018); being a non-traditional student (Grau-Valldosera &amp; Minguillón, 2014; Huggins, 2016; Stoessel, Ihme, Barbarino, Fisseler, &amp; Stürmer 2014)</li> </ul>
Relevant experiences			<ul style="list-style-type: none"> <li>Prior experience and performance (Falconer, Griffith, Wood, Acharyya, &amp; Roberts, 2018; Strebe, 2016); no high school diploma (Shea &amp; Bidjerano, 2016)</li> </ul>
Skills			<ul style="list-style-type: none"> <li>Self-regulation, self-management or self-discipline (Gaytan, 2015; Shaw, Burrus, &amp; Ferguson, 2016; Van Hunnik, 2015); time management skills and procrastination (Andrews &amp; Tynan, 2014; Giannaris, 2016; Lim, 2016); digital literacy / technology (Burmester, Metscher, &amp; Smith, 2014; Maye, 2015); learning and research skills (Levy &amp; Ramim, 2017); technological constraints or challenges (Bawa, 2016; Burgess, 2017)</li> </ul>
Psychological attributes			<ul style="list-style-type: none"> <li>Motivation (González, 2015; Hart, 2014; Lucey, 2018); engagement (Dexter, 2015; Nadasen, 2016; Poll, Widen, &amp; Weller, 2016); satisfaction (Bianchi-Laubsch, 2014; Garratt-Reed, Roberts, &amp; Heritage, 2016; Vakoufari, Christina, &amp; Mavroidis, 2014); learning style (Hannah, 2017; Heidrich et al., 2018; Moore, D., 2014); self-efficacy/resilience (Tucker, 2014; Verdinely &amp; Kutner, 2015)</li> </ul>
<b><i>Course/Program/Institution factors</i></b>	105	76.09	
Assessment			<ul style="list-style-type: none"> <li>Activity grades and outcome (GPA) (Burgos et al., 2018; Choi &amp; Kim, 2017)</li> </ul>
Course design			<ul style="list-style-type: none"> <li>Instructional design (e.g. class size/learning materials or resources)</li> </ul>

			(Estes, 2016; Glazier, 2016; Snyder, 2014); course design and difficulty (Harris, 2015; Winger, 2016); program/instruction quality (Banks, 2017; Shea & Bidjerano, 2018); workload (Burgess, 2017; Calvert, 2014)
Delivery mode			<ul style="list-style-type: none"> <li>• Online, blended, or f2f (Chavez-Toivanen, 2017; Deschascht &amp; Goeman, 2015; Faulconer et al., 2018; Swan, 2016)</li> </ul>
Institutional factors			<ul style="list-style-type: none"> <li>• Student support (Arifin, 2018; Gangaram, 2015; Heald, 2018; Huggins, 2016); instructors/faculty characteristics or behavior (Bawa, 2016); learning management systems (Boton &amp; Gregory, 2015); orientation (Marshall, 2017; Robichaud, 2016); tutorial attendance (Tower et al., 2015)</li> </ul>
Interactions			<ul style="list-style-type: none"> <li>• Social interaction or integration (Figueira, 2015; Rockinson-Szapkiw et al., 2016; Thistoll &amp; Yates, 2016); Community of Inquiry factors (Miner, 2014; Snyder, 2014; Traver et al., 2014); faculty interaction with students (Gaytan, 2015; Lee, Lee, &amp; Kim, 2018; Mahmodi &amp; Ebrahimzade, 2015; Maye, 2015); inter-student interaction (Cambruzzi, Rigo, &amp; Barbosa, 2015; Mahmodi &amp; Ebrahimzade, 2015); sense of community (Laing &amp; Laing, 2015; Lowe-Madkins, 2016; Mitchell, 2015); sense of isolation or belonging (Stone, 2017; Thomas, Herbert, &amp; Teras, 2014)</li> </ul>
<b><i>Environment factors</i></b>	48	34.78	
Work/time commitments			<ul style="list-style-type: none"> <li>• Employment status (Calvert, 2014; Johnson, A. B., 2017; Sanz et al., 2018); time issues or lack of time (Inkelaar &amp; Simpson, 2015; Johnson, C., 2015); work/life/family commitments (Franklin, 2015; Shea &amp; Bidjerano, 2016)</li> </ul>
Supportive environments			<ul style="list-style-type: none"> <li>• Financial problems or aid (Rockinson-Szapkiw et al., 2016); life events (Sorensen &amp; Donovan, 2017); support from family, work, friends (Thistoll &amp; Yates, 2016)</li> </ul>

Note: Papers that addressed more than one factor category were counted more than once



To the category course/program dropout factors were added “institutional” factors as well, to account for variables such as student support and faculty characteristics or behavior that, being typical of an OHE institution, extend across multiple courses and programs. The variable assessment (activity grades and outcome) was also added, given its frequency in our sample, and to discern it from prior GPA. Another difference is that there were many studies comparing delivery modes (online, blended, or f2f) as regards to dropout rates and related phenomena.

Regarding environmental dropout factors, we have added the variable time commitments, given its ubiquity in our sample. Indeed, this seems important since time issues, lack of time, and other life and family commitments appear often as important dropout variables.

### 1.3.6. Main Findings

Table 4 summarizes the relevant findings of the literature studied. The factors that were found to be most correlated with dropout were demographic characteristics; time- and financial-related issues; self-regulation skills; motivation; and student support. Other reviews or investigations found the same key factors (Bawa, 2016; Castles, 2004; Lee & Choi, 2011), but not the emphasis on demographic characteristics. The correlation of students’ background characteristics such as age and gender with dropout or persistence goes against the grain of previous research; there was not a consensus among researchers about the importance of such factors (Lee, Choi, & Kim, 2012). However, numerous other factors (e.g., satisfaction and previous distance experience) were found to be correlated, but less often. Additionally, many studies found no correlation between the factors chosen (e.g., faculty behavior, technological factors) and dropout phenomena.

Table 4: Main findings

Themes	<i>n</i>	%	Main findings/Selected references
<i>Factors</i>	85	61.59	<ul style="list-style-type: none"> <li>• Factors that were most associated to dropout: time management, procrastination, and work/family commitments; gender, age, and GPA; motivation; financial issues; and student support (Arifin, 2016; Budash, 2015; Burgess, 2017; Burmester et al., 2014; Gaytan, 2015; Johnson, A. B., 2017; Lim, 2016; Thistoll &amp; Yates, 2016)</li> <li>• Many studies found numerous student, course/program, and environmental factors that correlated with dropout (Calvert, 2014; Choi &amp; Kim, 2017; Lucey, 2018)</li> <li>• Many papers found no significant association between the factors they studied and dropout/persistence/retention (Allen, 2017; Armstrong et al., 2018; Dexter, 2015; Traver et al., 2014)</li> </ul>

<b><i>Interventions</i></b>	17	12.32	<ul style="list-style-type: none"> <li>• Many interventions, mostly based on forms of support and orientation, increased retention just a little (Burgos et al., 2018; Inkelaar &amp; Simpson, 2015; Shaw et al., 2016; Tower et al., 2015)</li> <li>• Interventions with the highest impact on retention and dropout were done in postgraduation settings (Gregori et al., 2018; Sutton, 2014)</li> <li>• Different types of interventions had no effect on retention, persistence, or dropout rates (Franko, 2015; Hannah, 2017; Heald, 2018; Miner, 2014; Sullivan, 2016)</li> </ul>
<b><i>Literature review/theoretical</i></b>	9	6.52	<ul style="list-style-type: none"> <li>• Literature reviews focused on the fields of dropout and retention (Bawa, 2016; Travers, 2016), or on specific issues such as strategies and best practices (Gazza &amp; Hunker, 2014; Poll et al., 2014)</li> <li>• Theoretical findings mostly developed definitions and frameworks (Grau-Valldosera &amp; Minguillon, 2014; Seabra et al., 2018)</li> </ul>
<b><i>Measures</i></b>	20	14.49	<ul style="list-style-type: none"> <li>• Most papers measured <i>degree</i> or <i>institution</i> dropout (not graduating) and found very high rates (Brock, 2014; Inkelaar &amp; Simpson, 2015)</li> <li>• Other authors measured <i>course</i> dropout, with much lower rates (Burgos et al., 2018; Cambuzzi et al., 2015; Greenland &amp; Moore, 2014)</li> <li>• Difficult to interpret/compare measures due to imprecise terminology</li> </ul>
<b><i>Models</i></b>	17	12.32	<ul style="list-style-type: none"> <li>• From the papers that produced models, most focused on dropout/attrition (Burgos et al., 2018; Knestrick et al., 2016; Laing &amp; Laing, 2015; Tan &amp; Shao, 2015; Thistoll &amp; Yates, 2016; Vogel et al., 2018)</li> <li>• Other models focused on persistence (Rockinson-Szapkiw et al., 2016; Shea &amp; Bidjerano, 2014) and success (Nadasen, 2016; Woodley &amp; Simpson, 2014)</li> <li>• Models on course completion (Zimmerman &amp; Johnson, 2017), continuance intention (Rodríguez-Ardura &amp; Meseguer-Artola, 2016b), retention (Slade &amp; Prinsloo, 2015) and stop-out (Shefsky, 2014) were less common</li> </ul>

<b><i>Modes of delivery (comparison between)</i></b>	21	15.22	<ul style="list-style-type: none"> <li>• Most papers found that online courses have a negative impact on degree completion (Huntington-Klein, Cowan, &amp; Goldhaber, 2017; Nuesell, 2016); withdrawal rates are significantly higher in fully online courses (Ali &amp; Smith, 2015; Murphy &amp; Stewart, 2017; Struble, 2014; Wladis et al., 2015)</li> <li>• Other authors found small or no statistically significant differences regarding persistence or degree completion comparing online, blended, and f2f modes (Chavez-Toivanen, 2017; Dexter, 2015; Faulconer et al., 2018; Gangaram, 2015; James, Swan, &amp; Daston, 2016)</li> <li>• However, in other studies participating in online courses was also associated with higher retention, success, and probability of graduating (Deschascht &amp; Goeman, 2015; Macy, 2015; Shea &amp; Bidjerano, 2014, 2016, 2018)</li> </ul>
<b><i>Recommendations/Strategies</i></b>	10	7.25	<ul style="list-style-type: none"> <li>• Most recommendations addressed instructional/course design and student support (Robichaud, 2016; Van Hunnik, 2015)</li> <li>• Others focused on feedback issues and social presence/sense of community (Bissonette, 2017; Estes, 2016; Poll et al., 2014)</li> <li>• Some authors found numerous possible strategies or best practices (Sánchez-Elvira Paniagua &amp; Simpson, 2018; Stone, 2017; Travers, 2016)</li> </ul>
<b><i>Research methods/instruments</i></b>	10	7.25	<ul style="list-style-type: none"> <li>• Most papers produced database learning analytics approaches to predict dropout (Adams, 2017; Cambuzzi et al., 2015; Yukselturk et al., 2014)</li> <li>• Others developed persistence or attrition scales (Hart, 2014; York, 2014)</li> <li>• Standardized instruments that can be used for dropout assessment (faculty course evaluation and e-learning skills) were also developed (Harris, 2015; Levy &amp; Ramim, 2017)</li> </ul>

Note: Papers whose findings alluded to more than one theme were counted more than once

Papers that assessed different interventions to address dropout – e.g., additional academic support and motivational emails - found that they reduced dropout slightly (between 2%-11%).

The most effective intervention was student tutoring plans, which increased retention by 14% (Burgos et al., 2018). Interventions in graduate settings were significantly more efficient, which is probably due to their different context and target population. Several interventions – e.g., offering students coaching services, synchronous support, and text reminders - had no effect on dropout.

The findings of literature reviews are particularly difficult to summarize. Most dealt with dropout and retention; however, a few focused on reviewing literature on strategies and best practices, presenting a huge collection of recommendations. As for purely theoretical findings, some papers provided theoretical frameworks for attrition (Laing & Laing, 2015) and permanence (Seabra et al., 2018); only one paper delved into providing a new definition of dropout (Grau-Valldosera & Minguillón, 2014).

Measure findings focused on statistical estimates of dropout. Most papers measured *degree* or *institution* dropout (not graduating) and found very high rates, ranging from 45% (Choi & Kim, 2017; Choi & Park, 2018) to 85% (Brock, 2014; Inkelaar & Simpson, 2015). That is in line with Woodley and Simpson (2014), who mention that the UK Open University's graduation rate is 22%. Papers that found low dropout rates (8%-25%) measured *course* dropout (Burgos et al., 2018; Tan & Shao, 2015; Zimmerman & Johnson, 2017) or persistence (Allen, 2017). However, it is particularly difficult to interpret and compare measures due to imprecise terminology. Findings regarding dropout models were already discussed above.

Regarding modes of delivery and dropout rates, the findings seem to be inconclusive - most papers found that taking online courses impacted negatively on completion and withdrawal; yet other papers found no impact, or no difference in rates between different modes (online, blended, or f2f); while others found higher retention and graduation in online courses. That is surprising, since the literature usually postulates that dropout rates are much higher in OHE (Wladis et al., 2015).

Most recommendations in the literature addressed changes in learning design (assessments, increasing interactivity) and providing different forms of student support (academic advising). However, some also addressed feedback issues and social presence or sense of community (Bissonette, 2017; Poll et al., 2014), which is reminiscent of Tinto's (1993) strong influence on the field. Strategies were quite numerous and varied, so we refer the reader to the Appendix 3, where all the strategies given by each paper are summarized.

Finally, regarding research methods and instruments, relying on learning analytics (academic databases) was prevalent for predicting dropout. Few standardized scales for persistence or attrition (Hart, 2014; York, 2014) were produced; as were some scales to assess faculty course evaluation and student e-learning skills (Harris, 2015; Levy & Ramim, 2017).

## 1.4. Discussion

In this section we summarize our findings to provide a panoramic overview of dropout literature in the period (2014-2018) and highlight some of its prominent gaps, drawing implications and recommendations to advance the field. Although we did not find any major general trend apart from a strong focus on the study of dropout *factors*, specific tendencies and findings are compared to the ones found in previous reviews.

### 1.4.1. General Overview of Characteristics

Overall, recent dropout studies present a very complex landscape, with some specific tendencies and problems. Scientific production (in English) in the field comes mainly from western countries, with most papers coming from the US and Europe – which have different contexts and definitions of dropout and policies, usually of an institutional (governmental) nature. Another context that should be taken into consideration in dropout studies is the type of OHE investigated. The field still seems to suffer a huge influence of models and theories designed for f2f settings. Face-to-face settings (and also hybrid settings) are very different from open, fully online settings, in terms of learning design, demographics, student preparation and previous experience, among other factors (Patterson & McFaden, 2009). Open OHE usually has no entry academic requirements, and few or none permanence requirements. It seems that in the last decades the field has been slowly adapting to such specificities, developing new models, resources, and theories that take them into full account.

Dropout studies are characterized by methodological diversity, in accord with the diverse range of themes studied. However, most (57%) of the papers analyzed here employed quantitative methods. That represents a major change in the field, if compared with findings by Simpson (2010), who found an emphasis on qualitative data in his review and criticized their dependence on surveys of student opinion. Employing experimental designs with control groups, which is important for the evaluation of interventions, is rare (Lee & Choi, 2011; Simpson, 2010). Lee and Choi (2011) complained that evidence of interventions effectiveness was rare, yet in our review several papers presented such evidence; however, they usually rely on relatively small samples. Overall, the impression is of poor or medium methodological rigor in the field; thus, findings might have been heavily influenced by the methods chosen. Also, the data collected are often of a limited, institutional nature - as they are easily obtainable -, focused on applying learning analytics to databases, centering on quantitative factors (e.g., grades and previous experience). However, dropout phenomena are largely qualitative and complex. Dropout studies thus tend to lack information on important sociopsychological causes and contingencies (e.g., personal experiences, workload, and family commitments).

Therefore, more qualitative studies are needed so as to probe the actors' (students, faculty, institution) experience and the multiplicity of factors, as the lived experiences of e-Learners and faculty remain somewhat ignored by the literature (O'Shea, Stone, & Delahunty, 2015). Most studies usually focus on the behavior of students who persist - but it is crucial to study the ones who withdraw. However, qualitative information on OHE students who drop out is more difficult to collect; such studies tend to focus on very specific contexts or courses, and

their generalizability is limited. Therefore, more quantitative studies with standardized scales and large samples should also be considered, to complement the more qualitative studies. Ideally, the field would benefit from the employment of complex mixed-method designs with large samples, although that is particularly difficult with dropout students.

In addition, researchers should dedicate more studies to whole universities, or to the comparison of different universities; and to graduate degrees. Although the unit of analysis is usually constituted by undergrad students, the study of non-traditional, adult learners is a growing, important focus of research. In contrast with the small number of studies (less than 8%) on non-traditional students found by Lee and Choi (2011) and Tyler-Smith (2006), 16% of the papers in our sample focused on such student population; prevention and interventions should address its specificities. Efforts should also be dedicated to more studies on first-year students (as dropout is typical in that period: Simpson, 2010), first-time e-Learners (Tyler-Smith, 2006), and faculty (as the institutional stakeholders that can influence student retention the most). Research should also address when dropout occurs (e.g., beginning of course, before the first assessment), which is important for the design of early interventions.

#### **1.4.2. A Complex Phenomenon without a Clear Definition**

Dropout-related phenomena are complex and thus require clear definitions. However, the field is almost chaotic in that regard. The vast majority of the papers studied did not provide any definition; when they did, usually they did not employ previous definitions available in the literature. Also, some definitions are narrow, others very broad and vague; and most are used interchangeably. Another problem is that most definitions are designed as institutional indicators (e.g., retention as completion of a course or program) that do not take into account the students' desires and expectations. In OHE many students do not plan to graduate, or even complete their courses (Woodley & Simpson, 2014). Definitions are still "shaped by theories that view student retention through the lens of institutional action and ask what institutions can do to retain their students" (Tinto, 2015, p. 254). Usually they do not consider factors such as transfer to another institution (Ashby, 2004), which imply that students continue their HE studies yet are regarded as dropouts. Thus, stakeholders and policy makers have little accurate and reliable information about dropouts (Grau-Valdosserra & Minguillón, 2014), which affects monitoring and comparing interventions. Hence, results are often not comparable across courses, programs, institutions, and countries.

Inconsistent terminology is crucial, for dropout definitions determine how it is measured, confronted, and researched (Ashby, 2004). Therefore, developing common standard definitions and data collection procedures would benefit the field and impact policy and retention strategies. Tinto (1975) stressed that the field suffered from "inadequate attention given to questions of definition", requiring the development of "theoretical models that seek to explain, not simply to describe, the processes" (p. 89) that lead to dropout. The field has changed little since Tinto (1982), still studying f2f settings, warned that "dropout research is in a state of disarray, in large measure because we have been unable to agree about what behaviors constitute an appropriate definition of dropout" (p. 3).

That constitutes a major challenge for OHE dropout studies: in theoretical-empirical terms, they need generalizable, ample, and precise definitions; but they also demand context-dependent, flexible definitions to address situated interventions. Given the variability of contexts (different university systems, countries and OHE models), it seems this impasse is central to the field. The only answer to that question in our sample was given by Grau-Valldosera and Minguillón (2014), who formulated a program- and context-dependent definition based on learning analytics. However, it seems very difficult to operationalize in large studies, as it is very specific.

#### **1.4.3. Multiple and Interchangeable Domains and Themes**

Dropout studies investigate manifold and often interchangeable domains. When dropout domains are clustered, the literature seems to be well distributed between them. Unfortunately, it is impossible to compare the present scenario with previous ones, for prior reviews did not map the field in the same way. Two recommendations seem apropos: to complement studies on dropout and retention domains with studies on persistence (which have a more psychological nature); and to develop more studies on stop-out and its relationships with attrition and continuance, as stop-out behavior often leads to dropout (Grau-Valldosera & Minguillón, 2014).

As regards the themes researched, the overwhelming majority of our sample studied dropout factors. More attention should be paid to research on interventions and strategies, preferably with cost-benefit analysis, which the field lacks (Simpson, 2010), and rigorous measurement of effects; to theoretical developments such as dropout models, and new concepts and definitions; to the development of research methods and instruments; and to the integration of the different themes into a robust theoretical and empirical corpus.

#### **1.4.4. Numerous Causal Factors and Lack of Unified Theories and Models**

The study of predictor variables of dropout was the only general trend found in the field: 77.5% of the studies selected were dedicated to researching a multiplicity of factors. As such our sample is in agreement with previous literature: student dropout is caused by a complex set of factors and is context specific; there is a lack of consensus regarding the number of, and what should be considered as, valuable predictor factors (Storrings, 2005). As a result, studies showed a lack of unified theories on dropout factors. The very complex nature of dropout phenomena renders the development of a unified theory or model almost impossible, or utopic (Kember, 1989).

More attention was given to course/program/institutional factors, and that trend should continue, for such variables are more amenable to interventions and change, as institutions have little influence on student factors. However, future studies ought to give more consideration to time-related factors (time management and availability, and procrastination). Reviewing the most common reasons for withdrawal, Ashby (2004) found that the most important one was difficulty in juggling studies, work, and life demands, and concluded that time is clearly a major issue for open university students. However, although time-related factors appear to be most important - especially for part-time, non-traditional students - they were not the main focus of

research in any of the papers studied. Future studies should also address the differences between undergraduate and graduate degrees, and the different open OHE models, as regards dropout phenomena.

Thirteen studies sought to produce predictive models, integrating a variety of factors, which is laudable. However, when the literature employs previous models, they are usually quite outdated. Tinto's (1975, 1993) social integration model is still the most used one, but it is not without its critics. It needs extensive remodeling to adapt to OHE, wherein social integration does not seem to be a crucial variable (Figueira, 2015), and should integrate faculty factors and other student factors. That illustrates what is perhaps one of the main problems in the field: the transference of (old) concepts and approaches from f2f literature and context to the very different context of OHE. Conventional definitions and approaches are much more difficult to apply to fully OHE, and that should always be considered. Therefore, future dropout research should try to develop more holistic and encompassing models which may guide more effective interventions.

#### **1.4.5. Findings: Five Years of Progress, and Now What?**

Future dropout research should pay special consideration to the factors that correlated the most with dropout: demographic characteristics, time- and financial-related issues, motivation, and student support. However, it is typical of dropout studies that while one research finds significant correlations, others do not; ideally, meta-analyses ought to be conducted to verify with more accuracy which factors are most important. As current interventions tend to reduce dropout by just a little or else have no effect, future strategies should address the factors mentioned and be tailored differently to undergraduate and graduate programs. New forms of intervention should also be tried. More studies on the evidence of intervention effectiveness with quantitative methods and large samples are also needed.

The field needs to develop new theories that are more adequate to the evolving landscape of OHE. New, more holistic frameworks to the main domains should be built, grounded on studies on definitions – differentiating clearly concepts such as dropout and withdrawal, and developing both situated and general definitions with precise terminology. Measuring dropout phenomena would benefit from consensual general definitions, making comparisons between different studies possible.

Regarding methods and instruments, the heavy reliance on learning analytics (which does not capture the students' context and experiences) should be complemented by more qualitative and mixed-method research. Future studies should also try to develop new standardized scales for the assessment of dropout proneness, persistence, and related factors. The field also needs further context-situated research comparing modes of delivery and dropout rates. It is not at all clear that online courses always present higher rates, and that is important for policy and the offer of more online (or blended) options.



#### 1.4.6. Limitations

This review may possibly have missed some relevant studies due to database selection, time constraints, and exclusion of studies that were not in English. Due to the nature of scoping reviews, breadth of analysis was emphasized rather than depth, and we did not assess the quality of research and evidence in depth.

### 1.5. Conclusion

This review mapped and synthesized the last five years of research in OHE dropout studies. As an overall conclusion, findings suggest that the field is complex, dynamic, and sort of chaotic. It seems to have changed little in the last 20 years. Storrington's (2005) conclusion is still valid: "research seems to be going in many different directions simultaneously while also producing a high number of contradictory reports" (p. 340). It appears as a newly developed field – still trying to adapt f2f models and theories to the specific context of OHE, while also developing new approaches. Therefore, many efforts are still needed to develop the field, which have been pointed here. Its main research gaps include theorization, precise definitions and measurement, new models, and a need for stronger evidence on the effectiveness of strategies and early interventions. However, possibly the field will remain as varied and complex as the phenomena it studies: after all, "[t]here is no simple formula that ensures student persistence" (Rovai, 2003, p.12), nor its understanding.

#### Acknowledgment

With the support of a doctoral grant from the Universitat Oberta de Catalunya.

### 1.6. References

#### \*Studies included in this scoping review

- Abbad, G., Carvalho, R. S., & Zerbini, T. (2006). Evasão em curso via internet: explorando variáveis explicativas. *RAE-Eletronica*, 5(2). <http://doi.org/10.1590/S1676-56482006000200008>
- \*Adams, F. (2017). *The impact of declining student persistence in distance learning on American college completion goals*. (Doctoral dissertation). Nova Southeastern University, Fort Lauderdale, FL, USA. Retrieved from <https://search.proquest.com/docview/2021741783>
- Ali, R., & Leeds, E. M. (2009). The impact of face-to-face orientation on online retention: A pilot study. *Online Journal of Distance Learning Administration*, 12(4), 1-11. Retrieved from <https://eric.ed.gov/?id=EJ869281>
- \*Ali, A., & Smith, D. (2015). Comparing social isolation effects on students attrition in online versus face-to-face courses in computer literacy. *Issues in Informing Science & Information Technology*, 12, 11–20. <http://doi.org/10.28945/2258>
- Aljohani, O. (2016). A comprehensive review of the major studies and theoretical models of student retention in higher education. *Higher Education Studies*, 6(2), 1-18. <http://doi.org/10.5539/hes.v6n2p1>

- \*Allen, J. S. (2017). *Online faculty behaviors that impact student persistence*. (Doctoral dissertation). San Diego State University, San Diego, USA. Retrieved from <https://search.proquest.com/docview/1983929966>
- \*Andrews, T., & Tynan, B. (2014). Successful online distance learners: An exploration of learner characteristics and patterns in online learning. In *Challenges for Research into Open & Distance Learning* (pp. 9-18). EDEN RW8 Conference Proceedings, Oxford. Retrieved from [http://www.eden-online.org/wp-content/uploads/2016/05/RW\\_2014\\_Oxford\\_Proceedings\\_NAP.pdf](http://www.eden-online.org/wp-content/uploads/2016/05/RW_2014_Oxford_Proceedings_NAP.pdf)
- Angelino, L. M., & Natvig, D. (2009). A conceptual model for engagement of the online learner. *Journal of Educators Online*, 6(1). Retrieved from <http://www.thejeo.com/Archives/Volume6Number1/Angelinoetalpaper.pdf>
- Angelino, L. M., Williams, F. K., & Natvig, D. (2007). Strategies to engage online students and reduce attrition rates. *Journal of Educators Online*, 4(2). Retrieved from <https://eric.ed.gov/?id=EJ907749>
- Arce, M. E., Crespo, B., & Míguez-Álvarez, C. (2015). Higher education drop-out in Spain—Particular case of universities in Galicia. *International Education Studies*, 8, 247–264. <https://doi.org/10.5539/ies.v8n5p247>
- \*Arifin, M. H. (2016). Exploring self-motivation in contributing student persistence in the Indonesia Open University. *9th Annual International Conference of Education, Research and Innovation (ICERI)*. <http://doi.org/10.21125/iceri.2016.1104>
- \*Arifin, M. H. (2018). The role of student support services in enhancing student persistence in the Open University context: Lesson from Indonesia Open University. *Turkish Online Journal of Distance Education*, 19(3), 156–168. Retrieved from <https://eric.ed.gov/?id=EJ1183333>
- Arksey, H. & O'Malley, L. (2005). Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology*, 8(1),19-32. <http://doi.org/10.1080/1364557032000119616>
- Armstrong, R., Hall, B.J., Doyle, J., & Waters, E. (2011). Cochrane Update. 'Scoping the scope' of a Cochrane review. *J Public Health (Oxf)*, 33(1), 147-50. <http://doi.org/10.1093/pubmed/fdr015>
- \*Armstrong, S. N., Early, J. O., Burcin, M. M., Bolin, K., Holland, N., & No, S. (2018). New media tools impact on online, health science students' academic persistence and support: Lessons learned from two pilot studies. *TechTrends*, 62(3), 266–275. <http://doi.org/10.1007/s11528-018-0261-1>
- Aromataris, E. M. Z. (2017). Joanna Briggs Institute Reviewer's manual [Internet]. Joanna Briggs Institute, Adelaide, Australia. Retrieved from <https://reviewersmanual.joannabriggs.org/>
- Ashby, A. (2004). Monitoring student retention in the Open University: Definition, measurement, interpretation and action. *Open Learning*, 19(1), 65–77. <http://doi.org/10.1080/0268051042000177854>
- \*Banks, K. L. (2017). *Identifying online graduate learners' perceived barriers to their academic success: A modified Delphi study*. (Doctoral dissertation). Northcentral University, San Diego, CA, USA. Retrieved from <https://search.proquest.com/pagepdf/1960606550>

- Banks, K. L. (2018). Identifying online graduate learners' perceived barriers to their academic success: A modified Delphi study. In A. B. Scheg & M. Shaw (Eds.), *Fostering effective student communication in online graduate courses* (pp. 193-223). Hershey, PA: IGI Global.
- Barnett, A. E. (2011). Validation experience and persistence among community college students. *The Review of Higher Education*, 34, 193-230.  
<http://doi.org/10.1353/rhe.2010.0019>
- \*Bawa, P. (2016). Retention in online courses: Exploring issues and solutions - a literature review. *SAGE Open*, 6(1). <http://doi.org/10.1177/2158244015621777>
- Bean, J., & Metzner, B. (1985). A conceptual model of non-traditional undergraduate student attrition. *Review of Educational Research*, 55(4), 485-540.  
<http://doi.org/10.3102/00346543055004485>
- Berge, Z. L., & Huang, Y. P. (2004). A model for sustainable student retention: A holistic perspective on the student dropout problem with special attention to e-Learning. *DEOSNEWS*, 13(5). <http://doi.org/10.1.1.129.1495>
- Berger, J.B., Ramirez, G.B., & Lyon, S. (2012). Past to present: A historical look at retention. In A. Seidman, (Ed.), *College student retention: Formula for student success* (pp. 7-34). Lanham, MD: Rowman & Littlefield.
- \*Bettinger, E., Doss, C., Loeb, S., Rogers, A., & Taylor, E. (2017). The effects of class size in online college courses: Experimental evidence. *Economics of Education Review*, 58, 68–85. <http://doi.org/10.1016/j.econedurev.2017.03.006>
- \*Bianchi-Laubsch, D. A. (2014). *An examination of the relationship between online learning course delivery method, sense of community, and learner retention*. (Doctoral dissertation). Northcentral University, San Diego, CA, USA. Retrieved from <https://search.proquest.com/docview/1530298357>
- \*Bissonette, D. (2017). The promise and perils of asynchronous learning: How faculty, students, and administrators can collaboratively increase retention and satisfaction in the online classroom. *Journal of Pedagogic Development*, 7(3), 13–23. Retrieved from <http://uobrep.openrepository.com/uobrep/handle/10547/622376>
- \*Bornschlegl, M., & Cashman, D. (2018). Improving distance student retention through satisfaction and authentic experiences. *International Journal of Online Pedagogy and Course Design*, 8(3), 60–77. <http://doi.org/10.4018/IJOPCD.2018070105>
- \*Boton, E. C., & Gregory, S. (2015). Minimizing attrition in online degree courses. *Journal of Educators Online*, 12(1), 62–90. <http://doi.org/10.4018/jthi.2009062503>
- Botsch, R. E., & Botsch, C. S. (2012). Audiences and outcomes in online and traditional American government classes revisited. *PS: Political Science and Politics*, 45(3), 493-500. <http://doi.org/10.1017/S104909651200042X>
- \*Brock, K. R. (2014). *Identifying the factors that predict degree completion for entirely online community college students*. (Doctoral dissertation). Capella University, Minneapolis, MN, USA. Retrieved from <https://search.proquest.com/docview/1513243695>
- \*Budash, D. E. (2015). *Understanding persistence in an online Master's degree program: A single case study of learners and faculty*. (Doctoral dissertation). Northcentral

- University, San Diego, CA, USA. Retrieved from <https://search.proquest.com/docview/1669915980>
- \*Burgess, E. O. (2017). *Attrition and dropouts in the e-learning environment: Improving student success and retention*. (Doctoral dissertation). Northcentral University, San Diego, CA, USA. Retrieved from <https://search.proquest.com/docview/1908972802>
- \*Burgos, C., Campanario, M. L., Peña, D. de la, Lara, J. A., Lizcano, D., & Martínez, M. A. (2018). Data mining for modeling students' performance: A tutoring action plan to prevent academic dropout. *Computers and Electrical Engineering*, 66, 541–556. <http://doi.org/10.1016/j.compeleceng.2017.03.005>
- \*Burmester, L. M., Metscher, D. S., & Smith, M. L. (2014). Analysis of contributing factors to high attrition rates in online educational programs. *International Journal of Professional Aviation Training & Testing Research*, 6(1), 1–17. <http://doi.org/10.1.1.1007.8651>
- Burns, M. (2013). Staying or leaving? Designing for persistence in an online educator training programme in Indonesia. *Open Learning*, 28(2), 141-152. <http://doi.org/10.1080/02680513.2013.851023>
- \*Calvert, C. E. (2014). Developing a model and applications for probabilities of student success: A case study of predictive analytics. *Open Learning: The Journal of Open, Distance and e-Learning*, 29(2), 160–173. <http://doi.org/10.1080/02680513.2014.931805>
- \*Cambuzzi, W., Rigo, S. J., & Barbosa, J. L. V. (2015). Dropout prediction and reduction in distance education courses with the learning analytics multitrail approach. *Journal of Universal Computer Science*, 21(1), 23–47. <http://doi.org/10.3217/jucs-021-01-0023>
- Castles, J. (2004). Persistence and the adult learner: Factors affecting persistence in Open University students. *Active Learning in Higher Education*, 5(2), 166–179. <http://doi.org/10.1177/146978740404381>
- \*Chavez-Toivanen, M. (2017). *The effect of online learning on degree completion for minority students*. (Doctoral dissertation). New Mexico State University, Las Cruces, NM, USA. Retrieved from <https://search.proquest.com/docview/2001149949>
- \*Chiyaka, E. T., Sithole, A., Manyanga, F., Mccarthy, P., & Bucklein, B. K. (2016). Institutional characteristics and student retention: What integrated postsecondary education data reveals about online learning. *Online Journal of Distance Learning Administration*, XIX(2), 1–10. Retrieved from <https://eric.ed.gov/?id=EJ1106655>
- Choi, H. (2016, November). *Theoretical framework for adult dropout in a cyber university*. Paper presented at Online Learning Consortium (OLC) Accelerate 2016, Orlando, FL.
- \*Choi, H. J., & Kim, B. U. (2017). Factors affecting adult student dropout rates in the Korean Cyber-University degree programs. *Journal of Continuing Higher Education*, 1–12. <http://doi.org/10.1080/07377363.2017.1400357>
- \*Choi, H. J., & Park, J. H. (2018). Testing a path-analytic model of adult dropout in online degree programs. *Computers and Education*, 116, 130–138. <http://doi.org/10.1016/j.compedu.2017.09.005>
- \*Cochran, J. D., Campbell, S. M., Baker, H. M., & Leeds, E. M. (2014). The role of student characteristics in predicting retention in online courses. *Research in Higher Education*, 55(1), 27–48. <http://doi.org/10.1007/s11162-013-9305-8>

- Conceição, S., & Lehman, R. (2012). Persistence model for online student retention. In J. Herrington et al. (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia, and Telecommunications 2013* (pp. 1913-1922). Chesapeake, VA: AACE. Retrieved from <http://www.editlib.org/p/112230>
- \*Croxtton, R. A. (2014). The role of interactivity in student satisfaction and persistence in online learning. *MERLOT Journal of Online Learning and Teaching*, 10(2), 314–325. <http://doi.org/10.1016/j.agwat.2006.06.011>
- Cuseo, J. B., Fecas, V. S., & Thompson, A. (2010). *Thriving in college and beyond: Research-based strategies for academic success & personal development* (2nd ed.). Dubuque, IA: Kendall Hunt.
- Daudt, H.M.L., van Mossel, C., & Scott, S. J. (2013). Enhancing the scoping study methodology: A large, inter-professional team's experience with Arksey and O'Malley's framework. *BMC Medical Research Methodology*, 13(1). <http://doi.org/10.1186/1471-2288-13-48>
- \*Deschacht, N., & Goeman, K. (2015). The effect of blended learning on course persistence and performance of adult learners: A difference-in-differences analysis. *Computers and Education*, 87, 83–89. <http://doi.org/10.1016/j.compedu.2015.03.020>
- \*Dews-Farrar, V. (2018). *Students' reflections and experiences in online learning: A qualitative descriptive inquiry of persistence*. (Doctoral dissertation). Grand Canyon University, Arizona, USA. Retrieved from <https://search.proquest.com/docview/2036952458>
- \*Dexter, P. D. (2015). *The influence of engagement upon success and persistence of online undergraduates*. (Doctoral dissertation). University of Southern Maine, Portland, ME, USA. Retrieved from <https://search.proquest.com/docview/1728895868>
- \*Donnelly, W. (2014). *A phenomenological investigation of adult student attrition in community college online courses*. (Doctoral dissertation). University of Phoenix, Phoenix, AZ, USA. Retrieved from <https://search.proquest.com/docview/1634244043>
- \*Duckett, Y. A. (2014). *Motivated to finish: A phenomenological study on persistence to graduation in asynchronous doctoral programs*. (Doctoral dissertation). Grand Canyon University, Arizona, USA. Retrieved from <https://search.proquest.com/docview/1615359748>
- Escobedo, G. (2007). A retention/persistence intervention model: Improving success across cultures. *Journal of Developmental Education*, 31(1), 12-37. Retrieved from <https://www.questia.com/library/journal/1P3-1447133151/a-retention-persistence-intervention-model-improving>
- \*Estes, J. S. (2016). The pivotal role of faculty in online student engagement and retention. In L. Kyei-Blankson, J. Blankson, E. Ntuli, & C. Agyeman (Eds.), *Handbook of research on strategic management of interaction, presence, and participation in online courses* (pp. 65-87). Hershey, PA: IGI Global. <http://doi.org/10.4018/978-1-4666-9582-5.ch003>
- \*Faulconer, E. K., Griffith, J., Wood, B., Acharyya, S., & Roberts, D. (2018). A comparison of online, video synchronous, and traditional learning modes for an introductory undergraduate Physics course. *Journal of Science Education and Technology*, 27(5), 404–411. <http://doi.org/10.1007/s10956-018-9732-6>



- \*Figueira, R. J. (2015). *The applicability of Tinto's model of student retention in online learning: A faculty perspective*. (Doctoral dissertation). Wilmington University, Georgetown, DE, USA. Retrieved from <https://search.proquest.com/docview/1754646297>
- Fowler, M., & Luna, G. (2009). High school and college partnerships: Credit-based transition programs. *American Secondary Education*, 38(1), 62-76. Retrieved from <https://www.jstor.org/stable/41406067>
- \*Franklin, M. (2015). Keys to success in the online accounting classroom to maximize student retention. *Journal of Higher Education Theory and Practice*, 15(5), 36–45. Retrieved from <https://search.proquest.com/docview/1749280572>
- \*Franko, D. L. (2015). *Increasing online academic success and persistence in higher education using coaching*. (Doctoral dissertation). Northcentral University, San Diego, CA, USA. Retrieved from <https://search.proquest.com/docview/1666807845>
- \*Fraser, J., Fahlman, D. (Willy), Arscott, J., & Guillot, I. (2018). Pilot testing for feasibility in a study of student retention and attrition in online undergraduate programs. *The International Review of Research in Open and Distributed Learning*, 19(1). <http://doi.org/10.19173/irrodl.v19i1.3326>
- \*Gangaram, J. (2015). *Blended and online student performance and persistence: A comparative study*. (Doctoral dissertation). Northcentral University, San Diego, CA, USA. Retrieved from <https://search.proquest.com/docview/1660971334>
- \*Gardner, M. L. (2016). *A professional development certification program for instructors teaching in the online environment and student completion and success rates at a Midwestern community college: An ex post facto study*. (Doctoral dissertation). University of Nebraska, Lincoln, NE, USA. Retrieved from <https://search.proquest.com/docview/1861717340>
- \*Garratt-Reed, D., Roberts, L. D., & Heritage, B. (2016). Grades, student satisfaction and retention in online and face-to-face introductory psychology units: A test of equivalency theory. *Frontiers in Psychology*, 7, 1–10. <http://doi.org/10.3389/fpsyg.2016.00673>
- Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *Internet and Higher Education*, 2(2), 87-105. [http://doi.org/10.1016/S1096-7516\(00\)00016-6](http://doi.org/10.1016/S1096-7516(00)00016-6)
- \*Gaytan, J. (2015). Comparing faculty and student perceptions regarding factors that affect student retention in online education. *American Journal of Distance Education*, 29(1), 56–66. <http://doi.org/10.1080/08923647.2015.994365>
- \*Gazza, E. A., & Hunker, D. F. (2014). Facilitating student retention in online graduate nursing education programs: A review of the literature. *Nurse Education Today*, 34(7), 1125–1129. <http://doi.org/10.1016/j.nedt.2014.01.010>
- \*Giannaris, S. B. (2016). *Nonnative English language speakers' retention in online Doctoral programs: A case study*. (Doctoral dissertation). Keiser University, Fort Lauderdale, FL, USA. Retrieved from <https://search.proquest.com/docview/1785396227>
- \*Glazer, H. R., & Murphy, J. A. (2015). Optimizing success: A model for persistence in online education. *American Journal of Distance Education*, 29(2), 135–144. <http://doi.org/10.1080/08923647.2015.1023093>

- \*Glazier, R. A. (2016). Building rapport to improve retention and success in online classes. *Journal of Political Science Education*, 12(4), 437–456. <http://doi.org/10.1080/15512169.2016.1155994>
- \*González, E. (2015). Motivation and retention: A comparison between fully online students and on-campus students taking online courses. *The Online Journal of Distance Education and E-Learning*, 3(3), 33–48. Retrieved from <https://tojdel.net/journals/tojdel/articles/v03i03/v03i03-06.pdf>
- Gough, D., & Thomas, J. (2016). Commonality and diversity in reviews. In D. Gough, S. Oliver, & J. Thomas (Eds.), *An introduction to systematic reviews* (1st ed.) (pp. 35-65). London: SAGE.
- \*Grau-Valldosera, J., & Minguillón, J. (2014). Rethinking dropout in online higher education: The case of the Universitat Oberta de Catalunya. *International Review of Research in Open and Distance Learning*, 27(3), 307-323. <http://dx.doi.org/10.19173/irrodl.v15i1.1628>
- \*Grau-Valldosera, J., Minguillón, J., & Blasco-Moreno, A. (2018). Returning after taking a break in online distance higher education: from intention to effective re-enrollment. *Interactive Learning Environments*. <http://doi.org/10.1080/10494820.2018.1470986>
- \*Greenland, S. J., & Moore, C. (2014). Patterns of online student enrolment and attrition in Australian open access online education: a preliminary case study. *Open Praxis*, 6(1), 45–54. <http://doi.org/10.5944/openpraxis.6.1.95>
- \*Gregori, P., Martínez, V., & Moyano-Fernández, J. J. (2018). Basic actions to reduce dropout rates in distance learning. *Evaluation and Program Planning*, 66, 48–52. <http://doi.org/10.1016/j.evalprogplan.2017.10.004>
- \*Hachey, A. C., Wladis, C. W., & Conway, K. M. (2014). Do prior online course outcomes provide more information than G.P.A. alone in predicting subsequent online course grades and retention? An observational study at an urban community college. *Computers and Education*, 72, 59–67. <http://doi.org/10.1016/j.compedu.2013.10.012>
- \*Hannah, M. B. (2017). *Experiences of learning online among adult learners and the relationship engaging activities have on satisfaction and retention*. (Doctoral dissertation). Northcentral University, San Diego, CA, USA. Retrieved from <https://search.proquest.com/docview/1883861966>
- \*Harris, K. K. (2015). *An examination of the relationship of course evaluations to student retention and student success in the community college online classroom*. (Doctoral dissertation). Mississippi State University, Mississippi State, MS, USA. Retrieved from <https://search.proquest.com/docview/1747435187>
- Hart, C. (2012). Factors associated with student persistence in an online program of study: A review of the literature. *Journal of Interactive Online Learning*, 11(1), 19-42. Retrieved from <https://www.ncolr.org/jiol/issues/pdf/11.1.2.pdf>
- \*Hart, C. (2014). Development of a persistence scale for online education in Nursing. *Nursing Education Perspectives*, 35(3), 150–156. <http://doi.org/10.5480/12-993.1>
- Haydarov, R., Moxley, V., & Anderson, D. (2012). Counting chickens before they are hatched: An examination of student retention, graduation, attrition, and dropout measurement validity in an online master’s environment. *Journal of College Student*

- Retention: Research, Theory and Practice*, 14(4), 429-449.  
<http://doi.org/10.2190/CS.14.4a>
- \*Heald, S. M. (2018). *Exploring the implementation of synchronous student support sessions and student retention in an online course*. (Doctoral dissertation). University of the Rockies, Denver, CO, USA. Retrieved from  
<https://search.proquest.com/docview/2075951418>
- Heberle, H., Meirelles, G. V., da Silva, F. R., Telles, G. P., & Minghim, R. (2015). InteractiVenn: a web-based tool for the analysis of sets through Venn diagrams. *BMC bioinformatics*, 16(1), 169. <http://doi.org/10.1186/s12859-015-0611-3>
- \*Heidrich, L., Victória Barbosa, J. L., Cambruzzi, W., Rigo, S. J., Martins, M. G., & dos Santos, R. B. S. (2018). Diagnosis of learner dropout based on learning styles for online distance learning. *Telematics and Informatics*, 35(6), 1593–1606.  
<http://doi.org/10.1016/j.tele.2018.04.007>
- Hewitt, L., & Rose-Adams, J. (2012). What ‘retention’ means to me: The position of the adult learner in student retention. *Widening Participation & Lifelong Learning*, 1(4), 146-164. <http://doi.org/10.5456/WPLL.14.S.146>
- \*Hilton III, J., Fischer, L., Wiley, D., & William, L. (2016). Maintaining momentum toward graduation: OER and the course throughput rate. *The International Review of Research in Open and Distributed Learning*, 17(6). <http://doi.org/10.19173/irrodl.v17i6.2686>
- Holder, B. (2007). An investigation of hope, academics, environment, and motivation as predictors of persistence in higher education online programs. *Internet and Higher Education*, 10(4), 245–260. <http://doi.org/10.1016/j.iheduc.2007.08.002>
- Hongwei, Y. (2015). Student retention at two-year community colleges: A structural equation modeling approach. *International Journal of Continuing Education and Lifelong Learning*, 8(1), 85-101. Retrieved from <http://hdl.voced.edu.au/10707/418486>
- \*Huggins, J. A. (2016). *Exploring at-risk students’ barriers and supports in online learning*. (Doctoral dissertation). Nipissing University (Canada). Retrieved from  
<https://search.proquest.com/docview/1927182117>
- \*Huntington-Klein, N., Cowan, J., & Goldhaber, D. (2017). Selection into online community college courses and their effects on persistence. *Research in Higher Education*, 58(3), 244–269. <http://doi.org/10.1007/s11162-016-9425-z>
- \*Inkelaar, T., & Simpson, O. (2015). Challenging the ‘distance education deficit’ through ‘motivational emails.’ *Open Learning*, 30(2), 152–163.  
<http://doi.org/10.1080/02680513.2015.1055718>
- \*James, S., Swan, K., & Daston, C. (2016). Retention, progression and the taking of online courses. *Journal of Asynchronous Learning Network*, 20(2), 75–96.  
<http://doi.org/10.2147/TACG.S78241>
- \*Johnson, A. B. (2017). *Military-connected students in online learning programs: students’ perceptions of personal academic perseverance*. (Doctoral dissertation). Drexel University, Philadelphia, USA. Retrieved from  
<https://search.proquest.com/docview/2008188469>
- \*Johnson, C. (2015). *Understanding doctoral success factors in online education programs*. (Doctoral dissertation). Walden University, Minneapolis, MN, USA. Retrieved from  
<https://search.proquest.com/docview/2008188469>



- Kauffmann, H. (2015). A review of predictive factors of student success in and satisfaction with online learning. *Research in Learning Technology*, 23: 26507. <http://dx.doi.org/10.3402/rlt.v23.26507>
- Kember, D. (1989). A longitudinal-process model of drop-out from distance education. *The Journal of Higher Education*, 60(3), 278-301. <http://doi.org/10.1080/00221546.1989.11775036>
- Kember, D. (1995). *Open learning courses for adults: A model of student progress*. Englewood Cliffs, NJ: Educational Technology Publications.
- Kemp, W. C. (2002). Persistence of adult learners in distance education. *The American Journal of Distance Education*, 16(2), 65-81. Retrieved from <http://www.icde.org/American+Journal+of+Distance+Education.9UFRvWWo.ips>
- Khalil, H., Peters, M., Godfrey, C.M., McInerney, P., Soares, C.B., & Parker, D. (2016). An evidence-based approach to scoping reviews. *Worldviews on Evidence-Based Nursing*, 3(2), 118-123. <http://doi.org/10.1111/wvn.12144>
- \*Kilburn, A., Kilburn, B., & Cates, T. (2014). Drivers of student retention: System availability, privacy, value and loyalty in online higher education. *Academy of Educational Leadership Journal*, 18(4), 1–15. Retrieved from <https://search.proquest.com/pagepdf/1645851174>
- \*Knestrick, J. M., Wilkinson, M. R., Pellathy, T. P., Lange-Kessler, J., Katz, R., & Compton, P. (2016). Predictors of retention of students in an online nurse practitioner program. *Journal for Nurse Practitioners*, 12(9), 635–640. <http://doi.org/10.1016/j.nurpra.2016.06.011>
- Koehnke, P. J. (2013). *The impact of an online orientation to improve community college student retention in online courses: An action research study* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3568654)
- Kyger, J. W. (2008). *A study of synchronous and asynchronous learning environments in an online course and their effect on retention rates* (Doctoral dissertation). Retrieved from Dissertations & Theses: Full Text database. (Publication No. AAT3363962)
- \*Laing, C. L., & Laing, G. K. (2015). A conceptual framework for evaluating attrition in online courses. *E-Journal of Business Education & Scholarship of Teaching*, 9(2), 39–55. [http://doi.org/10.1007/978-3-662-44611-9\\_6](http://doi.org/10.1007/978-3-662-44611-9_6)
- \*Lakhal, S., & Bazinet, N. (2015). Technological factors explaining student dropout from online courses in higher education: a review. In *Proceedings of EdMedia 2015-World Conference on Educational Media and Technology* (pp. 1806–1811). Retrieved from <https://www.learntechlib.org/p/151456>
- \*Lee, S. J., Lee, H., & Kim, T. T. (2018). A study on the instructor role in dealing with mixed contents: How it affects learner satisfaction and retention in e-learning. *Sustainability (Switzerland)*, 10(3). <http://doi.org/10.3390/su10030850>
- Lee, Y., & Choi, J. (2011). A review of online course dropout research: Implications for practice and future research. *Educational Technology Research and Development*, 59(5), 593–618. <http://doi.org/10.1007/s11423-010-9177-y>
- Lee, Y., Choi, J., & Kim, T. (2013). Discriminating factors between completers of and dropouts from online learning courses. *British Journal of Educational Technology*, 44(2), 328-337. <http://doi.org/10.1111/j.1467-8535.2012.01306.x>

- \*Lehan, T. J., Hussey, H. D., & Shriner, M. (2018). The influence of academic coaching on persistence in online graduate students. *Mentoring & Tutoring: Partnership in Learning*, 1–16. <http://doi.org/10.1080/13611267.2018.1511949>
- Leung, L., & Chen, C. (2018). A review of media addiction research from 1991 to 2016. *Social Science Computer Review*. <http://doi.org/10.1177/0894439318791770>
- Levac, D., Colquhoun, H., & O'Brien, K. K. (2010). Scoping studies: advancing the methodology. *Implement Sci*, 5(1). <http://doi.org/10.1186/1748-5908-5-69>
- Levitz, R. S., Noel, L., & Richter, B. J. (1999). Strategic moves for retention success. *New directions for higher education*, 1999(108), 31-49. Retrieved from <https://eric.ed.gov/?id=EJ601663>
- \*Levy, Y., & Ramim, M. M. (2017). The e-learning skills gap study: Initial results of skills desired for persistence and success in online engineering and computing courses. In *Proceedings of the 12th Chais Conference for the Study of Innovation and Learning Technologies: Learning in the Technological Era*, 57E–68E. Retrieved from [http://www.openu.ac.il/innovation/chais2017/a1\\_2.pdf](http://www.openu.ac.il/innovation/chais2017/a1_2.pdf)
- Libby, M., & Catherine, F. (2008). Best practices in predicting and encouraging student persistence and achievement online. *Journal of College Student Retention: Research, Theory & Practice*, 10(1), 55-64. <http://doi.org/10.2190/CS.10.1.e>
- \*Lim, J. M. (2016). Predicting successful completion using student delay indicators in undergraduate self-paced online courses. *Distance Education*, 37(3), 317–332. <http://doi.org/10.1080/01587919.2016.1233050>
- \*Lowe-Madkins, M. (2016). *The influence of building social presence and sense of community in online learning: A meta-analysis on student satisfaction and retention*. (Doctoral dissertation). Northern Illinois University, DeKalb, IL, USA. Retrieved from <https://search.proquest.com/docview/1824361664>
- \*Lucey, K. (2018). *The effect of motivation on student persistence in online higher education: A phenomenological study of how adult learners experience motivation in a web-based distance learning environment*. (Doctoral dissertation). Duquesne University, Pittsburgh, PA, USA. Retrieved from <https://dsc.duq.edu/etd/1449>
- \*Macy, T. V. (2015). *The effect of web-based instruction on retention of non-traditional students in a rural comprehensive university*. (Doctoral dissertation). Eastern Kentucky University, Kentucky, USA. Retrieved from <https://search.proquest.com/docview/1969128804>
- \*Mahmodi, M., & Ebrahimzade, I. (2015). The analysis of Iranian students' persistence in online education. *International Review of Research in Open and Distance Learning*, 16(1), 98–119. <http://doi.org/10.19173/irrodl.v16i1.1982>
- \*Marshall, L. (2017). *Impact of online orientation for first-time online students on retention, academic success, and persistence*. (Doctoral dissertation). Walden University, Minneapolis, MN, USA. Retrieved from <https://search.proquest.com/docview/1969128804>
- Martinez, M. (2003). High attrition rate in e-learning: Challenges, predictors, and solutions. *The eLearning Developers' Journal*, 1-7. Retrieved from <https://www.elearningguild.com/pdf/2/071403MGT-L.pdf>

- \*Maye, J. (2015). *How technology challenges contribute to students' dropout from first-time online undergraduate courses: A multiple case study*. (Doctoral dissertation). Northcentral University, San Diego, CA, USA. Retrieved from <https://search.proquest.com/docview/1666454847>
- \*McClelland, T. J. (2014). *Why do they leave? An exploration of situational, dispositional, institutional, technological, and epistemological factors on undergraduate student withdrawal from online studies at an institute of technology in New Zealand*. (Doctoral dissertation). Northeastern University, Boston, MA, USA. Retrieved from <https://repository.library.northeastern.edu/files/neu:349649/fulltext.pdf>
- \*Miner, A. G. (2014). *The effect of quality matters certification on student satisfaction, grades, and retention at FIU online*. (Doctoral dissertation). Morgan State University, Baltimore, MA, USA. Retrieved from <https://search.proquest.com/docview/1552467109>
- \*Mitchell, P. (2015). *The relationship between sense of community, course performance, and persistence in community college distance learning courses*. (Doctoral dissertation). Northern Illinois University, DeKalb, IL, USA. Retrieved from <https://search.proquest.com/docview/1762585062>
- Moher, D., Liberate, A., Tetzlaff, J., Altman, D., & The PRISMA Group (2009). Preferred reporting items for Systematic Reviews and Meta-Analyses: The PRISMA statement. *PLoS Med.*, 6(7): e1000097. <http://doi.org/10.1371/journal.pmed.1000097>
- \*Moore, C., & Greenland, S. (2017). Employment-driven online student attrition and the assessment policy divide: An Australian open-access higher education perspective. *Journal of Open, Flexible and Distance Learning*, 21(1), 52–62. Retrieved from <https://eric.ed.gov/?id=EJ1148193>
- \*Moore, D. (2014). *An investigation of the attrition of African-American students in an online undergraduate program*. (Doctoral dissertation). Nova Southeastern University, Fort Lauderdale, FL, USA. Retrieved from <https://search.proquest.com/docview/1558181109>
- \*Murphy, C. A., & Stewart, J. C. (2017). On-campus students taking online courses: Factors associated with unsuccessful course completion. *Internet and Higher Education*, 34, 1–9. <http://doi.org/10.1016/j.iheduc.2017.03.001>
- \*Nadasen, D. (2016). *Innovations and student success in online learning: A systematic review of how innovations affect student retention*. (Doctoral dissertation). University of Maryland University College, Maryland, MD, USA. Retrieved from <https://search.proquest.com/docview/1908477509>
- National Center for Educational Statistics (NCES). (2008). *Digest of Education Statistics: 2008*. Retrieved from <http://nces.ed.gov/>
- \*Nuesell, L. M. (2016). *Advancing student success and college completion for nontraditional students: An examination of distance education participation and degree attainment*. (Doctoral dissertation). East Carolina University, Greenville, NC, USA. Retrieved from <https://search.proquest.com/docview/1868507639>
- \*O'Shea, S., Stone, C., & Delahunty, J. (2015). "I 'feel' like I am at university even though I am online." Exploring how students narrate their engagement with higher education institutions in an online learning environment. *Distance Education*, 36(1), 41-58. <http://doi.org/10.1080/01587919.2015.1019970>

- Park, J., & Choi, H. (2009). Factors influencing adult learners' decision to drop out or persist in online learning. *Educational Technology & Society*, 12(4), 207-217. Retrieved from <https://www.jstor.org/stable/jeductechsoci.12.4.207>
- Pascarella, E. & Terenzini, P. (2005). *How college affects students* (Vol. 2). San Francisco: Jossey-Bass.
- Patterson, B., & McFadden, C. (2009). Attrition in online and campus degree programs. *Online Journal of Distance Learning Administration*, 12(2). Retrieved from <https://www.westga.edu/~distance/ojdla/summer122/patterson112.html>
- \*Pattison, A. B. (2017). *An exploratory study of the relationship between faculty social presence and online graduate student achievement, satisfaction, and persistence*. (Doctoral dissertation). Grand Canyon University, Arizona, USA. Retrieved from <https://search.proquest.com/docview/1874562951>
- Peters, M.D.J., Godfrey, C., McInerney, P., Baldini Soares, C., Khalil, H., & Parker, D. (2017). Scoping reviews. In E. Aromataris & Z. Munn (Eds.), *Joanna Briggs Institute Reviewer's Manual* (Chapter 11). The Joanna Briggs Institute. Retrieved from <https://reviewersmanual.joannabriggs.org/>
- \*Pinchbeck, J., & Heaney, C. (2017). Case report: The impact of a resubmission intervention on level 1 distance learning students. *Open Learning*, 32(3), 236–242. <http://doi.org/10.1080/02680513.2017.1348290>
- \*Poll, K., Widen, J., & Weller, S. (2014). Six instructional best practices for online engagement and retention. *Journal of Online Doctoral Education*, 1(1), 56-72. Retrieved from [https://ecommons.luc.edu/cgi/viewcontent.cgi?article=1030&context=english\\_facpubs](https://ecommons.luc.edu/cgi/viewcontent.cgi?article=1030&context=english_facpubs)
- \*Rashid, M. M., Jahan, M., Islam, A., & Ratna, M. M. (2015). Student enrollment and dropout: An evaluation study of DCSA program at Bangladesh Open University. *International Review of Research in Open and Distance Learning*, 16(4), 18–32. <http://doi.org/10.19173/irrodl.v16i4.2157>
- Reason, R. D. (2009). An examination of persistence research through the lens of a comprehensive conceptual framework. *Journal of College Student Development*, 50, 659-682. <http://doi.org/10.1353/csd.0.0098>
- \*Robichaud, W. (2016). Orientation programs to increase retention in online community college courses. *Distance Learning*, 13(2), 57-64. Retrieved from <https://search.proquest.com/docview/1822357191>
- \*Rockinson-Szapkiw, A. J., Spaulding, L. S., & Spaulding, M. T. (2016). Identifying significant integration and institutional factors that predict online doctoral persistence. *The Internet and Higher Education*, 31, 101–112. <http://doi.org/10.1016/j.iheduc.2016.07.003>
- \*Rodríguez-Ardura, I., & Meseguer-Artola, A. (2016a). E-learning continuance: The impact of interactivity and the mediating role of imagery, presence and flow. *Information and Management*, 53(4), 504–516. <http://doi.org/10.1016/j.im.2015.11.005>
- \*Rodríguez-Ardura, I., & Meseguer-Artola, A. (2016b). What leads people to keep on e-learning? An empirical analysis of users' experiences and their effects on continuance intention. *Interactive Learning Environments*, 24(6), 1030–1053. <http://doi.org/10.1080/10494820.2014.926275>

- \*Rogers, S. R. (2018). *Nothing left unfinished: A transcendental phenomenology on the persistence of black women in distance education doctoral programs*. (Doctoral dissertation). Liberty University, Lynchburg, VA, USA. Retrieved from <https://search.proquest.com/docview/2124411831>
- Rovai, A. P. (2003). In search of higher persistence rates in distance education online programs. *Internet and Higher Education*, 6(1), 1-16. [http://doi.org/10.1016/S1096-7516\(02\)00158-6](http://doi.org/10.1016/S1096-7516(02)00158-6)
- \*Russo-Gleicher, R. J. (2014). Improving student retention in online college classes: Qualitative insights from faculty. *Journal of College Student Retention: Research, Theory & Practice*, 16(2), 239–260. <http://doi.org/10.2190/cs.16.2.e>
- Rust, D. Z. (2006). *Examining interaction in online courses in relation to student performance and course retention* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3211923)
- \*Sánchez-Elvira Paniagua, A., & Simpson, O. (2018). Developing student support for open and distance learning: The EMPOWER Project. *Journal of Interactive Media in Education*, 2018(1). <http://doi.org/10.5334/jime.470>
- \*Sanz, R. A., Vírveda, J. A. V., García, R. M., & Arias, J. G. (2018). Innovation in the university: Perception, monitoring and satisfaction. *IEEE Revista Iberoamericana de Tecnologías del Aprendizaje*, 13(3), 111–118. <http://doi.org/10.1109/RITA.2018.2862721>
- \*Scharf, M. T. (2015). *Comparing student cumulative course grades, attrition, and satisfaction in traditional and virtual classroom environments*. (Doctoral dissertation). Northcentral University, San Diego, CA, USA. Retrieved from <http://search.proquest.com/docview/1713690470>
- \*Seabra, F., Henriques, S., Cardoso, T., Barros, D., & Goulão, M. (2018). E-learning in higher education: Academic factors for student permanence. In U. M. Azeiteiro, W. L. Filho, & L. Aires (Eds.), *Climate literacy and innovations in climate change education* (pp. 359-373). Switzerland: Springer.
- Seidman, A. (Ed.). (2005). *College student retention: Formula for student success*. Westport, CT: ACE/Praeger.
- \*Shaw, M., Burrus, S., & Ferguson, K. (2016). Factors that influence student attrition in online courses. *Online Journal of Distance Learning Administration*, 19(3), 211-217. <http://doi.org/10.2307/2369245>
- \*Shea, P., & Bidjerano, T. (2014). Does online learning impede degree completion? A national study of community college students. *Computers and Education*, 75, 103–111. <http://doi.org/10.1016/j.compedu.2014.02.009>
- \*Shea, P., & Bidjerano, T. (2016). A national study of differences between online and classroom-only community college students in time to first associate degree attainment, transfer, and dropout. *Journal of Asynchronous Learning Network*, 20(3), 14–15. <http://doi.org/10.4103/0971-4065.59335>
- \*Shea, P., & Bidjerano, T. (2018). Online course enrollment in community college and degree completion: The tipping point. *International Review of Research in Open and Distance Learning*, 19(2), 282–293. <http://doi.org/10.19173/irrodl.v19i2.3460>



- \*Shefsky, E. (2014). *Online university stop-out correlations: A quantitative parametric study investigating Master's level graduate student demographic factors impacting retention behavior*. (Doctoral dissertation). Jones International University, CO, USA. Retrieved from <https://search.proquest.com/docview/1549977506>
- Simpson, O. (2010). '22% - can we do better?' - *The CWP Retention Literature Review Final report*. London: Open University. Retrieved from <http://www.ormondsimpson.com/USERIMAGES/Retention%20literature%20review.pdf>
- \*Slade, S., & Prinsloo, P. (2015). Stemming the flow: improving retention for distance learning students. In *EDEN 2015 Annual Conference Proceedings*. Retrieved from <http://oro.open.ac.uk/44537/>
- \*Snyder, J. (2014). *Student perceptions of online learning and persistence for course completion*. (Doctoral dissertation). Walden University, Minneapolis, MN, USA. Retrieved from <http://search.proquest.com/docview/1512414837>
- Soen, D., & Davidovitch, N. (2008). An opportunity missed: Features of college dropouts. A case study: The academic college of Judea and Samaria. *Problems of Education in the 21st Century*, 8, 118-124. Retrieved from <http://www.scientiasocialis.lt/pec/node/165>
- \*Sorensen, C., & Donovan, J. (2017). An examination of factors that impact the retention of online students at a for-profit university. *Online Learning*, 21(3), 206–221. <http://doi.org/10.24059/olj.v21i3.935>
- \*Stoessel, K., Ihme, T. A., Barbarino, M. L., Fisseler, B., & Stürmer, S. (2014). Sociodemographic diversity and distance education: Who drops out from academic programs and why? *Research in Higher Education*, 56(3), 228–246. <http://doi.org/10.1007/s11162-014-9343-x>
- \*Stone, C. (2017). Opportunity through online learning: Improving student access, participation and success in higher education. In *Equity Fellowship Final Report, National Centre for Student Equity in Higher Education*. Retrieved from [https://www.ncsehe.edu.au/wp-content/uploads/2017/03/CathyStone\\_EQUITY-FELLOWSHIP-FINAL-REPORT-1.pdf](https://www.ncsehe.edu.au/wp-content/uploads/2017/03/CathyStone_EQUITY-FELLOWSHIP-FINAL-REPORT-1.pdf)
- \*Stone, C., & O'Shea, S. (2018). Older, online and first: Recommendations for retention and success. *Australasian Journal of Educational Technology*, 35(1), 57–69. <http://doi.org/10.14742/ajet.3913>
- Storrings, D. A. (2005). Attrition in distance education: A meta-analysis. In *Instructional Design, Development and Evaluation Dissertations and Theses. Paper 8*. Retrieved from [http://surface.syr.edu/idde\\_etd/8](http://surface.syr.edu/idde_etd/8)
- \*Strebe, C. (2016). *Variables predicting the retention of learners in online courses at a technical college in Wisconsin, USA*. (Doctoral dissertation). Northcentral University, San Diego, USA. Retrieved from <https://search.proquest.com/docview/1877995966>
- Street, H. (2010). Factors influencing a learner's decision to drop-out or persist in higher education distance learning. *Online Journal of Distance Learning Administration*, 13(4), 1-5. Retrieved from <https://eric.ed.gov/?id=EJ918570>
- \*Struble, K. D. (2014). *Efficacy of hybrid coursework on retention rates in online higher education*. (Doctoral dissertation). Liberty University, Lynchburg, VA, USA. Retrieved from <https://search.proquest.com/docview/1648993415>

- \*Sullivan, S. M. (2016). *The effects of prompting metacognition using email or text reminders on student participation, persistence, and performance in a blended course*. (Doctoral dissertation). University of South Alabama, Mobile, AL, USA. Retrieved from <https://search.proquest.com/docview/1786276658>
- \*Sutton, R. (2014). Unlearning the past: New foundations for online student retention. *Journal of Educators Online*, 11(3). Retrieved from <http://files.eric.ed.gov/fulltext/EJ1033326.pdf>
- \*Swan, K. (2016). Online learning and student success: New findings from learning analytics. In *Proceedings of Global Learn-Global Conference on Learning and Technology* (pp. 553-560). Limerick, Ireland: AACE. Retrieved from <https://www.learntechlib.org/primary/p/172802/>
- \*Sweeney, J. S. W. (2017). *Motivation to degree completion of online doctoral learners: An exploratory qualitative inquiry*. (Doctoral dissertation). Capella University, Minneapolis, MN, USA. Retrieved from <https://search.proquest.com/docview/1876898271>
- \*Tan, M., & Shao, P. (2015). Prediction of student dropout in E-learning program through the use of machine learning method. *International Journal of Emerging Technologies in Learning*, 10(1), 11–17. <http://doi.org/10.3991/ijet.v10i1.4189>
- \*Thistoll, T., & Yates, A. (2016). Improving course completions in distance education: An institutional case study. *Distance Education*, 37(2), 180–195. <http://doi.org/10.1080/01587919.2016.1184398>
- \*Thomas, L., Herbert, J., & Teras, M. (2014). A sense of belonging to enhance participation, success and retention in online programs. *The International Journal of the First Year in Higher Education*, 5(2), 69–80. <http://doi.org/10.5204/intjfyhe.v5i2.233>
- Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of educational research*, 45(1), 89-125. <http://dx.doi.org/10.3102/00346543045001089>
- Tinto, V. (1982). Defining dropout: A matter of perspective. *New Directions for Institutional Research*, 1982(36), 3–15. <http://doi.org/10.1002/ir.37019823603>
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago (IL): University of Chicago Press.
- Tinto, V. (2012). *Completing college: Rethinking institutional action*. Chicago: University of Chicago Press.
- Tinto, V. (2013). Isaac Newton and student college completion. *Journal of College Student Retention*, 15(1), 1-7. <http://doi.org/10.2190/CS.15.1.a>
- Tinto, V. (2015). Through the eyes of students. *Journal of College Student Retention*, 19(3), 254–269. <http://doi.org/10.1177/1521025115621917>
- \*Tower, M., Walker, R., Wilson, K., Watson, B., & Tronoff, G. (2015). Engaging, supporting and retaining academic at-risk students in a Bachelor of Nursing: Setting risk markers, interventions and outcomes. *The International Journal of the First Year in Higher Education*, 6(1), 121–134. <http://doi.org/10.5204/intjfyhe.v6i1.251>
- \*Traver, A. E., Volchok, E., Bidjerano, T., & Shea, P. (2014). Correlating community college students' perceptions of community of inquiry presences with their completion of blended courses. *Internet and Higher Education*, 20, 1–9. <http://doi.org/10.1016/j.iheduc.2013.09.001>

- \*Travers, S. (2016). Supporting online student retention in community colleges: What data is most relevant? *Quarterly Review of Distance Education*, 17(4), 49–61. Retrieved from <https://eric.ed.gov/?id=EJ1142960>
- \*Tucker, W. G. (2014). *Spaces for success in higher education: Males of color at an online predominantly white community college*. (Doctoral dissertation). Northern Arizona University, Arizona, USA. Retrieved from <https://search.proquest.com/docview/1545673941>
- Tyler-Smith, K. (2006). Early attrition among first time eLearners: A review of factors that contribute to drop-out, withdrawal and non-completion rates of adult learners undertaking eLearning programmes. *Journal of Online Learning and Teaching*, 2, 73–85. Retrieved from [http://jolt.merlot.org/documents/Vol2\\_No2\\_TylerSmith\\_000.pdf](http://jolt.merlot.org/documents/Vol2_No2_TylerSmith_000.pdf)
- \*Vadell, K. (2016). *The influence of academic coaching on the retention of distance education students*. (Doctoral dissertation). Drexel University, Philadelphia, USA. Retrieved from <https://search.proquest.com/docview/1797415234>
- \*Vakoufari, M., Christina, A., & Mavroidis, I. (2014). Self-esteem and loneliness as factors affecting distance learning students. *European Journal of Open, Distance and e-learning*, 17(2), 100-116. <http://doi.org/10.2478/eurodl-2014-0022>
- \*Van Hunnik, E. (2015). Online college laboratory courses: Can they be done and will they affect graduation and retention rates? *Higher Learning Research Communications*, 5(4). <http://doi.org/10.18870/hlrc.v5i4.289>
- \*Verdinelli, S., & Kutner, D. (2015). Persistence factors among online graduate students with disabilities. *Journal of Diversity in Higher Education*, 9(4), 353–368. <http://doi.org/10.1037/a0039791>
- \*Vogel, C., Hochberg, J., Hackstein, S., Bockshecker, A., Bastiaens, T.J. & Baumöl, U. (2018). Dropout in distance education and how to prevent it. In *Proceedings of EdMedia: World Conference on Educational Media and Technology* (pp. 1788-1799). Amsterdam, Netherlands: AACE. Retrieved from <https://www.learntechlib.org/primary/p/184409/>
- \*Winger, A. T. (2016). *What do the numbers really mean? An examination of learning analytics related to online courses and university student retention and success*. (Doctoral dissertation). University of North Dakota, USA. Retrieved from <https://search.proquest.com/docview/1862145122>
- \*Wladis, C., Conway, K. M., & Hachey, A. C. (2015). Using course-level factors as predictors of online course outcomes: A multi-level analysis at a US urban community college. *Studies in Higher Education*, 42(1), 184–200. <http://doi.org/10.1080/03075079.2015.1045478>
- \*Wladis, C., Conway, K. M., & Hachey, A. C. (2016). Assessing readiness for online education - Research models for identifying students at risk. *Online Learning*, 20(3), 97–109. Retrieved from <https://eric.ed.gov/?id=EJ1113351>
- \*Wladis, C., Hachey, A. C., & Conway, K. (2014). An investigation of course-level factors as predictors of online STEM course outcomes. *Computers and Education*, 77, 145–150. <http://doi.org/10.1016/j.compedu.2014.04.015>
- \*Woodley, A., & Simpson, O. (2014). Student dropout: The elephant in the room. In O. Zawacki-Richter & T. Anderson (Eds.), *Online distance education: Towards a research*



- agenda* (pp. 459–485). Edmonton, Canada: AU Press.  
<http://doi.org/10.15215/aupress/9781927356623.01>
- \*Wright, L. (2015). *Identifying successful online adult learners*. (Doctoral dissertation). Walden University, MN, USA. Retrieved from  
<https://search.proquest.com/docview/1721464438>
- \*Yang, D., Baldwin, S., & Snelson, C. (2017). Persistence factors revealed: students' reflections on completing a fully online program. *Distance Education*, 38(1), 23–36.  
<http://doi.org/10.1080/01587919.2017.1299561>
- \*York, J. A. (2014). *Student attrition in higher education: Development of an instrument to assess attrition factors in distance learning only educational environments*. (Doctoral dissertation). Southern Connecticut State University, New Haven, CN, USA. Retrieved from  
<https://search.proquest.com/docview/1532797365>
- Yukselturk, E., & Inan, F. A. (2006). Examining the factors affecting student dropout in an online learning environment. *Turk. online J. Distance Educ.*, 7(3), 76-88. Retrieved from  
<https://files.eric.ed.gov/fulltext/ED494345.pdf>
- \*Yukselturk, E., Ozekes, S., & Türel, Y. K. (2014). Predicting dropout student: An application of data mining methods in an online education program. *European Journal of Open, Distance and E-Learning*, 17(1), 118-133. <http://doi.org/10.2478/eurodl-2014-0008>
- \*Zimmerman, W. A., & Johnson, G. (2017). Exploring factors related to completion of an online undergraduate-level introductory statistics course. *Online Learning*, 21(3), 191–205. <http://doi.org/10.24059/olj.v21i3.1017>

## CHAPTER 4

# THE TIME FACTOR IN STUDIES ON DROPOUT IN ONLINE HIGHER EDUCATION: INITIAL REVIEW OF THE LITERATURE AND FUTURE APPROACHES\*

### Summary

This paper addresses the factor of *time* in relation to dropout in online higher education (OHE), linking both to fully online models such as UOC's. In OHE, time-related reasons are the most important factors for dropping-out; conversely, time management factors emerge as a key issue for continuance intention and re-enrolment. This paper thus presents an initial review of the literature, with key concepts and approaches on the time factor, which shall inform future research. Key issues are centred upon two phenomena: the *flexibility* offered by OHE and asynchronous learning, which is the main attraction for busy adult learners but can also induce *procrastination* and conflict; and the common *misconceptions* about the magnitude of workload, time, and effort required by OHE. We present two main theoretical approaches: time management studies, and work-study-home conflict/balance; and discuss possible implications and interventions for fully online models of OHE.

### 4.1. Dropout in online higher education and the time factor

Over the last 20 years, research on dropout in online higher education (OHE) have gained tremendous importance. Most studies investigate the factors that influence attrition, retention, persistence, and success, trying to construct new models of attrition and profiles of students most likely to dropout or persist. A review of the research (Holder, 2007) on the profile of persisters indicates that, besides being academically prepared, they possess time management skills and high levels of engagement, self-directedness, self-discipline, motivation, and commitment.

In that regard, the time factor has been pointed out as an important issue for dropout in many studies in traditional, brick-and-mortar universities. Kember (1999), the author of a classic model on attrition, mentioned that many students face difficulties in trying to conciliate study requirements with conflicting demands from family, work, and social commitments. Reviewing the literature in Spanish on dropout in higher education, Tuero, Cervero, Esteban, & Bernardo (2018) found that one of the most important variables is the time dedicated to work while studying. However, other studies (e.g., Sánchez-Gelabert & Andreu, 2017) found that

---

\* Xavier, M., & Meneses, J. (2018). The time factor in studies on dropout in online higher education: Initial review of the literature and future approaches. In J. M. Duart & A. Szucs (Eds.), *Proceedings of the 10th EDEN Research Workshop: Towards Personalized Guidance and Support for Learning* (pp. 361-367). European Distance and E-Learning Network. [https://proceedings.eden-online.org/wp-content/uploads/2018/11/RW10\\_2018\\_Barcelona\\_Proceedings\\_ISSN.pdf](https://proceedings.eden-online.org/wp-content/uploads/2018/11/RW10_2018_Barcelona_Proceedings_ISSN.pdf)

what really makes it difficult for the students to persist are not the hours dedicated to a job, but their time management skills - which allow them to effectively balance their study and job responsibilities. Other factors connected to dropout proneness and persistence also have strong correlations with the time factor. Success and performance in traditional educational settings are strongly influenced by time management skills (Michinov, Brunot, Le Bohec, Juhel, & Delaval, 2011). That influence is stronger in non-traditional students - adult learners, who constitute the majority in OHE - who are usually more affected by work-study and family-study obligations (O'Toole & Essex, 2012).

In the context of online open universities, on the other hand, the influence on dropout of factors related to time is even stronger. In a review of dropout factors in OHE, Lee and Choi (2011) found a number of studies that highlighted time management skills, estimation of the time required to balance academic and professional obligations, and ability to juggle roles/balancing multiple responsibilities as key factors that influence persistence and attrition.

The Universitat Oberta de Catalunya (UOC) radicalizes such context. As a *fully* distance teaching university, it delivers education through an asynchronous mode based on e-learning (Sangrà, 2002), with a highly flexible educational model with no permanence requirements and very few enrolment requirements. UOC's typical students mirror the main group likely to enrol in virtual university degrees, that of *non-traditional learners*: mature-aged or adult, with full-time or part-time jobs and family responsibilities, or a combination of these characteristics. Statistically, 40.5% of students are 30 or over, 81.5% study and work, and 72.6% have a prior university education; dropout rate at UOC is 57.6%, with first semester drop-outs accounting for nearly half of this total (Grau-Valldosera, Minguillón, & Blasco-Moreno, 2018). The correlation is clear: "non-traditional students tend to drop out more frequently than their traditional counterparts even when they have good performance" (Sánchez-Gelabert & Andreu, 2017, p. 28). UOC's flexible model implies that online learning is largely self-directed and dependent upon the learners' agency and ability to manage their personal and academic responsibilities. However, this produces high attrition rates, especially after finalizing their first semester, due to misconceptions learners have about the workload (Bawa, 2016), and their home/family obligations and employment commitment (Carroll, 2008). Grau-Valldosera et al. (2018) thus point that time-related reasons were the most important factors for dropping-out; conversely, time management factors during the first semester emerge as a key issue for continuance intention and re-enrolment.

Therefore, if *time* appears to be a crucial factor for attrition both in face-to-face and online learning environments, more research is needed on its impact and dynamics in fully OHE models such as UOC's, so as to improve retention, performance, evaluation, and personalized guidance and support for e-learning.

## **4.2. The time factor: initial review and implications for OHE**

This paper thus presents an initial review of the literature, with key concepts and approaches on the time factor, which shall inform future research. The key issues seem to be centred upon

two phenomena: the *flexibility* offered by OHE and asynchronous learning, which is the main attraction for busy adult learners but can also induce or facilitate *procrastination* and conflict (Doherty, 2006; Holder, 2007); and the common *misconceptions* about the magnitude of workload, time, involvement, and effort required by OHE (Bawa, 2016). Indeed, time related issues involved in online courses have replaced the problem of distance (Mason, 2001) that was more typical of brick-and-mortar universities and are clearly connected to high attrition rates in online learning environments.

In that regard, many authors (see Holder, 2007, for a review) stressed the importance of *time management* for persistence and successful online learning. Bunn (2004) found that students with a heavy workload tended to persist and succeed, provided they had good time management skills so as to deal effectively with conflictive demands. Reviewing the literature, Lee and Choi (2011) found that the skills included the ability to estimate the time and effort required for a task, to manage time effectively, and to balance multiple responsibilities. Conflictive demands raised by engaging with OHE degrees seem to be central for persistence and attrition. Reviewing the most common reasons for withdrawal, Ashby (2004) found that the most important ones were “the difficulties students have in juggling their studies with other aspects of their lives”, especially personal/family or employment responsibilities, concluding that “[t]ime is clearly a major issue for O[pen] U[niversity] students” (p. 72). Corroborating other literature, Yukselturk and Inan (2006) found that the most important factor affecting student retention is finding sufficient time to study; work life demands played a special role in that. Such phenomena have been studied via two main theoretical approaches: *time management* and *work-study-home balance/conflict*.

### **4.3. Theoretical approaches**

#### **4.3.1. Time management approach**

Time management can be defined as the ability to plan study time and tasks (Broadbent & Poon, 2015), or the learners’ scheduling, planning, and properly managing their study time (Pintrich, 2004). It has been studied as part of academic self-regulated learning (SRL) strategies (Pintrich, 2004). Self-regulation is more crucial in online education (i.e., given the lack of face-to-face interaction with instructors and peers, no need to be physically present), for it heavily relies on active, autonomous participation. Among the SRL strategies with the strongest findings for academic achievement is time management (Broadbent & Poon, 2015). An analogous, slightly more specific concept is employed by Puspitasari (2012): *study time management*, which refers to “academic time management, in which one is managing his or her time to study by setting learning goals, scheduling study time, and monitoring the attainment of the learning goals” (p. 6).

A secondary and related theoretical approach refers to studies on academic *procrastination*, which is viewed as a specific learner characteristic in time management and is defined as intentionally postponing or delaying work that must be completed (Michinov et al., 2011). Research into the relationship between procrastination, motivation, and performance has forayed into their underlying self- and social-regulation processes, showing that higher levels

of procrastination are related to lower levels of self-regulation and poorer learning outcomes (Michinov et al., 2011).

Research has found numerous correlations between time management skills/procrastination and motivation, retention/persistence, performance, and dropout proneness. Holder (2007) points that time management skills are connected to learning orientation (cognitive styles), environment (allocating space and time to study), and motivation (to avoid procrastination in self-directed learning). Not surprisingly, in asynchronous learning, time management is strongly connected to performance (Loomis, 2000). Conversely, procrastination is negatively related to learners' participation and performance (Michinov et al., 2011). Regarding online academic achievement/success, a review of the literature by Michinov et al. (2011) found a significant positive relation with time management/study management. Of course, all these factors impact dropout and persistence in OHE. Time restraints, lack of time, time management, and procrastination are the primary reasons for students failing or dropping an online course (Doherty, 2006). In contrast, time management is a key factor for persistence: persisters score higher in emotional support, self-efficacy, and time and study management (Holder, 2007).

#### **4.3.2. Work-study-home conflict/balance approach**

This approach is derived from the tradition of research on work-family balance/conflict. Work/study, or work/school conflict (WSC), is defined as the degree to which work affects the student's ability to meet school-related demands and responsibilities (McNall & Michel, 2017). Eller, Araujo, and Araujo (2016) extended the concept to research work-study-home conflict/balance in online master's students. However, the emphasis on conflict dominates research, which usually seeks to study its impact on stress and well-being, and indicates that non-traditional students experience intense conflicts between the work, study, and home domains, especially female students (Carney-Crompton & Tan, 2002). Thus, WSC is negatively related to academic performance (Owen, Kavanagh, & Dollard, 2017). Research usually focuses on the institutional domain - i.e., how its structure and dynamics produce conflictive demands and how to alleviate or prevent them. However, Eller et al. (2016) studied the individual strategies online learners used to manage demands. Yet, being rather new, this approach has produced little research, and there is a lack of research on non-traditional students. It has rarely been applied to study the relation with dropout and persistence in OHE (e.g., Pierrakeas, Xeno, Panagiotakopoulos, & Vergidis, 2004).

### **4.3. Future directions: Possible interventions and results**

Besides furthering research on the time factor in its relations with dropout and related concepts, some possible interventions and strategies can be envisioned to prevent dropout and time-related conflict and to develop and improve student retention (and agency, self-direction, performance, success, satisfaction, and motivation). Their focus should be on the first academic year, especially the first semester (which presents the highest attrition rates), and preferably be embedded in ampler interventions, for time management and issues influence and are influenced by other dropout factors - indeed, it is usually the interaction among different factors

that lead to completion or non-completion (Lee & Choi, 2011). Such strategies would ideally address situational, institutional, and personal factors:

- Provide *flexibility in student assessment* (to avoid dropout or stop-out) (Carroll, 2008);
- *Identify at-risk students* early on and provide them with appropriate, personalized training opportunities and support (Pierrakeas et al., 2004), e.g., an introductory course for the organization of academic work;
- Provide *targeted advice and orientation* to students, regarding time management, procrastination issues, and a realistic picture of what is required at various stages of the course, especially at key points (first semester/first year) and to students identified as “at risk” (Ashby, 2004, p. 74);
- Design *personalized course plans* and curricula, focusing on adequate first enrolment;
- Provide *staff trainings* to qualify staff and provide guidance/support regarding such issues (Castles, 2004).

Finally, more research on the subject is needed in order to build robust frameworks for action, implementation, and monitoring the impact of interventions (Ashby, 2004), especially in the context of fully online universities. UOC has recently implemented a research/interventional institutional project, called ESPRIA (“First-year students”), which shall further enrich our scientific understanding of these important matters and how to deal effectively with them.

#### 4.4. References

- Ashby, A. (2004). Monitoring student retention in the Open University: definition, measurement, interpretation and action. *Open Learning*, 19(1), 65-77. doi:10.1080/0268051042000177854
- Bawa, P. (2016). Retention in online courses: Exploring issues and solutions - A literature review. *Sage Open*, 6(1), 1-11. doi:10.1177/2158244015621777
- Broadbent, J., & Poon, W. L. (2015). Self-regulated learning strategies & academic achievement in online higher education learning environments: A systematic review. *The Internet and Higher Education*, 27, 1-13. doi:10.1016/j.iheduc.2015.04.007
- Bunn, J. (2004). Student persistence in a LIS distance education program. *Australian Academic & Research Libraries*, 35(3), 253–69. doi:10.1080/00048623.2004.10755275
- Carney-Crompton, S., & Tan, J. (2002). Support systems, psychological functioning, and academic performance of nontraditional female students. *Adult Education Quarterly*, 52(2), 140-154. doi:10.1177/0741713602052002005
- Carroll, D. (2008). *Factors affecting the retention and progression of postgraduate Business distance education students*. (Master's dissertation). University of Southern Queensland, Brisbane, Australia. Retrieved from <https://eprints.usq.edu.au/4922/>
- Castles, J. (2004). Persistence and the adult learner: Factors affecting persistence in Open University students. *Active Learning in Higher Education*, 5(2), 166–179. doi:10.1177/1469787404043813

- Doherty, W. (2006). An analysis of multiple factors affecting retention in web-based community college courses. *The Internet and Higher Education*, 9, 245–255. doi:10.1016/j.iheduc.2006.08.004
- Eller, A. M., Araujo, B. B., & Araujo, D. B. (2016). Balancing work, study and home: A research with master's students in a Brazilian university. *RAM. Revista de Administração Mackenzie*, 17(3), 60- 83.
- Grau-Valldosera, J., Minguillón, J., & Blasco-Moreno, A. (2018). Returning after taking a break in online distance higher education: From intention to effective re-enrolment. *Interactive Learning Environments*, 15(1). doi:10.1080/10494820.2018.1470986
- Holder, B. (2007). An investigation of hope, academics, environment, and motivation as predictors of persistence in higher education online programs. *Internet and Higher Education*, 10(4), 245–260. doi:10.1016/j.iheduc.2007.08.002
- Kember, D. (1999). Integrating part-time study with family, work and social obligations. *Studies in Higher Education*, 24(1), 109-124. doi:10.1080/03075079912331380178
- Lee, Y., & Choi, J. (2011). A review of online course dropout research: implications for practice and future research. *Educational Technology Research and Development*, 59(5), 593–618. doi:10.1007/s11423-010-9177-y
- Loomis, K. D. (2000). Learning styles and asynchronous learning: Comparing the LASSI model to class performance. *Journal of Asynchronous Learning Networks*, 4(1), 23–32.
- Mason, R. (2001, Feb). *Time is the new distance?* Inaugural Lecture, Open University, Milton Keynes, UK.
- McNall, L. A., & Michel, J. S. (2017). The relationship between student core self-evaluations, support for school, and the work–school interface. *Community Work & Family* 20(3),1-20. doi:10.1080/13668803.2016.1249827
- Michinov, N., Brunot, S., Le Bohec, O., Juhel, J., & Delaval, M. (2011). Procrastination, participation, and performance in online learning environments. *Computers & Education*, 56(1), 243–252. doi:10.1016/j.compedu.2010.07.025
- O'Toole, S., & Essex, B. (2012). The adult learner may really be a neglected species. *Australian Journal of Adult Learning*, 52(1), 183-191. Retrieved from <https://www.learntechlib.org/p/54800/>
- Owen, M. K., Kavanagh, P. S., & Dollard, M. S. (2017). An integrated model of work–study conflict and work–study facilitation. *Journal of Career Development*, 1-14. doi:10.1177/0894845317720071
- Pierrakeas, C., Xeno, M., Panagiotakopoulos, C., & Vergidis, D. (2004). A comparative study of dropout rates and causes for two different distance education courses. *International Review of Research in Open and Distance Learning*, 5(2). doi:10.19173/irrodl.v5i2.183
- Pintrich, P. R. (2004). A conceptual framework for assessing motivation and self-regulated learning in college students. *Educational Psychology Review*, 16(4), 385-407. doi:10.1007/s10648-004-0006-x
- Puspitasari, K. (2012). *The effects of learning strategy intervention and study time management intervention on students' self-regulated learning, achievement, and course completion in a distance education learning environment.* (Doctoral dissertation). Florida State University, Tallahassee, FL, USA. Retrieved from <https://diginole.lib.fsu.edu/islandora/object/fsu:183075/datastream/PDF/view>

- Sánchez-Gelabert, A., & Andreu, M. E. (2017). Los estudiantes universitarios no tradicionales y el abandono de los estudios. *Estudios sobre Educación*, 32, 27-48. doi:10.15581/004.32.27-48
- Sangrà, A. (2002). A new learning model for the information and knowledge society: The case of the Universitat Oberta de Catalunya (UOC), Spain. *The International Review of Research in Open and Distributed Learning*, 2(2), 1-19. Retrieved from <http://www.irrodl.org/index.php/irrodl/article/view/55/114>
- Tuero, E., Cervero, A., Esteban, M., & Bernardo, A. (2018). ¿Por qué abandonan los alumnos universitarios? Variables de influencia en el planteamiento y consolidación del abandono. *Educación XXI*, 21(2), 131-154. doi:10.5944/educxx1.20066
- Yukselturk, E., & Inan, F. A. (2006). Examining the factors affecting student dropout in an online learning environment. *Turk. online j. distance educ.*, 7(3), 76-88. Retrieved from <https://files.eric.ed.gov/fulltext/ED494345.pdf>



## CHAPTER 5

# PERSISTENCE AND TIME CHALLENGES IN AN OPEN ONLINE UNIVERSITY: A CASE STUDY OF THE EXPERIENCES OF FIRST-YEAR LEARNERS\*

### Abstract

Student persistence in the first year of studies is a crucial concern in online higher education. Recent accelerated growth in online programs due to the COVID pandemic has increased concerns over higher dropout rates, which are often connected to students' time challenges – time poverty, juggling multiple commitments, and fitting studies into busy lives. However, research seldom focuses on students' perceptions of time issues related to persistence. This study addresses this gap by exploring how 20 second-year students retrospectively viewed their experiences of time challenges and how they impacted their persistence in their first year at an online open university. Content analysis of in-depth interviews demonstrated that time pressure and time-conflicts were crucial barriers for success in the foundational semester; the main barrier was juggling study with multiple priorities. Most persisters had good time management and high levels of intrinsic motivation, satisfaction, and self-determination. However, even procrastinators with heavy work-family duties managed to persevere due to their resilience and personal motivation. Lastly, recommendations and strategies for effective student-based interventions to foster persistence are suggested.

**Keywords:** persistence; time challenges; retention; student experience; first year; online higher education; open university

### 5.1. Introduction

Time in our contemporary societies has arguably been hugely transformed by the progressive diffusion of internet and communication technologies (Castells, 2000). Computer-mediated interaction and the growth of open online higher education (OHE) have altered the fundamental categories of time, place, and space of learning, creating new time conditions (Kahu et al., 2014). Temporal flexibility offered by OHE appeals principally to the expectations and desires of non-traditional, mature-aged learners with professional and family commitments, who are usually time-poor and represent the vast majority of OHE students. While the ubiquitous promise of studying “anytime, anyplace” marketed by OHE allures these learners, it also increases their individual responsibility and places huge demands on their self-regulation, self-directedness, and notion of the time required by their studies (Hyllegard et al., 2008). Asynchronous online learning thus presents new challenges, connected to both the desynchronization of study activities and their conciliation with other life commitments, and

---

\* Xavier, M., & Meneses, J. (2022). Persistence and time challenges in an open online university: A case study of the experiences of first-year learners. *International Journal of Educational Technology in Higher Education*, 19, Article no. 31. <https://doi.org/10.1186/s41239-022-00338-6>

the intensification of its structure and pacing – which moved time management issues back to learners (Thorpe, 2009).

Such time challenges may have a major impact upon online student persistence, which can be defined as completing a course and continuing to program completion (Hart, 2012). Time represents a structural influence on dropout, persistence, and engagement (Kahu et al., 2014). It is indeed a macro-factor, connected to several important secondary factors: learner preparedness; time management and procrastination (self-regulation); time availability and constraints, linked to learning design but also to student life circumstances such as family, employment, and health issues; and student misconceptions and expectations (Lee & Choi, 2011).

Although online adult learners are more likely to be more independent and self-regulated, they suffer more from external factors such as life commitments than their younger counterparts (Lee et al., 2019). Non-traditional students often face an attrition risk trifecta (George et al., 2021): being mature and studying part-time and in online mode, they often struggle to conciliate four competing demands - study, family, work, and self. The transition to OHE, particularly the first semester, is especially relevant, as dropout occurs mostly during the first year, also affecting traditional students (Sánchez-Gelabert et al., 2020). Hence, supporting and understanding the transition to third-level online education should be an important priority for institutions. However, relatively little research exists that focuses on the temporal dimensions of OHE and its impact on the transition experience and the first year of studies, especially from the student perspective (Veletsianos et al., 2021). Complementing institutional measures of attrition and persistence, it is paramount to give voice to the students' experiences of their learning journeys, which have been less visible to institutions. In the same way that OHE is fundamentally student-centered, so are dropout and retention, for which student and social factors often play a much more crucial role than institutional issues (Myers et al., 2021).

Addressing such gaps, this study aimed at exploring how first-year OHE students experienced and managed their time challenges and how these impacted their persistence.

## **5.2. Literature review**

Several theoretical models have addressed a wide range of factors and barriers that impact and may predict OHE retention and dropout (Kara et al., 2019; Lee & Choi, 2011; Xavier & Meneses, 2020). However, over the last two decades some models have focused more on persistence and success. That may reflect a paradigm shift, which is needed in retention research: while the prevailing retention paradigm has been shaped by institutional needs, scientific inquiry should address the students, who seek to *persist* and have their own objectives (Tinto, 2017). Student persistence and success lead to retention, the education institution's goal.

Among such persistence models, the Persistence in Distance Education Model (Powell et al., 1990) distinguishes between predisposing, life change, and institutional factors. The

Persistence Model of Non-traditional online learners (Stephen et al., 2020) focuses on the first year of studies and concentrates on specific student factors: self-regulation, self-direction, and self-efficacy, which are connected to the motivation construct proposed by Tinto (2017) as central to persistence.

Nonetheless, since Kember (1989), retention and dropout models for distance education (e.g., Rovai, 2003) were already following this tendency to de-emphasize social integration components of traditional models and focus instead on factors external to the institution, i.e., student factors: family and employment responsibilities, educational preparedness, and life changes.

All these factors have significant impact upon students' time. Indeed, time-related issues appear to be the primary reasons for students not persisting and dropping out of online courses (Ashby, 2004; Myers et al., 2021). Among such time challenges are time poverty, time pressure, and time-related conflicts, and the need to juggle multiple responsibilities (Lee & Choi, 2011). For adult learners, the main challenge appears to be integrating academic duties with personal and professional life; lack of time and time restraints are the main dropout factor for this cohort (Grau-Valldosera et al., 2018).

Several student factors influence such time challenges. First, OHE places huge demands on student *self-regulation*, as it is largely dependent upon the students' agency, motivation, and skills. Among such skills, *time management* to deal effectively with OHE demands and job and family commitments, and independently plan and self-manage time, is essential for success and persistence (Broadbent & Poon, 2015). On the other hand, *academic procrastination* and poor time management are connected to poor performance and higher dropout rates (Michinov et al., 2011). Many learners begin their studies without previous OHE experience, lacking academic preparedness and familiarity with the OHE model and its demands. Lack of previous experience may appear connected to students' *misconceptions* or unrealistic expectations regarding the workload, time, effort, and discipline required by OHE, and *overestimation* of their own available time, readiness, and capacities (Korstange et al., 2020). Although persistent students may overcome such challenges, they need time to adapt, especially in their first semester. Hence, navigating the first-year transition can be particularly strenuous for online learners (Korstange et al., 2020). When the student's life circumstances change, as in the case of pregnancy, illness, or unexpected financial or work changes, they can generate work-studies and family-studies conflicts and severely strain students' time pressure and, consequently, persistence (Lee & Choi, 2011).

Lastly, institutional and program factors also influence time challenges and persistence. Course design (i.e., high assessment load and workload), program difficulty level, poor interaction with instructors, advisors, and peers, and poor institutional support may affect students' time planning and commitment and their intention to persevere in their studies (Kara et al., 2019).

## 5.3. Methods

### 5.3.1. Context of research

This research was carried out at the Open University of Catalunya (UOC), a fully online university characterized by flexibility of admission, permanence, and enrolment requirements, and the employment of asynchronous delivery, continuous assessment, and student-centered, competency-based pedagogical methods. UOC's typical students (~90%) are adult non-traditional learners. The dropout rate in UOC programs is 57.6%, with first semester dropouts accounting for nearly half of this total; almost half of the new students drop out in the first year (Sánchez-Gelabert et al., 2020).

### 5.3.2. Design and participants

This single qualitative case study (Yin, 2003) employed an exploratory cross-sectional design and a descriptive-interpretive approach. A purposive, criterion-based, maximum variation sampling (Patton, 2015) was employed, as our aim was to understand the experiences of students with different profiles, including minorities (e.g., traditional full-time students). Thus, our sample was not designed to be representative of the overall distribution of the student population.

Prospective participants had started their online undergraduate studies in the Fall 2017 semester, without previous enrolments in other UOC programs, and re-enrolled for two consecutive semesters, according to their academic records. Student profiles were generated according to the following criteria:

- age when started OHE: non-traditional ( $\geq 25$  years-old) or traditional students;
- enrolment: full-time (enrolled in more than 18 credits ECTS) or part-time;
- gender: male or female.

That generated eight different profiles; we aimed at selecting two or three students per profile, balancing gender. The research team sent an email to the cohort of 3,448 eligible students inviting them to take part in the study. From this cohort a total of 20 voluntary participants were selected (Table 1). To ensure anonymity, participants were assigned pseudonyms. The UOC granted ethical approval for the study and all participants gave informed consent before taking part in it. A €30 gift voucher was given to each student as economic compensation and incentive to participate.

**Table 1** Participants

Profile	Dedication	Participant	Gender	Age (2017.1)	Other commitments	Family responsibilities	Previous HE/OHE experience
Traditional (<25 y-o)	Part-time	Edgar	M	22	Full time job (FT)	Partner	–
		James	M	21	FT	Partner	On-campus
		Martha	F	19	Studies 2 degrees	–	On-campus
		Becky	F	22	Part time job (PT) 2 degrees	–	On-campus
		Hellen	F	19	3 degrees	–	On-campus
	Full-time	Patrick	M	21	PT (2nd semester)	Partner	On-campus
		Juan	M	20	–	–	–
		Michael	M	20	Casual work	Father care	On-campus
		Paula	F	19	Casual work	–	On-campus
		Sarah	F	19	2 degrees Casual work	–	On-campus
Non-traditional (≥ 25 y-o)	Part-time	Mark	M	25	FT	–	–
		Joe	M	52	FT	Househusband	On-campus
		Bob	M	26	PT	Partner	–
		Jessica	F	29	FT	Partner	On-campus
		Sonia	F	28	FT	Partner	On-campus
	Full-time	Henry	M	27	–	–	–
		Edward	M	25	FT	Partner	On-campus
		Beth	F	51	Casual work	–	On-campus
		Monica	F	31	PT	Partner Sons + Pregnant	On-campus
		Ingrid	F	30	2 degrees Casual work	–	–

### 5.3.3. Data collection

In-depth hour-long semi-structured interviews were conducted (mostly face-to-face; a few via videoconference) at the end of the Fall 2018 semester, employing broad open-ended questions to allow full expression of the students' complex lived experiences. Interviews addressed the students' first year experiences retrospectively, focusing on time-related issues, deduced from the literature explored above: time challenges and how students coped with them, time management, procrastination, time pressure and its effects, and suchlike. Aiming at in-depth breadth of inquiry, questions also explored students' motivations, reasons for choosing OHE, support received, and their experiences in their third semester. The interview protocol is available upon request.

### 5.3.4. Data analysis

The interviews in Spanish were transcribed verbatim and iteratively analyzed using Schreier's (2012) qualitative content analysis, searching for selected aspects of meaning that were relevant

to the research aims. A double coding process was developed to generate the main common themes and codes that arose from the interviews. The first author read all the interviews several times and produced a trial coding, which was then discussed with the second author, revising and expanding the coding scheme with refined understandings and insights, until a final coding was generated and agreed upon by the two authors.

## 5.4. Results

This section employs illustrative vignettes to summarize our results in relation to the studies aims. Findings are structured according to the main themes and subthemes developed.

### 5.4.1. Participants' information

Participants included 20 second-year undergraduate students—50% female, ages ranging from 19 to 52 years ( $M = 26.3$ ,  $SD = 9.47$ ). Most participants (70%) had previous on-campus HE experience; none had prior OHE experience. Noticeably, only three participants in our cohort had very demanding family care commitments. Programs studied by the participants varied considerably; in our cohort, only males (Edgar, James, Mark) were enrolled in programs considered to be very difficult and demanding (Computer Science and Engineering). However, two female participants (Hellen, Sarah) also studied difficult on-campus degrees concomitantly.

### 5.4.2. Reasons for choosing OHE

The reasons given for choosing OHE are important regarding time and persistence, for they appear connected to expectations, motivation, and life situations. The vast majority (18) of our participants elected OHE because of its *flexibility*, perceived as allowing self-time management and organization, and its easy accessibility, as the UOC is characterized by an open-entry philosophy that is typical of open universities, with very few admission, permanence, and enrolment requirements. “Because it allowed me, first, to be able to organize my time. For me [the reason to choose] was flexibility, the UOC. Total flexibility” (Beth). Many students connected flexibility to the necessity of working at the same time: “To be able to combine it well with my work” (Joe). For some, it was the only way they could engage with tertiary education, for on-campus studies would be impossible for them (for reasons mainly related to time and flexibility). Five students also highlighted open entry: they were not able to access public, on-campus universities, and two mentioned it was because the UOC offered specific programs not available elsewhere.

### 5.4.3. Transition and first year experience

#### 5.4.3.1. Time dedication and study load expectations

Students' prior expectations and misconceptions related to time and study load are important issues for transition and the first semester of studies. Significantly, most persisters (seven) projected their studies would demand *more* time and be more difficult than they actually did. “I thought it'd require more time. I guess people associate online and flexible with easy” (Edward). “I thought it'd demand much more work, because online learning depends more on the student” (Becky). Five participants said their expectations were realistic and adequate.

Sonia mentioned that academic advising before the first enrolment was crucial for her having adequate expectations: “The first thing they tell you is, how much time can you dedicate [to study]”. However, six participants expected their studies would demand *less* or *much less* time and work – a misconception they realized after facing hardships in their first semester. “I thought I’d have to dedicate less hours, because in the beginning I thought, ‘well, it’s an online university, it’ll be easier’. But after the first semester I saw you have to dedicate much more time if you want to do well” (Juan). Other students did not clearly plan their time dedication, but were able to invest more time and work because of their satisfaction and intrinsic motivation: “I hadn’t planned a lot either, because I didn’t know exactly what I’d have to dedicate... In the end, I was putting in a lot more hours than I’d initially expected. But because I liked [the studies] and they rewarded me, so I dedicated more [time]... because I like to do it well” (Sarah). Beth ascribed her wrong expectation to lack of academic preparedness: “I thought it’d be less time, that dedicating my mornings would be enough. But I hadn’t studied for 30 years, so in the beginning you must work full throttle, so the first month was quite hard”. Two participants (Bob, Ingrid) had no idea about the time and study load their studies would demand. Noticeably, none of the non-traditional part-time (NTPT) participants – the vast majority of OHE students - expected OHE would demand *more* time and effort from them; two had adequate expectations, two thought it would demand less, and one had no idea.

#### **5.4.3.2. Transition difficulties and adaptation**

Unrealistic expectations and lack of OHE experience contributed to six students experiencing many difficulties in their first semester; they expected that OHE would be easier and less time-consuming. The virtual campus was a novelty often cited as a source of problems: “I had a hard time adapting to the [virtual] campus, because I was used to another [face-to-face] campus. Especially its lack of presence and dialogue (only through the screen)” (Becky); “You don’t have anyone to explain things to you in person” (Mark). That places huge demands on student self-regulation: “I was used to the [face-to-face] educational system, they explained and repeated everything to you, and now, you having to take the step to look for everything, inform yourself, look for reliable sources, it’s complicated” (Michael). This lack of previous OHE experience led Michael to fail a course. It takes time and effort to adapt to a new learning mode: “At first it was a new experience for me because I hadn’t studied anything online, and then I was very nervous, I didn’t organize myself well and had many doubts. It was the period of adaptation” (Juan).

However, most (14) participants coped well with such hardships, and for five learners the online system was seen as quite advantageous, provided one succeeded in adapting to it. “In principle the system is very convenient. But in the beginning it’s difficult, you must understand the mechanics on your own, know the virtual campus minimally, but once you’ve got it, it’s perfect” (Joe). OHE demands huge personal responsibility, but when the student manages to fulfil that role, it is seen as a source of accomplishment: “At the UOC, when you make the effort, you are making progress, because you do it by yourself. It’s your motivation” (Martha). Among the NTPT participants, only Mark mentioned first-semester difficulties (with the asynchronous, non-presential system); the other four adapted well.

### **5.4.3.3. Failing courses**

Despite often facing many transition difficulties, only three participants failed one course in their first semester; Patrick and Michael failed because they were getting adapted to the educational system and “got lost”. Four students failed a course in their second semester, due to varied reasons; for instance, Ingrid had started a job abroad, which limited her time availability. However, most participants did not fail any courses, and eight of them mentioned they received good or excellent grades in all the courses they took.

## **5.4.4. Time challenges and experiences**

### **5.4.4.1. Self-regulation: time management and academic procrastination**

Most of our persisters mentioned they had very good time management skills. “I always employ the same strategies that work and dedicate a number of hours per day [to my studies]” (Henry). OHE “really takes a lot of time and requires a lot of organization on your part. You cannot leave everything to the last minute. There aren’t many secrets. If you organize yourself, you can do it. And time management is one of my strengths” (Beth). Some of them clearly derived satisfaction and motivation to persist from seeing that they were able to manage well their time, studies, and other commitments. “The fact that I’m studying, working, raising two children, and having different activities, makes me feel quite good. My time management strategies work; if they didn’t, I wouldn’t continue” (Monica). However, some presented academic *procrastination* in the beginning of the semester: “But as the course advanced, I saw that, damn, I have to get a move on, catch up and structure the work, or I won’t make it” (Patrick). Or because of lack of personal motivation: “I used to leave many tasks for the weekend, especially those assignments that I didn’t like” (Becky). Five participants said they had good time management but with some procrastination in the beginning due to work commitments, and three improved their skills in their second semester. “Having more work and pressure and motivation to organize myself made me better in my studies and management abilities” (Martha). However, disliking or having no interest in subjects also induced procrastination: “This doesn’t attract me at all and then it’s harder. Then I postpone doing it until I cannot any longer. Motivation, no doubt” (Ingrid). Only three participants were academic procrastinators – but they managed to pass their courses and persist. “I always start working [on an assignment] very close to the deadline. I’ve always left everything for last. I end up putting it all together on the last day, and then I stay all day home, working” (Paula).

### **5.4.4.2. Self-regulation: time management strategies**

Time management strategies were varied and paint a rich picture of how our participants juggled their time. Most learners gave *constant dedication* to their studies: “Two hours per day, constantly, weekends when some assessment activity was due” (Edgar). A few students reported extreme planification and constancy: “Some hours every day. My weekly schedule is, I have a time tracking software and I input every half hour I dedicate to study, then at the weekend I adjust what is needed” (James). Together with constant dedication, some learners also employed the *keeping ahead* strategy: “Mornings I dedicate to the UOC, always trying to be very organized... I prefer to submit an activity a day or week before the deadline, it takes a lot of pressure off me” (Beth). Others were constant in their weekly dedication, but flexible at the same time: “As it provides you such flexibility, maybe one day you dedicate one hour [to



studies], another day you dedicate five hours” (Sarah). Beyond rigid constancy, for some self-directedness was key: “During the first year you realize that it doesn’t depend so much on fixed hours, but on organizing it as you can. And taking advantage of the moments when you’re most productive” (Michael). However, to do that often requires *borrowing time* (from other commitments): “I take time out of leisure, or other [life] tasks” (Juan).

Other students were less constant and more *chaotic* in their time management. Some always tried to *keep ahead*: “I’m quite chaotic to organize myself. I always tried to have it done before [the deadline]” (Becky). “I use the ‘do it all ASAP’ strategy” (Hellen). Others were indeed chaotic, reporting very inconstant dedication due to unpredictable time schedules and time-availability because of work or family care. Most of them employed the *dovetailing* strategy, weaving study into small time chunks alongside other commitments: “[My time schedule] is completely unpredictable. When I can, I dedicate time. I have no way to plan it. I improvise and juggle all the time. Studies then filled the gaps I had” (Joe). In this case, studies usually are the third priority, and learners struggle to fit them with more important commitments. “I burn the midnight oil if I have to. If my baby is finally asleep, I study half an hour... Willpower is everything. There are priorities, but then I try to compensate [finding time for study]” (Monica). *Procrastinators*, on the other hand, had a harder time. Some reported a low hourly constancy – a *deadline-driven* time management: “It wasn’t a constant organization of my time, I worked when the deadline was very near” (Sonia). Some employed *last-minute cramming*: “I’m a bit chaotic, yeah? But I work a lot under pressure. I never think, ‘there’s this assessment submission, I’ll do it now so I don’t have to worry about it’. I try to find gaps, but then time is on me and I submit it just on the deadline” (Bob).

#### **5.4.4.3. Integration of different commitments**

While learners employed diverse time management strategies, juggling different commitments with study load remained a challenge for them – especially for the ones with work/family commitments. However, almost all participants reported they achieved a good conciliation of their studies with other life responsibilities. OHE flexibility helped that: “I think I’ve balanced [my commitments] well, because of flexibility. That’s the best thing the UOC offers you, time flexibility” (Patrick). Yet, striking a good balance had a clear price for some: “Leisure [time], not much left” (James); “You sacrifice your time” (Jessica); “I slept very little” (Edward). Some participants managed to persist and strike a good balance of their studies with their life commitments despite serious challenges: a chaotic, unpredictable work schedule (Joe); severe procrastination (Paula); procrastination due to lack of personal motivation and interest (Ingrid); and stressful, concomitant commitments like work and family care (Monica). Only one NTPT student, Bob, reported poor integration of his life commitments, which he ascribed to procrastination: “I procrastinated, I’m chaotic, but in the second semester I got a top mark [in a course]. I mean, being chaotic doesn’t mean you’re a bad student”.

#### **5.4.4.4. Time pressure and time conflicts**

Roughly, half of the students in each profile experienced a lot of time pressure and conflicts in their first year. Some (Patrick, Juan, Beth) felt time pressure at the end of the semester, when approaching holidays before sitting exams; while other participants (Paula, Jessica, Sonia)

experienced time conflicts due to procrastination. However, even when indulging in last-minute cramming, these procrastinators did not feel severe anxiety: “I don’t get nervous under pressure. It’s when I work best” (Sonia). Other learners had different reasons: more study load in the second semester (Mark), or changes in their work schedule combined with difficult learning design: “I started working mornings, and had to drop out of a course – too many overlapping activities... I didn’t have a personal life, and it hurts taking time out of my weekend and of sleep” (Becky). Few others were stressed out because of time conflicts, but self-managed them well: “[I didn’t feel] too much time conflict, but it did make me anxious... I always had this issue in my mind, but the distress was not severe enough to make me ill. Such anxiety is associated to a sense of responsibility, but I can cope with the overload” (Monica). Interestingly, many participants felt time pressure but highlighted that they were used to it and even profited from it: “I work well under pressure. I need it, even. If we don’t have this pressure with deadlines approaching, we don’t do it as well. I’d rather work under pressure” (Michael). Joe stressed the power of personal motivation stemming from liking course content and degree: “Sometimes I had hundreds of pages to study. In the beginning you say, ‘Overwhelming!’ But then you begin to study and you like it, you keep studying and it’s like eating popcorn...”. Hellen, despite having very good time management skills, had too many overlapping commitments, falling behind in her studies – but managing to continue: “I didn’t submit activities, when I had [on-campus] midterms, because I didn’t have the time. Managing [this] stress? Well, keep going, like I’ve always done”.

#### **5.4.4.5. Health and anxiety**

Accordingly, most (11) participants did not report health or anxiety issues due to time poverty and conflicts, even whilst managing many concomitant commitments (James); Sonia and Henry said they never felt such issues. However, nine participants reported them. Two felt constant anxiety, but without ill health: “I feel this constant anxiety, ‘I must study!’, when I don’t study as constantly as usual. But I always get things done. It’s not excessive” (Monica). Others felt a little distress due to study load and scarce time, or when facing deadlines and overlapping commitments. Noticeably, except for Sonia, all the NTPT learners experienced anxious and stressful periods.

#### **5.4.5. Related factors**

##### **5.4.5.1. Motivations to persist**

The vast majority cited more than one source of motivation. Most participants (17) mentioned *personal goal* as their main reason to persist in their studies; among these, seven also mentioned *vocation* or personal interest in the field of studies: “I’ve always liked Psychology, and I liked the courses. This personal interest was my motivation” (Sonia). Together with these intrinsic motivations, ten participants also mentioned their *professional advancement*: “To get my degree ASAP, so I can work and become independent” (Juan). Only one participant (Joe) said his motivation was *pleasure* and *personal growth*, and Martha mentioned gaining *practical knowledge*. Five participants mentioned *open access* – the *flexibility* of open-entry policy offering the opportunity to study a HE degree.

#### **5.4.5.2. Satisfaction**

Another source of motivation is student satisfaction. Most participants were satisfied (10) or very satisfied (seven) with their OHE studies. Many were thankful for their flexibility: “I’m super happy, you can organize yourself the way you want” (Paula). Many mentioned satisfaction with the OHE system, their academic advisor and instructors, and the results they got. Only three participants were somewhat satisfied, reporting dissatisfaction with bureaucracy (Sarah), degree emphasis (not practical) (Beth), or with the academic advisor and uninteresting courses (Ingrid).

#### **5.4.5.3. Support received**

Most participants mentioned several forms of support in their first year: family, friends, employer encouragement, among others. Nine participants thanked their instructors and academic advisors, and the motivation they gained from their personalized support and attention. “My academic advisor, I love him. Any doubt I have, he’s attentive, advises and encourages and supports me. He’s key to my persistence” (Jessica). However, two participants criticized the typical “impersonal” treatment they received from faculty: “My advisor, I don’t know how she speaks or looks, she never wrote anything to me in a personal way” (Bob). Peer support was mentioned less often. Only two NTPT students mentioned they had no support; Paula said she had not needed any, and Sarah said she relied completely on her self-determination: “It’s difficult to motivate and support you through the computer. But I’m self-motivated and the courses motivate me”.

#### **5.4.5.4. Persistence or withdrawal?**

Finally, we asked students whether they had contemplated stopping out or dropping out because of time challenges. Seven participants said they had considered taking a break, for varied reasons – four of them intrinsically related to time challenges: due to time-pressured, stressful moments, and failing a course (Juan, Mark), increased workload and financial issues (Joe), and getting pregnant (Monica). However, their intrinsic motivations and self-determination allowed them to persist. Only Beth contemplated taking a break or even dropping out, but because of her dissatisfaction with the (theoretical) degree emphasis. Interestingly, almost all NTPTs thought about stopping out in their first year. However, most participants (12) said these options had not crossed their minds: “No way!” (James), “Quite the opposite – I want to enroll in more courses” (Michael). “Time is gold – I want to find my limit. The sooner I get the degree, the better” (Bob).

## **5.5. Discussion**

Some findings of this study were predictable and expected, as they are supported in prior persistence literature (e.g., Kara et al., 2019). However, results clearly show that even persistent OHE students, including full-time and traditional ones, experienced several time challenges that often heavily affected their learning journeys and desire to persist in their first year. The ways our participants experienced and managed such challenges, embedded in their individual life contexts, varied considerably.

Noticeably, none of our persisters had prior OHE experience, which is quite influential in student success, particularly in the first semester (Greenland & Moore, 2021). Most participants chose OHE because of its flexibility – which makes sense, as most OHE learners tend to be time-poor and have different commitments. For many students, open OHE offers the opportunity to continue education despite the challenges of family, work, and distance (Holder, 2007) – which, however, will remain time-consuming and juggled with OHE responsibilities. Behind such choice is the optimistic expectation that OHE will provide time flexibility to study “anywhere, anytime” – a problematic promise that may generate misconceptions (Veletsianos et al., 2021).

Inaccurate expectations regarding study load and time required for study were common, especially among NTPT learners, and represent important factors for first-year dropout (Henry, 2018). Up to 65% of open university students reported they had to study for longer than they expected; for them, time can prove unmanageable (Thorpe, 2009). In our study, most persistent students had accurate expectations, or thought that OHE would be *more* demanding – which made it easier for them to persist. However, several participants expected OHE to be easier and less time-consuming - a common preconception closely linked to open entry (Lee et al., 2019), underestimating workload and time required to balance academic and professional obligations – which often implies falling behind in courses (Korstange et al., 2020). Students need realistic understandings of the time commitments required to be successful (Veletsianos et al., 2021); accurate expectations facilitate student satisfaction and motivation, especially during the critical first year (Henry, 2018). However, even those participants who fell behind and failed courses managed their situation sufficiently well to persist. For some, intrinsic motivation and satisfaction (liking and learning subjects) strengthened their efforts to succeed and continue, which accords with the literature (Thorpe, 2009).

Participants voiced several transition difficulties, to which they were forced to adapt. Some had difficulties with the virtual environment, which often consumed precious time. Comfortableness with the virtual campus is an important theme related to online persistence (Dews-Farrar, 2018). Many students who had previous on-campus experience made comparisons of asynchronous OHE with face-to-face learning. OHE’s absence of physical and temporal co-location with peers and instructors and the need to learn autonomously requires more time and effort, representing an important challenge of self-directed online learning (George et al., 2021). Being used to face-to-face learning and lacking prior OHE experience, learners struggled to adapt to the novelties and requirements of OHE – which takes time. However, with experience, persisters eventually learn know-hows – how to navigate the virtual campus and schedules, and the appropriate strategies to self-regulate their learning (Lee et al., 2019). Most participants managed to do so and then found the online system advantageous, collaborating to their persistence. Nonetheless, some participants did not manage to adapt in their first semester, suffered time conflicts, fell behind and failed courses; falling behind and not being able to catch up is strongly connected to dropout (Greenland & Moore, 2021), but they managed to adapt later and persist.

The time challenges experienced were quite varied, and self-regulated learning (SRL) was deemed crucial to deal with them and persist (Stephen et al., 2020). In the SRL literature, persistence itself is considered a SRL strategy – to persist when confronted with academic challenges is a resource management strategy (Broadbent & Poon, 2015). Unsurprisingly, most participants reported good time study management and self-organization, which are among the SRL strategies with the strongest findings for academic persistence and achievement (Broadbent & Poon, 2015; Holder, 2007). Even learners with a heavy workload tend to persist and succeed, provided they have or *develop* good time management skills to deal effectively with conflictive demands (Hart, 2012) – and this was reported by several participants. Satisfaction and motivation were seen as drivers for such; motivation driving learning maintains use of SRL strategies to persist, even under challenging conditions (Broadbent & Poon, 2015).

Nevertheless, many students reported academic procrastination, sometimes connected to lack of interest and personal motivation. Students tend to procrastinate on tasks they do not like but must be done; flexibility and increased freedom may lead to procrastination, making motivation more critical (Veletsianos et al., 2021). Higher levels of procrastination are related to lower levels of self-regulation, poorer learning outcomes, and dropout (Michinov et al., 2011). Although procrastinators tended to experience heavy time pressure, some reported they managed to improve their skills under pressure, pass their courses, and persist.

The time management strategies reported were diverse; most are similar to the ones found by Lee et al. (2019) among Open University Korea adult persisters. Most participants employed *constant dedication*, as did 80% of the participants in Lee et al.'s (2019) study. Students who are most successful, particularly females, employ scheduled patterns of study as self-managed commitments (Veletsianos et al., 2021). *Keeping ahead* of assignment deadlines and *dovetailing* were also common, but less so in Lee et al.'s (2019) study. Many learners had to *borrow time* from other commitments to insert study time in their routines. It seems persisters must develop and adapt the routines and strategies that work for them according to their specific life conditions (Lee et al., 2019). Nonetheless, *deadline-driven time dedication*, *last-minute cramming* and *procrastination* were also common. Although these strategies are usually more associated with dropout and failure (Michinov et al., 2011), results are mixed in the literature (Veletsianos et al., 2021); in our case, students who employed them persisted, even when they failed a course.

However, balancing different commitments alongside the study load remained a difficult challenge for most students, which is connected to withdrawal intention (Grau-Valldosera et al., 2018). Though some had to pay a steep price in terms of time and effort, the majority managed to strike a good work-study-home balance. Flexibility worked for them in that regard – even when allowing for procrastinating. Work-study-home conflict affected mostly the non-traditional learners, due to procrastination or work and family care responsibilities, which was expected (Carney-Crompton & Tan, 2002). Female students are more affected by the latter, as they are more likely to be primary caregivers. Yet, persisters maintain motivation despite conflicting commitments and show resilience, working through difficulties (Holder, 2007).

However, most learners experienced time pressure because of such conflicts, especially when facing heavy workload compounded by procrastination, or changes in work circumstances. Time pressure is one of the main difficulties for first-year OHE students (Thorpe, 2009), but persists with high self-determination, discipline, and autonomy manage to succeed (Holder, 2007). When they do and persevere, some feel more motivated – feeling a sense of achievement is a common motivation theme (Lee et al., 2019), particularly among females (Brown et al., 2015).

Time pressure generated stress and anxiety in half of our sample. Time conflicts are associated with greater stress, anxiety, and depression in adult learners (Carney-Crompton & Tan, 2002), and online student anxiety and cognitive overload are dropout influencers (Greenland & Moore, 2021). NTPTs often feel tiredness and exhaustion, and anxiety is more common among female, full-time, first-year learners who often face caregiving responsibilities and unpaid household work (Veletsianos et al., 2021). Nonetheless, many participants worked well under pressure and anxiety, and were sufficiently motivated to persevere.

Several motivations to persist were reported. The most common was personal motivation, goal, and growth. Intrinsic motivation is key to success in OHE (Brown et al., 2015). Indeed, students' SRL involves the capacity to organize behavior guided by their motivations and goals, which is a significant factor for success (Broadbent & Poon, 2015). Other participants were motivated by professional advancement. Students whose study choices are aligned with clear career goals tend to be well motivated (Brown et al., 2015). Others mentioned flexibility and open access as motivators and source of satisfaction; flexibility and convenience of OHE programs are positively related to persistence (Dews-Farrar, 2018). Accordingly, most participants were very satisfied with their study experience. Persistence is strongly informed by students' academic performance and satisfaction; and satisfaction is informed by accurate student expectations and academic performance (Henry, 2018). A few participants reported dissatisfaction with specific aspects of OHE. Dissatisfaction and boredom induced procrastination and intention to stop out in some students, being negatively related to persistence (Michinov et al., 2011).

Most participants had varied sources of support in their first year. Persisters score higher in emotional support, especially by family and partner (Holder, 2007). Almost half of our persisters highlighted support received from advisors and instructors as a source of learning satisfaction and motivation. Instructor support and connection play a critical role in student retention (Hart, 2012), and orientation programs may increase retention through early elucidation of student expectations and clear advising (Henry, 2018). However, some participants saw the problem of impersonal treatment by faculty as a difficulty. One-on-one personal communication (Greenland et al., 2021) and high-quality personalized feedback are powerful influences on student achievement (Henry, 2018). Few persisters said they had no support. It is known that family, peer, instructional, and institutional support are essential for persistence in OHE (Dews-Farrar, 2018). However, a few learners manage to persist even when they do not have support or feel dissatisfied with it, probably due to their self-determination.

Online students are more likely to belong to profiles that are more adaptive and less reliant on collaboration with others (Broadbent & Poon, 2018).

Despite facing many hardships, most participants did not consider the possibility of stopping out or dropping out – which signals persistence and self-determination when facing challenges, so long as they did not have major study-life changes (e.g., pregnancy, changing jobs, health issues) (Lee et al., 2019). However, many learners (and most NTPTs) contemplated taking a break in their first year, for reasons intrinsically connected to time challenges: most felt overwhelmed and torn between the pressure of study and work or the care of dependents, a common issue with NTPTs (Brown et al., 2015), and faced the need to prioritize other life demands over studying, a key withdrawal factor (Greenland & Moore, 2021). This result confirms a key finding of the retention literature: the dominant situational challenge for most OHE first-year students (including traditional ones) is time management, in the sense of balancing study, work, family, and life obligations (Dews-Farrar, 2018). Yet, our participants overcame such challenges and persevered in their learning journeys. Hellen summarized the experience of most persisters: “I was very overwhelmed, I didn’t have the time. Managing this strain? Well, keep going, like I’ve always done”.

While this study offers valuable insights into time challenges in first-year OHE, its limitations should be highlighted. First, our sample was diverse but relatively small and not intended to be statistically representative – we sought to capture the diversity of students’ experiences with varied profiles. Second, our sample was recruited from one Spain-based open university, which limits generalization. However, it can be argued that the findings have relevance for other countries and universities given the identification in this study of factors seen in previous research. Lastly, this study was conducted prior to the global pandemic, which may have changed considerably the dynamics and perceptions of time and persistence.

## **5.6. Conclusion**

Given the high dropout rates in OHE, and their likely increase due to the compulsory transition to online education with the global pandemic, it is paramount to understand the time challenges that affect student persistence in their foundational year to foster retention. This qualitative study aimed to explore the experiences of time among first-year online persistent students from their own perspective, thus providing a novel comprehension of the first-year student experience in OHE. For them, time challenges were crucial in their first semester and appeared connected to student factors and situational barriers: their time management skills or procrastination, life circumstances, unrealistic expectations, and lack of prior OHE experience. Time pressure and conflicts were commonplace, and the struggle to juggle study time with multiple priorities was seen as the main difficulty. However, our persisters proved resilient; indeed, persistence refers to continuous effort despite the presence of challenges or difficulties. To deal with the latter, most students relied on their SRL strategies, varied forms of support, intrinsic motivation, and learning satisfaction. However, even those with poor time management skills, unpredictable schedules, and heavy work-family duties managed in their

second semester to adapt to the huge demands that OHE places on their personal responsibility, made sacrifices to accommodate studies, and persisted.

As for recommendations, temporal factors should therefore guide course design, calibrating workload and pace of learning and flexibilizing assessment; specialized academic advisory, especially for new students during induction and throughout the first year, to set achievable goals and prevent unrealistic expectations; personalized support, particularly to non-traditional students with multiple commitments; and early interventions to improve student time management and SRL strategies, offering planning tools. Future research could explore comparatively such time experiences with cohorts from different programs, compare them with the experiences of students who withdrew, and further explore and evaluate effective time-focused interventions to foster persistence.

#### *Abbreviations*

HE: Higher education; NTPT: Non-traditional part-time student; OHE: Online higher education; SRL: Self-regulated learning; UOC: Open University of Catalunya.

#### *Acknowledgements*

With the support of a doctoral grant from the UOC. We also thank Cristina Laplana Gomez and Jordi Serres Marimon for their help with the recruitment and sampling process, and Josep Antoni Martínez Aceituno and the eLearning Innovation Center for managing the economic compensations offered to participants.

## **5.7. References**

- Ashby, A. (2004). Monitoring student retention in the Open University: Definition, measurement, interpretation and action. *Open Learning*, 19(1), 65-77. <https://doi.org/10.1080/0268051042000177854>
- Broadbent, J., & Poon, W. (2015). Self-regulated learning strategies & academic achievement in online higher education learning environments: A systematic review. *Internet and Higher Education*, 27, 1-13. <https://doi.org/10.1016/j.iheduc.2015.04.007>
- Brown, M., Hughes, H., Keppell, M., Hard, N., & Smith, L. (2015). Stories from students in their first semester of distance learning. *The International Review of Research in Open and Distributed Learning*, 16(4). <https://doi.org/10.19173/irrodl.v16i4.1647>
- Carney-Crompton, S., & Tan, J. (2002). Support systems, psychological functioning, and academic performance of nontraditional female students. *Adult Education Quarterly*, 52(2), 140-154. <https://doi.org/10.1177/0741713602052002005>
- Castells, M. (2000). *The information age: economy, society and culture*. Blackwell.
- Dews-Farrar, V. (2018). *Students' reflections and experiences in online learning: A qualitative descriptive inquiry of persistence*. [Doctoral dissertation]. Grand Canyon University. <https://search.proquest.com/docview/2036952458>
- George, A., McEwan, A., & Tarr, J. (2021). Accountability in educational dialogue on attrition rates: Understanding external attrition factors and isolation in online law school. *Australasian Journal of Educational Technology*, 37(1), 111-132. <https://doi.org/10.14742/ajet.6175>



- Greenland, S., & Moore, C. (2021). Large qualitative sample and thematic analysis to redefine student dropout and retention strategy in open online education. *British Journal of Educational Technology*. <https://doi.org/10.1111/bjet.13173>
- Grau-Valldosera, J., Minguillon, J., & Blasco-Moreno, A. (2018). Returning after taking a break in online distance higher education: From intention to effective re-enrollment. *Interactive Learning Environments*, 27(3), 307-323. <https://doi.org/10.1080/10494820.2018.1470986>
- Hart, C. (2012). Factors associated with student persistence in an online program of study: A review of the literature. *Journal of Interactive Online Learning*, 11(1), 19-42. <http://www.ncolr.org/jiol/issues/pdf/11.1.2.pdf>
- Henry, M. (2018). *The online student experience: An exploration of first-year university students' expectations, experiences and outcomes of online education*. [Doctoral dissertation]. Edith Cowan University. <https://ro.ecu.edu.au/theses/2059Holder>
- Holder, B. (2007). An investigation of hope, academics, environment, and motivation as predictors of persistence in higher education online programs. *Internet and Higher Education*, 10(4), 245–260. <https://doi.org/10.1016/j.iheduc.2007.08.002>
- Kahu, E., Stephens, C., Zepke, N., & Leach, L. (2014). Space and time to engage: Mature-aged distance students learn to fit study into their lives. *International Journal of Lifelong Education*, 33(4), 523–540. <https://doi.org/10.1080/02601370.2014.884177>
- Kara, M., Erdoğan, F., Kokoç, M., & Cagiltay, K. (2019). Challenges faced by adult learners in online distance education: A literature review. *Open Praxis*, 11(1), 5-22. <https://doi.org/10.5944/openpraxis.11.1.929>
- Kember, D. (1989). A longitudinal-process model of drop-out from distance education. *The Journal of Higher Education*, 60(3), 278–301. <https://doi.org/10.2307/1982251>
- Korstange, R., Hall, J., Holcomb, J., & Jackson, J. (2020). The online first-year experience: Defining and illustrating a new reality. *Adult Learning*. <https://doi.org/10.1177/1045159519892680>
- Lee, K., Choi, H., & Cho, Y. (2019). Becoming a competent self: A developmental process of adult distance learning. *Internet and Higher Education*, 41, 25-33. <https://doi.org/10.1016/j.iheduc.2018.12.001>
- Lee, Y., & Choi, J. (2011). A review of online course dropout research: Implications for practice and future research. *Educational Technology Research and Development*, 59(5), 593–618. <https://doi.org/10.1007/s11423-010-9177-y>
- Michinov, N., Brunot, S., Le Bohec, O., Juhel, J., & Delaval, M. (2011). Procrastination, participation, and performance in online learning environments. *Computers & Education*, 56(1), 243–252. <https://doi.org/10.1016/j.compedu.2010.07.025>
- Myers, F., Glover, H., & Stephens, C. (2021). Learner interrupted: understanding the stories behind the codes—A qualitative analysis of HE distance-learner withdrawals. *Journal of Further and Higher Education*, 45(8), 1134-1146. <https://doi.org/10.1080/0309877X.2021.1931061>
- Patton, M. (2015). Sampling, qualitative (purposeful). In G. Ritzer (Ed.), *The Blackwell Encyclopedia of Sociology*. Blackwell. <https://doi.org/10.1002/9781405165518.wbeoss012.pub2>

- Powell, R., Conway, C., & Ross, L. (1990). Effects of student predisposing characteristics on student success. *International Journal of E-Learning and Distance Education*, 5(1), 5–19. <http://www.ijede.ca/index.php/jde/article/download/368/259?inline=1>
- Rovai, A. (2003). In search of higher persistence rates in distance education online programs. *Internet and Higher Education*, 6(1), 1–16. [https://doi.org/10.1016/S1096-7516\(02\)00158-6](https://doi.org/10.1016/S1096-7516(02)00158-6)
- Sánchez-Gelabert, A., Valente, R., & Duarte, J. (2020). Profiles of online students and the impact of their university experience. *International Review of Research in Open and Distributed Learning*, 21(3). <https://doi.org/10.19173/irrodl.v21i3.4784>
- Schreier, M. (2012). *Qualitative content analysis in practice*. Sage Publishers.
- Stephen, J., Rockinson-Szapkiw, A., & Dubay, C. (2020). Persistence model of non-traditional online learners: Self-efficacy, self-regulation, and self-direction. *American Journal of Distance Education*. <https://doi.org/10.1080/08923647.2020.1745619>
- Thorpe, M. (2009). Perceptions about time and learning: Researching the student experience. In U. Bernath, A. Szücs, A. Tait, & M. Vidal (Eds.), *Distance and e-learning in transition: Learning innovation, technology and social challenges* (pp. 457–472). ISTE.
- Tinto, V. (2017). Reflections on student persistence. *Student Success*, 8(2), 1-8. <https://doi.org/10.5204/ssj.v8i2.376>
- Veletsianos, G., Kimmons, R., Larsen, R., & Rogers, J. (2021). Temporal flexibility, gender, and online learning completion. *Distance Education*, 42(1), 22-36. <https://doi.org/10.1080/01587919.2020.1869523>
- Xavier, M., & Meneses, J. (2020). *Dropout in online higher education: A scoping review from 2014 to 2018*. eLearn Centre/Universitat Oberta de Catalunya. <https://doi.org/10.7238/uoc.dropout.factors.2020>
- Yin, R. K. (2003). *Case study research: Design and methods* (3rd ed.). Sage Publishers.

## CHAPTER 6

# DROPOUT, STOPOUT, AND TIME CHALLENGES IN OPEN ONLINE HIGHER EDUCATION: A QUALITATIVE STUDY OF THE FIRST-YEAR STUDENT EXPERIENCE\*

### Abstract

Early dropout in online higher education remains a complex challenge intrinsically linked to stopout behaviour. Time poverty and time-related conflicts seem to be central for these phenomena; however, time issues have seldom been studied from the perspective of learners. This qualitative study explored retrospectively the lived experiences of time among first-year students who withdrew from an open university. Content analysis of in-depth interviews with 16 undergraduate learners examined comparatively how they experienced and managed time and how time challenges impacted their decision to withdraw. Findings indicate that time poverty and time-related conflicts were the main factor behind such decision, especially for part-time non-traditional learners, and that the foundational semester was crucial. Time challenges appeared connected mostly to student and situational factors: students' life circumstances, time management or procrastination, and unrealistic expectations. Life circumstances affecting health, family, or work were the most important factor for the majority, particularly the dropouts. While stopouts managed to improve their time-conditions and re-enrol later, most dropouts failed to balance academic duties with time-consuming personal commitments. Two temporal models are presented, connecting the main reported factors with the students' foundational semester and lifeload. These insights into time challenges can advance student-informed strategies to foster student retention.

**Keywords:** dropout; stopout; online higher education; first-year experience; dropout factors; time

### 6.1. Introduction

#### 6.1.1. Background: The problems of dropout and stopout

Over the last two decades, the complex problem of high dropout rates in online higher education (OHE) has been widely investigated, attempting to identify predictor variables and profiles of at-risk students (Bawa, 2016). Early dropout, especially during the first year of enrolment, is typical of OHE programmes, sometimes reaching 50% of first-year students; in open universities, dropping out is the norm (Simpson, 2013). Stopout (enrolment breaks) rates in online programs are higher than in on-campus programmes (James, 2020) and often lead to programme dropout and non-graduation (Grau-Valldosera et al., 2018). According to Simpson (2013), 'the biggest problem in distance education is student dropout' (p. 117).

---

\* Xavier, M., Meneses, J., & Fiuza, P. J. (2022). Dropout, stopout, and time challenges in open online higher education: A qualitative study of the first-year student experience. *Open Learning: The Journal of Open, Distance and e-Learning*. <https://doi.org/10.1080/02680513.2022.2160236>

Dropout is commonly defined as a student's failure to enrol for a definite number of successive semesters. However, the issue is controversial and there is an array of different dropout definitions in the literature (Xavier & Meneses, 2020). In this study, dropout was operationalized as non-enrolment in a programme for two consecutive semesters. Persistence represents the opposite of dropout, alluding to successful course completion and continuous enrolment. Stopout refers to students who have not maintained continuous enrolment for a period (in our case, one semester) but do return and re-enrol. Thus, withdrawal can be temporary (stopout) or definitive (dropout). Of course, dropouts may also return to the university at any time (after two or more semesters of non-enrolment), which is one of the main difficulties in operationalizing definitions and comparing dropout and stopout behaviour: the time frame for being considered a dropout is relatively arbitrary. However, as most re-enrolments happen within the first year of studies (Rodríguez-Gómez et al., 2016), the two semesters window seems to provide a good operational definition.

The factors that influence dropout and persistence in OHE have been widely investigated (Kara et al., 2019). Reviewing key dropout factors, Lee and Choi (2011) found that among the most important ones were student factors such as academic skills and background, time management skills, and motivation; course and program factors like course design and academic support; and environmental factors such as work situation, family and job responsibilities, and life circumstances. Stopout factors in OHE are very similar to dropout factors, but stopouts are more predisposed to effectively re-enrol when they have previous academic experience and career motivation for studying (Grau-Valldosera et al., 2018).

This study focuses on the first-year experience, which is critical for student retention and success (Henry, 2018) and the period during which most attrition occurs in OHE (Simpson, 2010). That may happen for a variety of reasons. Online learning is largely self-regulated and dependent upon the students' agency, skills, and ability to manage conflictive commitments. Many learners begin their studies without previous OHE experience, lacking academic preparedness and familiarity with the OHE model and what it requires. Hence, first-year transition can be particularly strenuous for online learners (Korstange et al., 2020).

#### ***6.1.1.1. The time-factor for dropout and stopout***

Although reviews typically mention several factors correlated with dropout in OHE, time-related challenges appear to be key factors that influence performance, persistence, and attrition: time poverty (paucity of quantity and quality of time: Wladis et al., 2020) and time-related conflicts (Simpson, 2013; Xavier & Meneses, 2018), inadequate time management skills, and ability to juggle multiple responsibilities (Lee & Choi, 2011).

These issues are influenced by both OHE and student characteristics, particularly for first-year learners. First, the vast majority of OHE students are time-poor: busy, non-traditional part-time learners with time-consuming, competing work and/or family demands (Samra et al., 2021), which have been correlated with higher levels of time poverty and stress (Wladis et al., 2020). Thus, the temporal and spatial *flexibility* offered by asynchronous OHE is the main attraction and need for them; however, flexibility can also be a source of stress and conflict between

different commitments (Wladis et al., 2020). Second, the students' *misconceptions* or unrealistic expectations regarding the workload, time, discipline, and effort required by OHE (Bawa, 2016), and *overestimation* of their own readiness, available time, and capacities (Korstange et al., 2020). Third, self-regulation skills, especially *time management* to deal effectively with OHE demands and job/family commitments, are essential for success and persistence (Broadbent & Poon, 2015). Students with a heavy workload tend to persist and succeed, provided they have good time management skills to deal effectively with competing demands and remain motivated (Katiso, 2015). On the other hand, *academic procrastination* and poor time management are connected to poor performance and higher dropout rates (Michinov et al., 2011). Lack of time and procrastination are primary reasons for students failing or dropping an online course (Ashby, 2004). That may lead to 'inter-semester' procrastination (stopout): postponing enrolment continuance, which commonly leads to degree/institution attrition.

In sum, conflictive demands and time poverty raised by engaging with OHE degrees seem to be central for stopout and attrition, the main challenge being integrating personal and professional life with academic duties and carving out time to study (Grau-Valldosera et al., 2018). Thus, time is by far the biggest challenge for student persistence in the first year (Simons et al., 2018). Ashby (2004) found that the most important reasons for dropout were 'the difficulties students have in juggling their studies with other aspects of their lives', concluding that 'time is clearly a major issue for Open University students' (p. 72).

### **6.1.2. Justifications**

Although time-related issues seem to be a key factor behind withdrawal from OHE, they are seldom studied (McNeill, 2010); research usually does not address the time-factor *specifically*. Dropout is a complex phenomenon, hardly graspable by quantitative methods alone; it demands in-depth qualitative inquiry to understand the reasons given by students in the context of their experiences and circumstances (Greenland & Moore, 2021). Yet, there is a dearth of qualitative inquiry on the lived experiences of online first-year students linking OHE learning with the rest of the student's life (Kahu et al., 2014). One of the reasons is that dropouts are notoriously difficult to track and recruit for qualitative research once they abandon the university (Porter, 2003). Comparing first-year experiences among non-traditional and traditional and full-time and part-time students is critical for understanding how to remedy such OHE issues, as there may be fundamental differences between these cohorts (Henry, 2018). Moreover, comparing the perspectives of learners who leave the university prematurely (dropouts) and learners who take an early break but do manage to return (stopouts) allows for generating insights on the common problems both cohorts face – but also on what may distinguish them. Their experiences may also complement the literature, which usually focuses on persistence and retention, providing a completer and more situated picture of OHE dropout. This has become exceedingly important with the exacerbation by the impact of COVID19 of the *online turn* - the growing trend in higher education (HE) towards transitioning to online teaching (Xavier & Meneses, 2021). With HE institutions being compelled to adopt online delivery overnight, the problem of first-year OHE dropout will likely become even more pressing (Kember et al., 2021).

### **6.1.3. Research aim**

To address such research gaps, the main aim of this study is to examine how first-year OHE students experienced and managed their time and how it impacted their stopout behaviour or dropout, comparing their respective profiles.

## **6.2. Methods**

### **6.2.1. Setting**

This research was carried out at the Open University of Catalonia (UOC), a fully online university characterized by flexibility of admission, permanence, and enrolment requirements, and the employment of asynchronous delivery and continuous assessment. UOC's typical students (~90%) are non-traditional learners: adults with jobs and/or family responsibilities. The dropout rate in UOC undergraduate programmes is 57.6%, with first-semester dropouts accounting for nearly half of this total; almost half of the new students drop out in the first year. There is a strong relationship between early stopout and dropout; 80% of UOC students who take a break in the second semester become true dropouts, leaving the university (Grau-Valldosera et al., 2018).

### **6.2.2. Design and participants**

This single qualitative case study (Yin, 2003) employed an exploratory, cross-sectional, ex-post-facto design, and an interpretive approach. To broadly represent the different profiles of first-year learners, a purposive, criterion-based sampling was employed, using a maximum variation sampling approach (Patton, 2015). Our sample did not mirror the overall distribution of the student population, as our aim was not to obtain a representative sample, but to compare experiences of students with different profiles.

Prospective participants had started their online undergraduate studies at UOC in the Fall 2017 semester and were divided into two groups, according to their re-enrolment status registered in their academic records: stopouts (students who had withdrawn by Spring 2017 but returned in Fall 2018), and dropouts (students who had withdrawn by Spring 2017 and did not enrol for two consecutive semesters). Student profiles were generated according to the following criteria:

- age when started OHE: non-traditional ( $\geq 25$  years-old) or traditional students;
- enrolment: full-time (enrolled in more than 18 credits ECTS) or part-time;
- gender: male or female.

That generated 16 different profiles; we aimed at selecting one student per profile. Out of a cohort of 1916 dropouts and 1076 stopouts, 256 dropouts and 278 stopouts gave consent to be contacted. The research team sent an email to all these eligible students inviting them to take part in the study and obtained 54 positive responses (24 dropouts and 30 stopouts). From this cohort a total of 16 voluntary participants were selected (50% females). However, as we did not manage to find participants for some full-time profiles, they were substituted with part-time learners belonging to similar profiles (Table 1). Each participant was assigned a pseudonym to ensure anonymity. Ethical approval from the relevant university was granted

and all participants gave informed consent before taking part in the study. Each student received a €30 gift voucher as economic compensation and incentive to participate.

Table 1. Participants

	Profile	Dedication	Participant	Age (2017.1)	Other commitments	Previous HE/OHE experience
S T O P O U T S	Traditional (<25 y-o)	Part-time	John	22	Full-time job (FT) + family care	On-campus
			Anna	23	Part-time job (PT)	None
			Clara	21	PT + studies 2 degrees	OHE + On-campus
		Full-time	Aline	21	PT + 2 degrees	On-campus + distance HE
	Non-traditional (≥25 y-o)	Part-time	Chris	32	FT	On-campus
			Beth	42	FT + baby care	On-campus + distance
			Judith	53	FT + family care	Distance
		Full-time	Tony	29	FT	Distance
	D R O P O U T S	Traditional	Part-time	Mark	18	Part-time education
Zoe				22	2 degrees	On-campus
Full-time			* No volunteers found			
Non-traditional		Part-time	Robert	29	FT	On-campus
			Charles	30	FT	On-campus
			Edward	26	FT	On-campus
			Mar	30	None	On-campus
			Jessica	38	FT + family care	Distance
		Full-time	Paul	35	FT + son (2 <sup>nd</sup> semester)	On-campus

### 6.2.3. Data collection

In-depth hour-long semi-structured interviews were conducted (mostly in person; four via Skype) during the second half of the Fall 2018 semester, employing open-ended questions to elicit information on the students' personal experiences. Students were asked about their reasons for non-re-enrolment and their experiences in their first year of studies – focusing on time-related issues, deduced from the literature explored above: time management, procrastination, time pressure and its effects, and suchlike. Aiming at in-depth breadth of inquiry, questions also explored students' motivations, reasons for choosing OHE, support received, and demands (see examples of guidance questions in Appendix A [below]). Interview protocols are available upon request.

#### **6.2.4. Data analysis**

The interviews were transcribed verbatim and iteratively analysed using Schreier's (2012) qualitative content analysis, searching for selected aspects of meaning that were relevant to the research aims. A double coding process was developed to generate the main common themes and subthemes from the interviews. The first author read all the interviews several times and produced a trial coding, which was then discussed with the second author, revising and expanding the emergent coding scheme with refined understandings and insights, until a final coding was agreed upon by both authors.

#### **6.2.5. Limitations**

This is an exploratory, preliminary study geared towards identifying key issues to inform future studies with larger samples. Our sample was relatively small and recruited from one open university, which limits generalization. However, we sought to capture the diversity of students' experiences with varied profiles. Thus, our findings may be useful for other OHE settings with diverse student populations. The timeframe (two semesters of non-enrolment) chosen to characterize dropouts is also problematic. Although unlikely, dropouts may in fact be taking a break of one year or more from their studies but return later. However, in retrospective studies, their experiences must be recent. Lastly, this study was conducted prior to the COVID pandemic, which may have changed considerably the dynamics and perceptions of time and withdrawal.

### **6.3. Results**

This section summarizes our results as regards the study's aims, employing illustrative vignettes. For reasons of clarity, our findings are structured according to the main themes and subthemes developed and discussed comparatively, first in relation to dropout participants and then to stopouts.

#### **6.3.1. The first-semester experience**

##### ***6.3.1.1. Transition difficulties***

Most students who dropped out experienced several difficulties in their first semester, mostly with course design and getting adapted to the novelty of the OHE system. Younger, traditional part-time students (TPTs) stressed that: Mark had serious trouble with courses, ascribed to lack of previous experience, resources, and face-to-face teacher support. Zoe had problems with her courses due to programme and course design – 'in my programme, there were weekly assignments' - and with the specificities of the asynchronous online delivery mode, to which she was not used:

[It] forces you to organize [your learning] yourself. Of course, the instructors will explain [the content] and help you, but you won't go to a certain place every day where a physical person explains everything to you, or to whom you can say 'Look, I didn't understand what you just explained'. Such change is shocking.

That also appeared in two reports of non-traditional part-time students (NTPTs): 'I hadn't studied for seven years. I lost the [study] habits, their time structure and time dedication. In my case, as I didn't have many references nor colleagues... it's hard to adapt, and meanwhile



you're losing time' (Charles). Lack of previous OHE experience led them to comparisons with what they expected from a face-to-face delivery mode: 'Because it's not face-to-face, not synchronous... In comparison, the feedback is very slow' (Edward). However, three NTPTs (Robert, Mar, and Jessica) and the non-traditional full-time (NTFT) dropout (Paul) said that, far from having problems with the OHE system, they quite liked it, especially its flexibility, which allowed them autonomy to self-manage their time.

Transition and OHE system difficulties were less prevalent among the stopouts, but three part-time students mentioned them. 'First semester, you don't know how to find stuff' (Anna); 'Being online, that is, not having a teacher who explains things to you, and your doubts as well' (Beth). Full-time stopouts did not mention such issues. It seems lack of academic preparedness for the online education model impacted dropouts and stopouts alike, but especially the former. Noticeably, with the exception of Clara, all students in both groups had no previous OHE experience; two (Anna, Mark) had no prior HE experience at all, while the others had it, either in face-to-face or distance (but not online) modes, although some of them had acquired it many years before.

#### **6.3.1.2. Student expectations**

The gap between students' misconceptions and expectations and their actual experience also contributed to non-re-enrolment. With one exception, all dropouts had unrealistic expectations, which were either externally attributed to online studies in general (i.e., that their studies would be less demanding in terms of time and effort) or internally attributed (i.e., that students would have more available time or be more dedicated). External attribution was mentioned more often: 'I expected I'd dedicate less time. I didn't suppose I'd have assessment activities that'd take more of my time than understanding the theory' (Mark). 'I thought it'd be less difficult' (Charles). However, some students blamed themselves: 'Maybe it was my fault, I enrolled in too many credits' (Robert); 'I thought I'd have to devote less. You spend all your time doing work. Perhaps I was too optimistic' (Paul).

Stopouts mentioned less often wrong expectations as impacting their time and difficulties: half of them reported that their expectations in relation to difficulty, demands, and time investment were correct. However, three students reported they had unrealistic expectations regarding themselves. 'I thought I'd be very stable, like, "every day you'll dedicate two hours" [to study], but during the first semester it wasn't like that at all' (Anna). Only Chris thought the studies 'would demand much less'.

#### **6.3.1.3. Motivation for studying**

Student motivations for engaging with OHE studies were markedly different between dropouts and stopouts. Most dropouts (5) and two stopouts had career motivations – furthering professional prospects – but only Chris had a secure promotion when graduating. Most stopouts (6) and three dropouts had mostly personal or vocational motivations. None of the participants had their studies financed by employer, or external (professional) obligation to continue with their studies.

## **6.3.2. Time-related challenges and experiences**

### **6.3.2.1. Time management**

Time management skills and procrastination had a huge impact for most participants, in terms of both their first-year experience and their decision to withdraw. For TPT dropouts, procrastination was an important but not severe problem: ‘If I left the [tasks] for later, I didn’t do them. It happened only close to the end of the semester, Christmas time, the first exams’ (Mark). NTPT dropouts presented distinct experiences: for half of them, procrastination and poor time organisation were deemed crucial. ‘[My] time management skills and organization for the studies: horrible. I’m very chaotic in that regard’ (Robert). ‘There wasn’t a single assignment that I didn’t submit in the latest day. I distract easily, since I was born, minimal effort’ (Charles). However, the other half (Edward, Mar, Jessica) reported they had good time management, provided they had enough motivation. Paul, the full-time dropout, said he had very good time management skills and no procrastination at all.

For the part-time stopouts, time management experiences were mixed. Traditional learners ascribed more importance to their academic procrastination. Anna blamed it for her decision to take a break in her second semester when confronted with course failure and a new, demanding job: ‘I procrastinated. Totally. Because at that time I could afford it. But then having more work hours, more commitments... if I’d procrastinated, I’d have failed the last semester’. ‘I’m very bad at that whole time management thing... Not a problem, though, because I’ve been doing that for years and I know how to manage it’ (Clara). However, John said he had very good time management skills: ‘I like to have everything well-planned’. NTPTs had less problems with such issue; Beth, because of time limitations, improved her skills, and Judith said she had very good time management. The male NTPT, however, decided to take a break because of such issues: ‘I managed very badly my time the first semester. [Procrastination] is my definition as a person. It definitely became a problem [due to] overconfidence in my capabilities’ (Chris). For the full-timers, results were mixed too. The traditional participant adapted well to OHE demands:

As you have [continuous] assignments, which count the most, you must keep abreast. Leaving everything for the end isn’t an option. When I must do something, I just do it. I’ve never been late in a submission in my life because that’s clear to me (Aline).

However, the non-traditional student experienced severe procrastination and cramming in his first semester, which led to poor achievement and the decision to stop out:

I used to do the assessment [assignments] in the last moment. Last semester I tried to change that, and it didn’t happen once. ‘Well, I’ll just leave this for next week’. And when I couldn’t do that, all the tasks kept piling up and eventually you just can’t manage it (Tony).

### **6.3.2.2. Time conflicts and pressure**

Time conflicts and time-pressure, often connected to poor time management and procrastination, impacted most students, at times causing anxiety and health problems, and influencing their decisions to withdraw. Yet, TPT dropouts, who had fairly good time management skills and no serious time pressure, hardly suffered such ailments: ‘Just a little bit. Stress and anxiety due to scant time and myself’ (Mark); ‘Not during the first semester’

(Zoe). However, non-traditional dropouts experienced severe time conflicts because of other concurrent commitments.

Leisure and family life: it's over... I didn't have time to study everything, and when I did study, I slept very little, it took many hours, and I was very stressed out. I felt I only lived for working and studying under stress (Edward).

'Lots of pressure. Then you never see the sun... I was burnt out. Of course, it wasn't just the studies. Mind you, there was also a family factor. And the work factor' (Jessica). However, some felt time pressure because of their poor time management: 'Due to my own lack of management at the individual level, but not because of the workload' (Robert).

Similar patterns appeared with stopout participants. TPT female students with job responsibilities felt serious time conflicts and their effects in terms of anxiety and health: 'There was a moment I felt I didn't have a life anymore' (Anna). 'I tried... like a small boat in the sea that almost sank. I had a sort of anxiety attack, I passed out from exhaustion, so the doctor told me to stop. I felt a lot of pressure' (Clara). Yet, the male TPT did not feel such pressure: 'Passing the courses doesn't stress me much' (John). Among NTPTs, both genders experienced stress and time-pressure: Chris felt 'a lot of stress and anxiety', and Beth said that 'the first semester was super stressful, trying to reach all the results, and also care for my baby girl... a lot of pressure and anxiety'. Both full-time participants felt strong time-pressure: 'In the first semester... I was very stressed out. When the exams are finished, you're almost sick. Then anxiety and stress got me' (Aline). 'Pressure because of family responsibilities, and with work. Pressure especially when you're late with your commitments, overwhelmed and discouraged' (Tony).

#### **6.3.2.3. *Failing courses***

Interestingly, failing or withdrawing from courses did not necessarily follow such time-related issues, but happened often. Among the dropouts, only Charles and Edward failed or withdrew from their courses in their first semester. Among the stopouts, John, Chris, and Tony failed all the courses they had enrolled in. Failing because of lack of organization, time, and preparedness heavily impacted their motivation and determined their decisions to withdraw. Significantly, all these participants were men; however, gender differences are difficult to ascertain here, because all of them were enrolled in rather demanding programmes (Computer Sciences) with high dropout rates. The other participants completed all their first semester courses.

#### **6.3.3. Main dropout and stopout motives**

The main reasons given by our participants for withdrawing confirm the overwhelming importance of the time-factor. Apart from Judith and Robert, NTPTs who left their studies mainly due to economic reasons, all the other students in our sample reported that time poverty was the main reason for their decision. Life circumstances and external stressors were blamed for that by 12 participants. Personal health issues (Clara's severe burnout) or of a family member (John's wife), unexpected job changes such as increased workload (Anna, Aline, Chris, Mark, Zoe), or family care circumstances (Beth, Paul) made these learners so time-poor that they decided to stop their studies, prioritising work and family. In many cases, poor time

management and lack of OHE experience intensified such problematic situation. For instance, Charles's job and family routines changed unexpectedly – but he recognized that his lack of online experience, inadequate enrolment choices, and poor self-organization also impacted severely his time availability and studies. However, two dropouts (Edward and Mar) blamed their self-regulation skills, and not external circumstances, for their time paucity and subsequent withdrawal. Finally, Beth summarized what almost all of our participants experienced before leaving their studies: 'It had everything to do with time. Time is the issue. My problem is time. And that's it'.

#### **6.3.4. Main reasons for returning**

Stopout participants gave different reasons for their re-enrolment in the third semester, after taking a break. However, apart from Judith, whose economic situation improved, all the other participants mentioned changes in life circumstances that allowed them to have more time availability: less work hours due to changing jobs or diminishing workload (Anna, Tony), coupled with improvement of health and anxiety issues (Clara); less family care (Beth); graduating in a second, parallel degree (Aline); and a family health matter being resolved (John). Finally, some dropouts (Paul, Mar) mentioned they considered returning to their studies when and if their life (and time) circumstances changed.

### **6.4. Discussion**

First, to sum up the main differences found between our profiles: stopouts were mostly part-time students, most of them females. For students who withdraw in the first semester, the likelihood of returning and staying is higher among women (Sánchez-Gelabert et al., 2020). Non-traditional stopouts took enrolment breaks mostly because of work conflicts leading to failure to strike a balance between different commitments. However, there were no NTFT female stopouts, and few traditional learners. It was also difficult to find full-time dropouts, and we did not find any NTFT female dropouts. (Apart from that, there were few gender differences in our sample). While these student profiles represent small minorities at UOC, full-time students in general are more likely to have fewer external responsibilities (work and children) and to graduate, being less prone to dropout (Simpson, 2010).

Several students faced many transition difficulties, particularly the dropouts. Lack of preparedness and previous OHE experience, often combined with course/program design characteristics (too many or overlapping assignments, course difficulty), generated severe strains upon students' engagement and time. New, unexperienced students are particularly prone to dropping out (Grau-Valldosera et al., 2018), especially from difficult courses (Wladis et al., 2014). First-year transition is most critical in shaping persistence decisions, but it can be especially challenging for online students (Henry, 2018). Getting adapted to the OHE model is thus likely to be more difficult for them, especially when they do not have previous OHE experience (Greenland & Moore, 2021), and impact considerably their time-availability and persistence.

Student unrealistic expectations were also reported as important issues, principally by dropouts. According to the literature, new-entry online students often take broad university messages that they can study when, what, and how they want, and that online learning is easier due to such flexibility (Hyllegard et al., 2008). That may generate misconceptions and inaccurate expectations, such as underestimation of time demands and workload (Korstange et al., 2020), which later impact their time-availability, motivation, and performance. Students need realistic understandings of the time commitments required to be successful (Veletsianos et al., 2021); accurate expectations and feasible goals facilitate student satisfaction and motivation during the critical first year (Henry, 2018). However, some students overestimated their own readiness, available time, and capacities. Good estimation of the time required to balance academic and professional obligations is a key factor that influences persistence and attrition in OHE (Lee & Choi, 2011). Therefore, comprehending and managing students' perceptions of their skills, time-availability, and expectations is crucial for their academic success.

In many reports, time-related issues were exacerbated by procrastination and poor time management, especially among NTPT learners. Time management is essential for persistence and successful e-learning (Lee & Choi, 2011). On the other hand, academic procrastination is strongly and negatively related to persistence and performance (Michinov et al., 2011). As OHE students are much more pressured to self-regulate their learning and independently plan and self-manage time (Broadbent & Poon, 2015), procrastination and cramming may impact their persistence even more. Most participants fell behind in their courses and, because of procrastination, poor planning, and conflictive commitments, considered withdrawing. When they failed courses and felt demotivated, such decision was strengthened. Indeed, retention is strongly informed by students' academic performance and satisfaction (Henry, 2018). However, a few students managed to change poor time management habits after stopping out. In contrast with other studies (Michinov et al., 2011), some even achieved success in their courses, despite procrastinating.

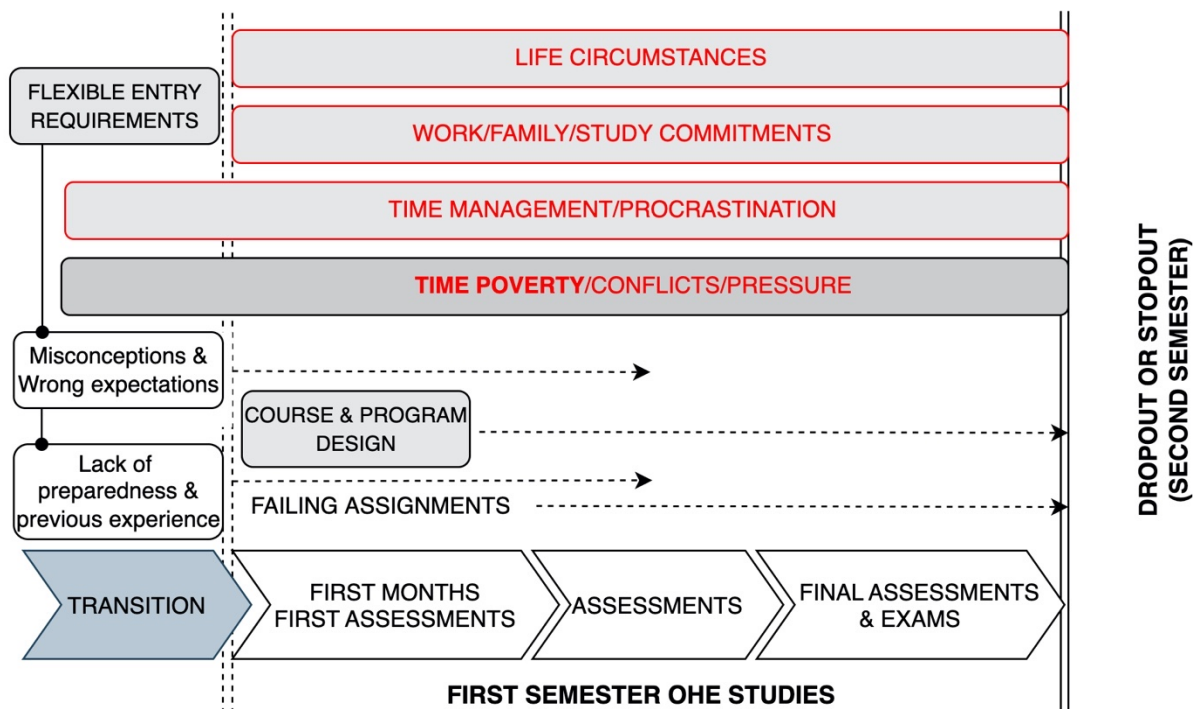
Time conflicts and time-pressure often caused important health and anxiety issues in non-traditional dropouts and female stopouts. Female first-year online students tend to experience more feelings of anxiety, and unpaid caring responsibilities and work-family-study conflicts are connected to higher levels of distress and likelihood of withdrawal (Waterhouse et al., 2020).

In the students' voices, the most important reason for their withdrawal falls under the umbrella of *life circumstances* (Lee & Choi, 2011): family, personal, and employment factors strongly connected to the learners' life context that deeply affect their available time and their learning journeys (Samra et al., 2021). Indeed, juggling study load with work and familial commitments is by far the most important challenge for first-year, non-traditional OHE students (Kara et al., 2019). Conflicts between work, studies, and family responsibilities are negatively related to academic achievement, and affect more the non-traditional female learners, who are more likely to be primary caregivers (Veletsianos et al., 2021). In our sample, male participants tended to feel less time-pressure and its effects, possibly because they had fewer family care

commitments. However, unexpected life circumstances often played a crucial role – *situational factors* such as illness and unanticipated work and care changes increase the risk of dropout (Wladis et al., 2020). Therefore, negative social integration (Kember, 1999) – failing to integrate study demands with personal and professional life – appeared as the key factor for withdrawal. Thus, although time issues and lack of time are among the main dropout factors in the literature (Lee & Choi, 2011), for our students they were overwhelmingly the most important one and appeared strongly correlated with stopout behaviour as well.

Figure 1 summarizes our findings as a temporal model, focusing on the studies and the main factors that affected student time and attrition in their first semester. The first months and initial assessment activities are crucial for non-re-enrolment and heavily influenced by prior student factors (misconceptions, lack of preparedness, time poverty, and poor time management). As most new-entry students are already time-poor before commencing studies (Selwyn, 2011), with some being used to procrastinating, the time poverty and time management bars ‘begin’ before the first semester. These factors which may be influenced by open-entry policies (allowing admission of unprepared students) and compounded by course/programme design. Such factors may induce failure in assessment activities, which is most influential for withdrawal. Several other issues also influence time conflicts and time-poverty – the main predictors for withdrawal - throughout the first semester; the main ones are life circumstances and balancing personal and professional life with studies (work/family/study commitments). Thus, time-related factors – the three red bars - may ‘pile up’, inducing severe time conflicts and pressure, and lead to withdrawal.

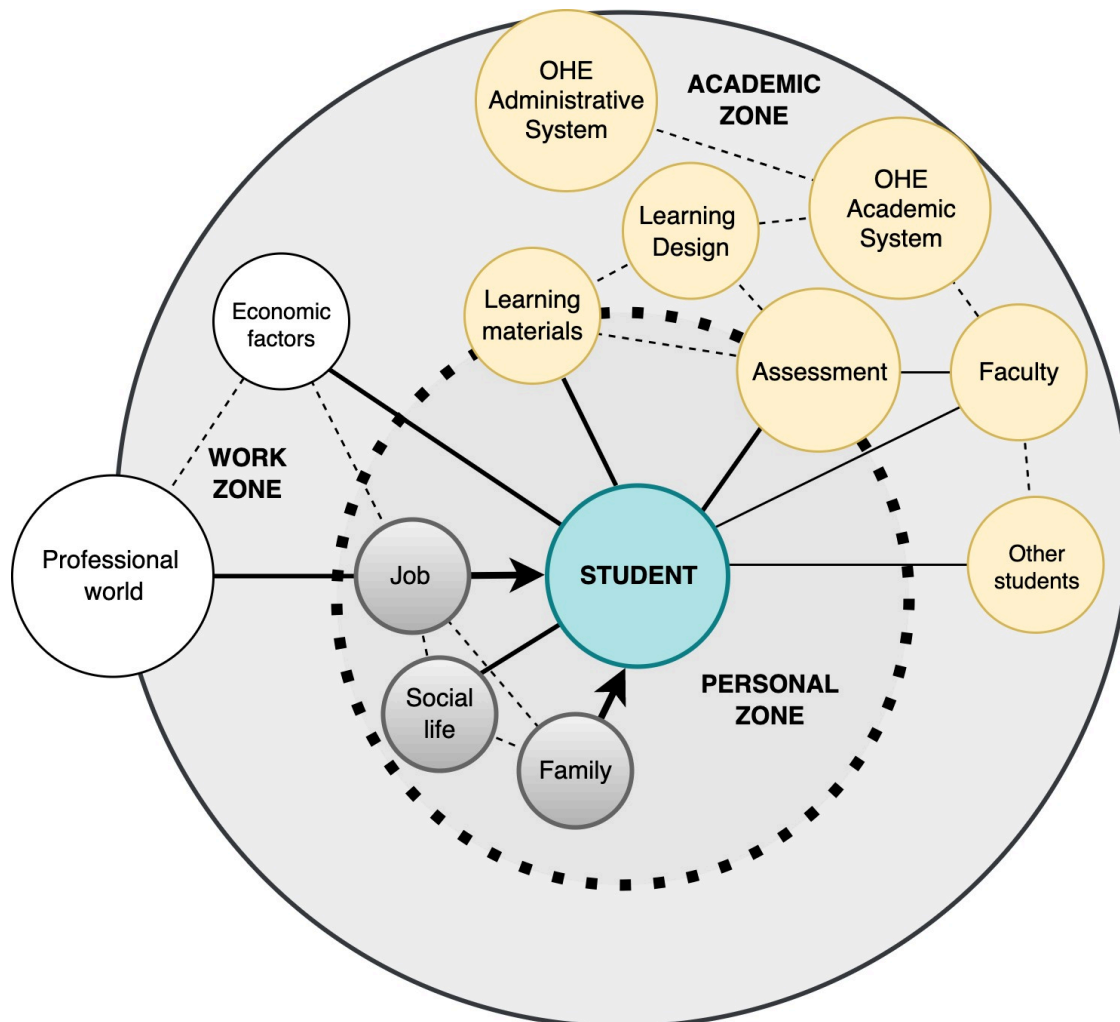
Figure 1. First-semester temporal model for time-factors and withdrawal



In sum, time is a critical, constitutive context in which students are situated, and which permeates all aspects of their lived experience (Oliphant & Branch-Mueller, 2018). For most

OHE learners, time is a scarce resource, which they struggle to consume and manage together with their studies – the economics of time use (McNeill, 2010). Inspired by McNeill (2010), Figure 2 illustrates schematically the interactive life spheres that influenced students' experiences of time - their *life context* behind Figure 1, which focuses on their studies.

Figure 2. Student interactional network and lifeload



Three main zones – personal, academic, and work-economic – compete for students' time commitment in their daily lives. The solid lines represent the main time demands and pressure. The distribution of time allocated to the different zones and their spheres affects the student's *lifeload*, the sum of all the time pressures a student faces in their life, which is a critical factor for persistence (Kahu et al., 2014). In the students' voices, their personal zone was their priority, while the academic zone was less relevant (McNeill, 2010). Thus time-related factors that produced too many conflicts with the personal zone (especially with family/work), building time-pressure within it and leaving scarce time for study, were the main reasons for the student deciding to withdraw. Noticeably, job and family care tended to require more time from NTPTs, particularly from female learners. Course/programme factors in the academic zone affect more directly the student through learning design/materials and assessment, often demanding unforeseen/unavailable time, which must be vied with demands from the personal zone. Competing priorities, particularly if derived from student and situational factors or

unexpected commitments, jeopardize continuance and cause considerable stress (Henry, 2018). Education is usually the third priority, with work and family demands first (Selwyn, 2011). Faced with severe time conflicts in their struggle to integrate study into their daily lives, and having no external obligation to continue studying, students usually prioritise the personal zone (family/work) and eventually choose to abandon their studies.

## 6.5. Conclusions

Given the high dropout rates in OHE, and their likely increase in the future due to the online turn and the global pandemic, it is paramount to understand why students choose to withdraw in their foundational year, to prevent this phenomenon and foster retention. The purpose of this qualitative study was to explore and compare the experiences of time among dropout and stopout first-year online students, in their own voices. Although we started with a very general question – ‘why did you decide to drop out or stop out?’ -, in the students’ perception time-related issues were the main factor behind their decisions, especially for the NTPTs– an experience that is likely representative of the overall student population at UOC. The time factor seems to be crucial in the first semester, particularly for dropout, and appeared connected mostly to student factors and situational barriers: their life circumstances, time management or procrastination, and unrealistic expectations – which were often influenced by lack of previous OHE experience and academic preparedness. Programme and course factors that impacted time – course design and difficulty, continuous assessment, and programme routes – were mentioned less often by the stopouts. In most cases, when time poverty and time-related conflicts were felt as insurmountable, affecting deeply the student’s health and/or family/work commitments, they led to programme withdrawal. Stopouts gave varied reasons for their return to the studies: their life or work situation changed; or, profiting from their first semester experience, they felt they would be able to adjust their routines, course choice, and workload. But, in their first semester, they all suffered from the same ‘time afflictions’ as the dropouts did. In sum, our study confirmed that the main self-reported explanation for the decisions to not re-enrol or leave the university is *time* – but the factors that influence time are complex and often interrelated with other rationales (motivation, engagement, lack of skills, course difficulty, etc.). Given the exploratory nature of this study, we cannot ascertain whether these findings are different for face-to-face-only students or not; but in the OHE students’ voices, time challenges were certainly the major withdrawal factor for them – even for traditional and full-time learners.

As for recommendations to foster persistence, time issues should therefore guide course and programme design (paying particular attention to calibrating workload and pace of learning), specialized academic advisory (especially for new students during induction and enrolment, and throughout the first year, so as to prevent unrealistic expectations and set achievable goals), personalized and proactive support (e.g., to non-traditional students with job and/or family commitments), and interventions (e.g., to improve time management and organizational skills, offering planning tools and strategies) (Samra et al., 2021). While broad life circumstances – the main factor affecting students’ time-challenges and withdrawal – are hardly amenable to institutional interventions, the latter should try to ameliorate their impact, perhaps via flexibilising assessment and progression routes (Xavier & Meneses, 2021). Future research



could explore comparatively such time-related experiences with cohorts from different programmes, compare them with the experiences of persistent students, and further explore effective time-focused interventions to foster success.

### **Acknowledgements**

With the support of a doctoral grant from the UOC. We also thank Cristina Laplana Gomez and Jordi Serres Marimon for their help with the recruitment and sampling process, and Josep Antoni Martínez Aceituno and the eLearning Innovation Center for managing the economic compensations offered to participants.

## **6.6. Appendix A**

### **6.6.1. Guidance questions for the interview (translated from the original language)**

Some examples (summarised) of interview questions:

- Why and when did you decide not to re-enrol? Your reasons had to do with your time?
- Can you describe a typical week for you during your first semester? Did you manage to balance the studies with your personal, familial, and working life? How?
- How much time did you expect to dedicate to the studies, before starting them?
- Such expectation was correct? Or the studies demanded more than you expected? Did technological issues influence this matter in any way?
- How do you evaluate your time management abilities? And what strategies did you use to manage your time and conciliate studies with the rest of your life?
- Procrastination – did you procrastinate in your first semester? Did it become a problem? Why? And what were the causes, in your opinion?
- Did you feel pressure or anxiety in your first semester? Did it have to do with time or not?
- If you felt pressure and anxiety, how did this whole situation affect your health?
- (In the case of stopouts): Why and how did you manage to return to the university after taking a break? What changed?
- (In the case of dropouts): Have you thought about returning to your studies and re-enrolling?

## **6.7. References**

- Ashby, A. (2004). Monitoring student retention in the Open University: Definition, measurement, interpretation and action. *Open Learning*, 19(1), 65-77. <https://doi.org/10.1080/0268051042000177854>
- Bawa, P. (2016). Retention in online courses: Exploring issues and solutions – A literature review. *Sage Open*, 6(1). <https://doi.org/10.1177/2158244015621777>
- Broadbent, J., & Poon, W. (2015). Self-regulated learning strategies & academic achievement in online higher education learning environments: A systematic review. *The Internet and Higher Education*, 27, 1-13. <https://doi.org/10.1016/j.iheduc.2015.04.007>
- Grau-Valldojera, J., Minguillón, J., & Blasco-Moreno, A. (2018). Returning after taking a break in online distance higher education: From intention to effective re-enrollment. *Interactive Learning Environments*, 27(3), 307-323. <https://doi.org/10.1080/10494820.2018.1470986>

- Greenland, S., & Moore, C. (2021). Large qualitative sample and thematic analysis to redefine student dropout and retention strategy in open online education. *British Journal of Educational Technology*. <https://doi.org/10.1111/bjet.13173>
- Henry, M. (2018). *The online student experience: An exploration of first-year university students' expectations, experiences and outcomes of online education*. [Unpublished doctoral dissertation]. Edith Cowan University. <https://ro.ecu.edu.au/theses/2059/>
- Hyllegard, D., Deng, H., & Hunter, C. (2008). Why do students leave online courses? Attrition in community college distance learning courses. *International Journal of Instructional Media*, 35(4), 429-434.
- James, H. (2020). *Stop-out factors for nontraditional students in online competency-based education programs*. [Unpublished doctoral dissertation]. University of New England. <https://dune.une.edu/theses/297/>
- Kahu, E., Stephens, C., Zepke, N., & Leach, L. (2014). Space and time to engage: Mature-aged distance students learn to fit study into their lives. *International Journal of Lifelong Education*, 33(4), 523–540. <https://doi.org/10.1080/02601370.2014.884177>
- Kara, M., Erdoğan, F., Kokoç, M., & Çağiltay, K. (2019). Challenges faced by adult learners in online distance education: A literature review. *Open Praxis*, 11(1), 5-22. <https://doi.org/10.5944/openpraxis.11.1.929>
- Katiso, A. (2015). *Online adult students' time management skills and their academic achievement and persistence: Technology-based learning and student success*. [Unpublished doctoral dissertation]. Keiser University.
- Kember, D. (1999). Integrating part-time study with family, work and social obligations. *Studies in Higher Education*, 24(1), 109-124. <https://doi.org/10.1080/03075079912331380178>
- Kember, D., Leung, D., & Prosser, M. (2021). Has the open door become a revolving door? The impact on attrition of moving from elite to mass higher education. *Studies in Higher Education*, 46(2), 258-269. <https://doi.org/10.1080/03075079.2019.1629411>
- Korstange, R., Hall, J., Holcomb, J., & Jackson, J. (2020). The online first-year experience: Defining and illustrating a new reality. *Adult Learning*, 31(3), 95-108. <https://doi.org/10.1177/1045159519892680>
- Lee, Y., & Choi, J. (2011). A review of online course dropout research: Implications for practice and future research. *Educational Technology Research and Development*, 59(5), 593–618. <https://doi.org/10.1007/s11423-010-9177-y>
- McNeill, W. (2010). *The time-use of distance learners: A study of international postgraduate students engaged in professional career development*. [Unpublished doctoral dissertation]. University of London. <https://discovery.ucl.ac.uk/id/eprint/10006518/>
- Michinov, N., Brunot, S., Le Bohec, O., Juhel, J., & Delaval, M. (2011). Procrastination, participation, and performance in online learning environments. *Computers & Education*, 56(1), 243–252. <https://doi.org/10.1016/j.compedu.2010.07.025>
- Oliphant, T., & Branch-Mueller, J. (2018). 'Doing the courses without stopping my life': Time in a professional Master's program. *International Review of Research in Open and Distributed Learning*, 19(4). <https://doi.org/10.19173/irrodl.v19i4.3237>
- Patton, M. (2015). Sampling, Qualitative (Purposeful). In G. Ritzer (Ed.), *The Blackwell Encyclopedia of Sociology*. Blackwell. <https://doi.org/10.1002/9781405165518.wbeoss012.pub2>
- Porter, S. (2003). Understanding retention outcomes: Using multiple data sources to distinguish between dropouts, stopouts, and transfer-outs. *Journal of College Student Retention*, 5(1), 53-70. <https://doi.org/10.2190/NV6H-55NG-8EYW-EKGP>
- Rodríguez-Gómez, D., Meneses, J., Gairín, J., Feixas, M., & Muñoz, J. (2016). They have gone, and now what? Understanding re-enrolment patterns in the Catalan public higher

- education system. *Higher Education Research & Development*, 35(4), 815-828.  
<https://doi.org/10.1080/07294360.2015.1137886>
- Samra, R., Waterhouse, P., & Lucassen, M. (2021). Combining and managing work-family-study roles and perceptions of institutional support. *Distance Education*, 42(1), 88-105.  
<https://doi.org/10.1080/01587919.2020.1869530>
- Sánchez-Gelabert, A., Valente, R., & Duarte, J. M. (2020). Profiles of online students and the impact of their university experience. *The International Review of Research in Open and Distributed Learning*, 21(3), 230-249. <https://doi.org/10.19173/irrodl.v21i3.4784>
- Schreier, M. (2016). *Qualitative content analysis in practice*. Sage Publishers.
- Selwyn, N. (2011). 'Finding an appropriate fit for me': Examining the (in)flexibilities of international distance learning. *International Journal of Lifelong Education*, 30(3), 367-383. <https://doi.org/10.1080/02601370.2011.570873>
- Simons, J., Beaumont, K., & Holland, L. (2018). What factors promote student resilience on a level 1 distance learning module?. *Open Learning: The Journal of Open, Distance and e-Learning*, 33(1), 4-17. <https://doi.org/10.1080/02680513.2017.1415140>
- Simpson, O. (2010). '22% - can we do better?' - *The CWP Retention Literature Review Final Report*. Open University UK. <https://doi.org/10.13140/RG.2.2.15450.16329>
- Simpson, O. (2013). Student retention in distance education: are we failing our students? *Open Learning: The Journal of Open, Distance and e-Learning*, 28(2), 105-119.  
<https://doi.org/10.1080/02680513.2013.847363>
- Veletsianos, G., Kimmons, R., Larsen, R., & Rogers, J. (2021). Temporal flexibility, gender, and online learning completion. *Distance Education*, 42(1), 22-36.  
<https://doi.org/10.1080/01587919.2020.1869523>
- Waterhouse, P., Samra, R., & Lucassen, M. (2020). Mental distress and its relationship to distance education students' work and family roles. *Distance Education*, 41(4), 540-588.  
<https://doi.org/10.1080/01587919.2020.1821606>
- Wladis, C., Wladis, K., & Hachey, A. (2014). The role of enrollment choice in online education: Course selection rationale and course difficulty as factors affecting retention. *Online Learning*, 18(3). <http://doi.org/10.24059/olj.v18i3.391>
- Wladis, C., Hachey, A., & Conway, K. (2020). External stressors and time poverty among online students: An exploratory study. In S. Softic, D. Andone, & A. Szucs (Eds.), *EDEN Proceedings, 2020 Annual Conference* (pp. 172-183). European Distance and E-Learning Network.
- Xavier, M., & Meneses, J. (2018). The time factor in studies on dropout in online higher education: Initial review of the literature and future approaches. In J. M. Duarte, & A. Szucs (Eds.), *Proceedings of the 10th EDEN Research Workshop: Towards Personalized Guidance and Support for Learning* (pp. 357-363). European Distance and E-Learning Network. [http://www.eden-online.org/wp-content/uploads/2018/11/RW10\\_2018\\_Barcelona\\_Proceedings.pdf](http://www.eden-online.org/wp-content/uploads/2018/11/RW10_2018_Barcelona_Proceedings.pdf)
- Xavier, M., & Meneses, J. (2020). *Dropout in Online Higher Education: A scoping review from 2014 to 2018*. eLearning Innovation Center, Universitat Oberta de Catalunya.  
<https://doi.org/10.7238/uoc.dropout.factors.2020>
- Xavier, M., & Meneses, J. (2021). The tensions between student dropout and flexibility in learning design: The voices of professors in open online higher education. *International Review of Research in Open and Distributed Learning*, 22(4), 72-88.  
<https://doi.org/10.19173/irrodl.v23i1.5652>
- Yin, R. (2003). *Case study research: Design and methods* (3rd ed.). Sage Publishers.

## CHAPTER 7

# THE TENSIONS BETWEEN STUDENT DROPOUT AND FLEXIBILITY IN LEARNING DESIGN: THE VOICES OF PROFESSORS IN OPEN ONLINE HIGHER EDUCATION\*

### Abstract

Flexibility is typical of open universities and their e-learning designs. While it constitutes their main attraction, promising learners will be able to study “anytime anyplace”, it is also a cause for student dropout, demanding more self-regulation and engagement. This case study explored the professors’ experiences of flexibility in e-learning design and continuous assessment, and their perception of the risks and opportunities that more flexibility would imply for persistence and dropout. In-depth interviews with 18 full professors, who are the e-learning designers of undergraduate courses at the Open University of Catalonia (UOC), were analyzed employing qualitative content analysis. In the professors’ voices, the main causes for dropout are mainly student-centered yet connected to learning design: workload and time availability, student expectations, profiles, and time management skills. In their view, flexibility has both positive and negative effects. Some are conducive to engagement and persistence: improvement of personalized feedback, formative assessment, and module workload; while others generated resistance: more flexibility may increase workload, procrastination, dropout, and risk of losing professorial control, and be a threat to educational standards and quality. Untangling the tensions between dropout and flexibility may enhance learning design and educational practices that prevent student dropout. Stakeholders should focus on measures perceived as positive, such as assessment extension, personalized feedback and monitoring, and calibration of course workload. As higher education is globally turning to online delivery, due to the viral pandemic, such findings may be useful in both hybrid and fully online educational contexts.

**Keywords:** online higher education, learning design, continuous assessment, flexible learning, persistence, dropout

### 7.1. Introduction

Learning design (LD) can be defined as “the practice of devising effective learning experiences aimed at achieving defined educational objectives in a given context” (Mor et al., 2015, p. 221), impacting many aspects of the students’ experience. Course design and learning environment are key factors for dropout and persistence (Lee & Choi, 2011). As central elements of LD, assessment and feedback are key drivers for e-learning (Armellini & Aiyegbayo, 2009). Assessment is probably the principal contact between student and teacher; feedback on

---

\* Xavier, M., & Meneses, J. (2021). The tensions between student dropout and flexibility in learning design: The voices of professors in open online higher education. *International Review of Research in Open and Distributed Learning*, 22(4), 72-88. <https://doi.org/10.19173/irrodl.v23i1.5652>

assignments is often the main vehicle for teaching (Simpson, 2003). Continuous assessment (CA), through continuous feedback, can thus be used to improve student learning, achievement, and persistence (Nguyen et al., 2017).

Dropout represents one of the greatest challenges faced by online educators and administrators, as online higher education (OHE) courses have significantly higher student dropout rates than conventional courses (Lee & Choi, 2011). However, the problem of dropout has become exceedingly important for both OHE and higher education (HE) stakeholders, as we face the “online turn” – the growing trend in HE towards transitioning to online teaching (Han et al., 2019), which has recently been exacerbated by the impact of COVID-19, forcing HE institutions to adopt online delivery overnight (Naylor & Nyanjom, 2020).

Dropout can be broadly defined as withdrawal and non-completion of a course or program (Xavier & Meneses, 2020). However, for our purposes in this study, *dropout* refers to withdrawal from a course’s CA process. *Persistence* is synonymous with success and the opposite of dropout: a multi-faceted phenomenon defined as completing a course and continuing to program completion (Hart, 2012). Student engagement is associated with success and persistence; it is contingent on both the institution’s structures, policies, actors, and practices, and how students avail themselves to opportunities for engagement (Dexter, 2015). Thus, dropout, persistence, and engagement depend on the learners, the institution (LD and faculty), and external factors (time pressures and life circumstances such as family, health, work, and financial issues). In this study, we focus primarily on the roles of LD and flexibility.

Flexibility is considered the most crucial element of part-time distance learning. Flexible learning addresses the differences in needs, preferences, and skills between students by providing them different choices regarding what, where, when, why, and how to learn, supporting personalized learning and a student-centered approach (Soffer et al., 2019). Flexibility has become the main attraction of OHE, especially for busy, time-poor non-traditional students (Butcher & Rose-Adams, 2015). Open OHE promises learners they will be able to study when, how, and what they want – “anytime anyplace”, a claim that has been criticized (Houlden & Veletsianos, 2019). However, flexibility is also a cause for student dropout, for it demands more self-regulation, self-motivation, and time management skills, and can lead to procrastination. Hence, there is an on-going debate on whether to provide more or less flexibility in OHE and the impact it may have upon students’ success.

Some authors (Deschacht & Goeman, 2015; Simpson, 2003) defend flexibilization of course design, structure, and workload to accommodate students’ employment challenges (Moore & Greenland, 2017), including assessment policies, points, deadlines, and strategies. “Inflexible barriers resulting from time pressures (especially at assessment points) can increase the stress of juggling competing priorities” (Butcher & Rose-Adams, 2015, p. 133). However, more flexibility and less guidelines may increase the risk of procrastination and place more demands on student self-regulation and motivation. Thus, other authors found flexibility as a variable that predicts student dropout (Michinov et al., 2011). Additionally, offering more flexibility to the learner also places higher demands on instructors, often requiring more time and effort from

them (Nikolova & Collis, 1998), while also diminishing predictability and conditions for planning. However, literature on the critical experiences of professors as learning designers on this matter is scant.

## **7.2. Context of Research**

Our research was done in the context of a fully online open university, the Open University of Catalonia (UOC), which employs a flexible, student-centered e-learning model and an asynchronous mode (Sangrà, 2002). UOC's typical students are non-traditional learners: adults with jobs and family responsibilities; 83% are 30 or over, and 90% study and work (Sánchez-Gelabert et al., 2020). Such profile is more likely to suffer from conflictive commitments, which impact negatively academic performance, thus influencing dropout-proneness (Owen et al., 2017). Dropout rate at UOC is 57.6%, in a long-term, program perspective, with first semester drop-outs accounting for nearly half of this total (Grau-Valldosera et al., 2018).

UOC's LD is characterized by the full integration of CA, of a diagnostic, formative, and summative character, employing graded continuous assessment activities (CAAs), which the student has to submit online according to a pre-established calendar. CA is devised as a mechanism for learning and providing feedback in the learning process. In order to pass a course, students have to succeed in the CA process; in some cases, they have the alternative of only sitting final (face-to-face) summative exams, which are mandatory in undergraduate programs and for which the CA process prepares them. Therefore, dropping out of the CA process does not necessarily imply that the student dropped out of the course or failed it; but it is very often the first and most important step towards attrition. Nonetheless, at UOC dropout from CA is almost synonymous with dropout from or failing in a course. Thus, CA is arguably the prime moment to intervene in terms of dropout – for professors and instructors cannot control inter-semester dropout. Thus, UOC's LD is very structured and competence oriented, yet not very flexible in key aspects: the calendar is usually strict, with definite deadlines for CAAs and exams, and there is no official policy for assignment extensions and the possibility of making up for a missed or failed CAA. Full professors (FPs) are responsible for the e-learning design of courses, including assessment and educational resources and goals, and for supervising the work of instructors. Instructors (part-time adjunct professors) are mainly responsible for teaching courses. Academic advisors support students in everything that is not related to the course itself – enrollment, problem solution in general, and as intermediaries in the communication with other faculty and the institution.

This study was developed in the context of an intervention at the UOC, designed to increase engagement and persistence in the CA process: a seminar of a reflective and formative character, with FPs (learning designers) and experts sharing best practices regarding successful incorporation of flexibility measures in courses, according to their experiences. FPs were invited to apply one or more form of flexibility in their courses, according to their own diagnostics and their course's specific assessment model, type of activities, and learning objectives. Among the different suggested measures intended to make LD and CA more flexible were offering progressive CA; personalized feedback and monitoring; more diversified

learning resources; the possibility of making up for a low mark in a CAA in subsequent CAAs; creating a “CAA0” (ungraded) to induce a smoother entry in the course, and as a diagnosis tool; and accepting assignment extension requests. Grounded on the assumption that LD should be an iterative and collaborative process (Bennett et al., 2009), such formative action was a first step for the subsequent voluntary incorporation of flexibility measures in the FPs’ LD of courses. However, in this study we do not assess their efficacy.

As Veletsianos and Houlden (2019) stressed, flexibility requires further inquiry – how can aspects of open OHE be made more flexible? Which ones may benefit students the most, preventing dropout and fostering engagement and success? Our main focus here is on LD, for, from the professors’ perspective, it is during the course that they can intervene – especially on the CA process and the feedback it may provide. However, there is a dearth of inquiry on the lived experiences of professors (Badia & Chumpitaz-Campos, 2018), especially employing qualitative approaches to investigate the relations between learning design and student persistence. Thus, generating knowledge on the professors’ experiences and perceptions of flexibility in OHE settings may aid OHE institutions to address dropout, retention, and persistence issues, concentrating on early detection and on providing and evaluating the support and interventions needed.

To address such a gap, this research aimed at examining the nature of the professors’ experience of and views about flexibility in e-learning design and continuous assessment, their perception of the main student dropout factors, and the risks and opportunities that more flexibility would imply for persistence, attrition, and engagement.

## **7.3. Method**

### **7.3.1. Design and Participants**

This case study employed an exploratory, cross-sectional, qualitative design. The “bounded entity” (Putney, 2010) we inquired into was the UOC, and its primary unit of analysis (Yin, 2002) consisted of the experiences of UOC professors. A purposive, criterion-based sampling was employed, using a maximum variation sampling approach (Ritchie et al., 2014). Participants included 18 full professors - 50% female, ages ranging from 35 to 59 years ( $M = 46.22$ ,  $SD = 6.59$ ), with experience as learning designers in OHE ranging from 1 to 13 years ( $M = 9.06$ ,  $SD = 4.58$ ) - from the UOC who had participated in the formative seminar. The research team sent an email to all participants inviting them to take part in the study. Professors were randomly selected according to gender and the rates of persistence (lower, average, and higher) in their courses’ CAs in relation to the rates in their respective programs. Thus, three professors – each responsible for a different undergraduate course - per department were selected. Each participant was assigned a code to ensure anonymity (see Table 1). All courses were mandatory, apart from the optional one coordinated by the P2 professor. Courses coordinated by professors P4, P7, P9, P12, P16, and P18 were introductory (first-year) courses. In terms of limitations, our sample is random but relatively small, i.e. it was not intended to be statistically representative. Instead, according to the maximum variation sampling approach,



we sought to collect the diversity of professors' experiences in relation to different study programs, courses, and levels of CA persistence.

Table 1: Distribution of Participants according to Selection Criteria

Department	Lower persistence course	Average persistence course	Higher persistence course
Arts and Humanities	P14, male	P15, male	P9, female
Business and Economics	P8, female	P13, male	P16, female
Computer Science, Multimedia, and Telecommunication	P1, male	P17, male	P5, male
Information and Communication Sciences	P18, male	P4, female	P6, male
Law and Political Science	P10, female	P12, female	P11, female
Psychology and Education	P7, female	P3, male	P2, female

### 7.3.2. Data Collection

In in-depth, face-to-face, hour-long semi-structured interviews, the professors were presented different flexibility measures and asked to reflect upon their convenience and, particularly, how increasing flexibility may impact persistence and dropout in their courses. Interview protocols were developed according to the themes under study, the phenomena and factors that are relevant to them, the specificities of the actors studied, and UOC's LD. Interview questions focused on the following topics: dropout factors; characteristics of course, its CA process, and program; and how the professors perceived different measures in relation to student dropout and the specific course they designed and coordinated. All participants gave informed consent. The study – including data collection, handling, and protection – complied with the university's ethical requirements. Interview protocols are available upon request.

### 7.3.3. Data Analysis

The interviews (in Catalan or Spanish) were transcribed verbatim and analyzed iteratively and manually following Schreier's (2016) established qualitative content analysis, searching for selected aspects of meaning that were relevant to the research aims. Through a double coding (first a trial coding, performed by the first author, and then a final coding, revising and expanding the frame), main themes and codes were generated and agreed upon by the two authors. For reasons of clarity, in the next section we present the results structuring them in terms of the research aims, and not in terms of themes and codes, which are stressed in italics.

## 7.4. Results

This section summarizes our results employing illustrative vignettes and discusses them contrasted with the literature. In the professors' voices, some variables were much more important for dropout; flexibility had different meanings, presenting both positive and negative



effects, and its viability was discussed; and some intervention measures were perceived as more necessary and positive. Longer or shorter experience as OHE learning designers did not seem to affect significantly the professors' perceptions.

#### 7.4.1. Perception of Dropout Factors

In the professors' experience, the main causes for dropout (of CA) in their courses were mainly student-centered – *learner factors* - yet some are connected to e-LD. One of the main factors mentioned was time management skills: the professors perceived that many students who dropped out of their courses were time-poor and/or had poor time management.

It's mainly time-related problems, time management issues. It might be due to professional problems, or family, domestic, job issues... which do not allow students to continue. [Or else] they've enrolled in too many courses and maybe are first- or second-semester students and enrolled in six [courses], then they get overwhelmed and have to prioritize ... It's clearly about lack of planification. (P6).

In that sense, *life circumstances* often play a crucial role: dropouts usually “have some work-related problem, normally it's either work or family [issues]” (P11). Juggling study load with work and family commitments is a major problem for first year, non-traditional students (Kara et al., 2019). *Procrastination* was also seen as a common issue. “It might be that the students are used to engaging with the CAA only in the last week. It seems the [dropout] student is not capable of self-regulation” (P4). However, the literature highlights that self-regulation skills may be less important when the student has little available time (Veletsianos et al., 2021). Anyhow, for the professors, time-related issues were the most reported reason for withdrawal. According to Ashby (2004), the most important dropout variable in OHE is difficulties in juggling studies, work, and life demands; academic procrastination and time-management issues often make such difficulties seem unsurmountable (Michinov et al., 2011). However, blaming the students may be a form of external attribution by the FPs and a means to avoid responsibility for the roles LD and themselves play in dropout. In this case, FPs were possibly adopting *Darwinista* (students drop out because they are somehow unfit) and *Fatalista* (they drop out due to reasons beyond their control) attitudes to student retention (Simpson, 2013).

Connected to that, *student profiles* also matter. First-year students “who enroll late, students who haven't grasped well the [online] campus system or how it works... thus, they are a bit lost and ... they are the profile who misses the first CAAs [and drops out]” (P12). Indeed, new students are particularly prone to dropping out (Grau-Valldosera et al., 2018). Participants also mentioned students' abilities and skills regarding OHE and technology; and many other intrinsic factors related to self-motivation and engagement, such as previous professional and OHE experience. In that regard, they coincided with the literature: individual student success (and dropout) is influenced by the educational environment, including LD and CA, and student characteristics in general, which include digital literacy and previous OHE experience (Day et al., 2018).

The gap between *student misconceptions* and expectations and actual experience also contribute to dropout, especially amongst first-year students:

Learners begin their degrees and, of course, run into reality. It's a university, not an e-learning that is that cool or that easy or that simple (P7).

They are not well-informed. This is a university degree and requires effort. They see it as something super easy (P8).

They were too optimistic regarding what they could undertake (P15).

It seems new-entry learners often take broad university messages that they can study when, how, and what they want, and that online learning is “easier” due to such flexibility (Hyllegard et al., 2008). That may generate misconceptions and inaccurate expectations (Bawa, 2016), such as underestimation of time demands and workload (Korstange et al., 2020), which later impact their motivation, performance, and time availability. Accurate expectations facilitate student satisfaction and motivation, especially during the critical first year of studies (Henry, 2018).

Finally, FPs voiced their concern over the timing of student withdrawal from CA (*early dropout*): most students drop out after the first CAA, not submitting it or else not passing it, and consequently not being able to follow their courses. Others drop out after the second CAA, but this occurs less often. That is important for the prioritization and efficacy of early interventions and appears to happen in other open universities: “Much dropout occurs very heavily in the first few weeks of a first module” (Woodley & Simpson, 2014, p. 461).

#### **7.4.2. Learning Design and Dropout**

Although FPs associated dropout mostly to student factors, they also expressed that many general characteristics of their courses' LD were connected to more dropout. Course and CA *workload* were often mentioned:

The problem is the [course] workload (P2).

Too many CAAs and they require too much work(P9).

Learners who don't get engaged with the first CAA. The learning resources are very extensive (P3).

In general, the more difficult/complex the CA is, the lower will the engagement/performance in the CA be. Courses with high complexity (P5, P8, P10) or extensive course content, and particularly difficult (P5, P10) and too theoretical courses (P7) tended to present high dropout rates. Some FPs (P1, P5) mentioned that their courses *must* be complex and difficult, for they are supposed to provide students with core knowledge and skills. However, the literature stresses that too difficult assignments, and too difficult or demanding courses or programs (Kara et al., 2019), are important challenges to completion. Students' sense of overload may be caused by inadequate LD, impacting their time availability and constraints: “They try to do too many things in too little time” (P4). Time constraints or lack of time – here as consequences of LD – make up one of the main dropout factors in the literature.

Introductory courses (*type of course*) were also problematic, as their attendance is mostly composed of first-year students, who are much more prone to drop out. Moreover, such courses tend to have very large classes, which makes it more difficult for faculty to flexibilize assessment deadlines and provide personalized feedback and support: “We grant [assessment extension requests] only exceptionally. Now, do I think it’d work? No. I don’t think that’s the problem. What happens is that it is titanic... these classes have 70 students” (P7).

LD also involves the design of the interactions between the different actors in OHE, including student support. However, our participants only mentioned such factor peripherally, focusing instead on the roles and attitudes of the different *actors*. For instance, instructors, who are responsible for putting LD into practice, were deemed relevant for dropout and persistence.

The other factor is... the instructor’s teaching practices and presence (P5).

There are instructors who are more empathetic, placing themselves much more in the student’s shoes and do many more actions, while others do the bare minimum. The instructor is a basic element (P12).

Instructor support and connection play a critical role in student retention (Stone & O’Shea, 2019).

Academic advisors were also perceived to play an important role, especially for first-year students: “They can help the ones who are beginning, no? I believe the academic advisor is a key figure when you have a new student. They should know how to help that student pass the CA” (P12). Orientation programs have been shown to increase retention through early elucidation of student expectations and clear advising (Henry, 2018).

#### **7.4.3. Flexible Measures in Learning Design: Risks and Opportunities**

For the FPs, flexibility can have both positive and negative effects in terms of possible benefits and costs/risks. Such perceptions depend mainly on the specific characteristics of their course and students: FPs appraised flexibility measures confronting such characteristics and the expectations for the course they were responsible for.

Some flexibility measures were seen as conducive to engagement and persistence (*engagement measures*). Improvement of personalized feedback, especially for new students and the ones who fail the first CAA, was deemed crucial:

I believe that every accrual in personalized feedback and monitoring can end up resulting in improved learning (P1).

An exhaustive monitoring of these students [is needed], so as to prevent dropout – there’s little we can do, but we make the effort (P12).

The student is very thankful for that. However, it’s a lot of work [for faculty] (P8).

Reducing module content/workload (P2), simplifying learning resources, was also seen as beneficial: “Sometimes the more resources you give them [students], the more you overwhelm

them” (P11). However, sometimes this was seen as ineffectual: “Semester after semester, we’ve been reducing the course workload, but it’s still problematic” (P5). Indeed, according to the literature, high quality personalized feedback is the most powerful influence on student achievement (Mulliner & Tucker, 2017), and diminishing course workload and difficulty may be beneficial for completion (Willging & Johnson, 2009).

Changing LD in terms of the *flexibility of CA practices* was also seen as important, especially the assessment practices that affect the first assignment (e.g. adopting a diagnostic or lighter first CAA): “I’ve done it in my program, it’s very good and we’ve already planned to offer it in the next semester. ... It’s fantastic ... it helps the students to orient themselves better” (P9). Offering reparatory CAAs was deemed beneficial: “Yes, it’s good. Everything that helps saving the student is fine” (P18). However, few FPs perceived flexibilizing deadlines as positive:

Yes, yes, it can foster more motivation. (P13)

It may create a certain chaos, but it can also lead to an absolute personalization (P18).

Flexible deadlines and assessments seem to be important in the literature, for compulsory (and at times overlapping) assignment deadlines and overly defined pace of learning reduce students’ control over their time, placing greater demands on their time management and availability (Henry, 2018). In an inflexible LD with strict deadlines, few CAAs, and no alternatives for failing or not submitting the first assignment, students are faced with only three choices: to persist, so as to benefit from CA feedback and learning; to withdraw; or to sit final exams. “The first CAA ... is like the touchstone. If you pass it, you keep going, if you don’t, you drop out” (P5). In this situation, the first assignment functions as an early exam; if the student fails it and withdraws from the CA process, they will not benefit from assessment feedback – which reduces substantially their possibility of passing the course. Besides, retention is strongly informed by student performance (Henry, 2018).

However, overall such flexibility measures generated strong *resistance*, due to *perceived risks*. Flexibilizing deadlines “is a problem, then you are faced with very complicated dynamics ... in that you don’t have control over such specific issue” (P3). It “creates a disadvantage for the students who follow the calendar ... in the end, you have to maintain certain criteria. It’s detrimental to [education] quality” (P12). For many FPs, more flexibility may increase student workload, procrastination, dropout, and – for faculty - the risk of losing professorial control. “Flexibilizing means giving more time? Then we have screwed it up. If you give more time everyone seizes this second option ... If there’s a limit, there’s a limit” (P3). More flexibility was often seen as a threat to educational standards and quality – demanding less of students and relaxing deadlines and course difficulty, for instance, would eventually produce poorer learning outcomes.

I’ve lowered the course’s academic level. I don’t want to relax it more. (P7)

To lower the standards ... so as to not lose students ... that is, the mixing of business with education, it’s complicated. (P15)

In a sense, many FPs seemed to perceive more flexibility as a weakness; the impression was that many had accepted *some* flexibility but did not want to “give away” more of it because it went against their principles. For Veletsianos and Houlden (2019), such perception is a commonly perceived trade-off required by flexible learning: flexibility might necessarily come at the cost of rigor or other standards. However, professorial resistance may also be connected to traditional arguments from faculty for not changing their practices to be more learner-centered, which involve a shift of power from faculty to learners (Weimer, 2013). This appears to be a central conundrum for the FPs: if retention and dropout are institutional problems, and FPs seemed to think they are important, then how can persistence and engagement be fostered? And how can it be done without endangering what we professors expect students to do (and often they don't)?

Many FPs defended more flexibility, but said it demands more time and effort from faculty (*costs*):

I'm a great advocate of flexibility, but then it has some consequences ... for myself, as a FP, and for my team of instructors. At any rate, it implies [more] time and dedication. (P17)

The idea may be good, but it requires a lot of time [from faculty] so as to put it into practice to make it work. (P5)

What we have to do is to make it viable. (P18)

Class sizes (often with 70 students) hinder the adoption by instructors of flexible measures such as personalized feedback in the course's first weeks, for it would be too time-consuming (P8, P13). Brigham (1992) alludes to a need for “faculty flexibility” so as to develop successfully flexible online courses. However, the literature stresses that flexibility can be a challenge for instructors, implying more workload and time, thus generating resistance (Veletsianos & Houlden, 2019). According to McNaught (2013), “the massive impost of workload on staff within the sector has been a significant issue in the reluctance for staff to engage” with (more) flexible learning (p. 869).

#### **7.4.4. Revisiting the Problem with First-Year Students**

The theme of *first-year students* emerged as a central preoccupation for our professors - including the ones who do not design and oversee introductory courses, for, thanks to open enrollment pathways, a mix of first-year, sophomore, and senior students may be present in any given course. Many FPs fear that first-year students are especially prone to drop out for many reasons: lack of self-regulation skills, less academic preparedness, lack of familiarity with the online education model, time poverty, and so on. Adapting to the CA process is thus likely to be more difficult for them. First-year transition is most critical in shaping persistence decisions (Trotter & Roberts, 2006), but it can be especially challenging for online students (Henry, 2018).

In this sense, the traditionally flexible entry requirements of open universities represent an additional and major problem. Most FPs pointed that *open access* is likely to produce high rates of dropout – which they attempt to remedy implementing some flexibility measures, especially in introductory courses, while remaining resistant to other measures. In other words, they saw a tension between entry flexibility in the programs and then having to flexibilize electronic LD in their courses. Thus, some FPs implicitly defended *less* flexibility for entry (i.e., raising program admission requirements): “If there were an initial filter ... then you can think about where you want the University to go ... you could think about it differently” (P7). One FP mentioned that:

When you try to diminish dropout, you end up lowering [educational standards]. It’s too easy to fall in that trap. Maybe there are too many people in university [degrees] ... there are too many students who simply don’t qualify, and nothing happens. (P16)

Indeed, many of these perceptions seem to be connected to a fundamental tension between *open* and *university* – open universities want and promise to be open and flexible, while striving to avoid the possible consequences (poorer quality and higher dropout rates) in comparison with the traditional, on-campus university model. However, most FPs do not explicitly advocate restrictions to open admission, but rather emphasize the effective management of misconceptions and inappropriate expectations, especially through early academic advising. This is in agreement with the literature: “Make it harder to get in. Not through selection but with brutal honesty about what the students will be getting into ... Make it harder to get out” (Woodley & Simpson, 2014, p. 468). Especially in the case of open universities, which offer flexible open access policies but also stringently demand motivation, self-regulation, and time availability, “‘expectation management’ is the predominant aim, rather than selection” (Delnoij et al., 2020, p. 15).

## 7.5. Conclusion

This paper analyzed the reflections and perceptions among professors on flexibility measures addressing dropout and persistence, born out of sharing common practices and experiences. Based on an agnostic approach regarding flexibility, FPs were invited to experiment and imagine different flexible measures in the specific context of their courses. Confronting the problem and the possible flexibility actions generated difficulties and tensions regarding accommodating students’ needs, changing institutional practices, and fostering student retention, all while preserving standards and education models. In this regard, many specific advantages regarding possible measures were voiced, especially regarding LD, CA, and personalized feedback and support.

However, flexibility was also seen as risky and problematic, given that FPs worried about increasing demands on faculty and perceived a general lack of organization and planification among many students in their courses, which may lead to dropout and failure if more flexibility is offered. In sum, flexibility cannot be viewed as an either-or situation; its adequacy depends on the context (educational model, course, and students), and also on the experiences and viewpoints of professors and learning designers.

In this sense, the widespread claim of “anytime, anyplace” (and “for everyone”) possibilities offered by flexible OHE must be seen through a critical lens (Veletsianos & Houlden, 2019). Students who enter OHE are often unprepared for the huge demands on their self-regulation and time management, and many have unreal expectations; besides, their pace of study is often constricted by strict calendars. For them, while “flexibility can be seen as a virtue, enabling multitasking and fluidity of roles, it can also be seen as a curse, impacting negatively on family life and creating new stress” (Kahu et al., 2014, p. 524). Online studies tend to blur the boundaries between study and home or work, often occasioning conflict between the three spheres, which frequently leads to time poverty and course dropout. Flexible, open entry frequently feeds such conundrum, as it allows access to unprepared students.

Therefore, flexibility in OHE has both positive and negative consequences. That is a problem, for OHE has become traditionally flexible, especially in open universities, where flexibility is seen as a value principle, an ethos essential for inclusion and accessibility (Naidu, 2017). This paper has looked at one open university as a case study, so direct generalization might be difficult. Nonetheless, some of our results might be valid for other open OHE models with asynchronous learning formats based on CA. However, the key issues studied here – the perceptions of professors who are learning designers about flexibility, dropout factors, LD, assessment models, conceptions, and standards of OHE – may be comparable to those observed in other OHE and hybrid HE institutions. Detecting and analyzing such issues can represent an opportunity to review flexibility policies and LD choices. Thus, we recommend further research on the lived experiences of faculty regarding such problems, perhaps comparing the resistances and risks perceived to the ones traditionally connected to the learner-centered learning paradigm and to the tensions between open and (traditional) university models.

That is especially important given what we have termed the contemporary *online turn*: the trend of HE increasingly turning to online delivery and its recent intensification by the global pandemic. Even though this research was performed prior to the emergence of COVID-19, findings suggest that untangling the relations between online flexibility, learning design, and dropout is crucial to prevent attrition in both hybrid and online HE, as well as to ensure that the now much-needed flexibility of OHE is employed with positive results in terms of optimizing retention and success. As most campus-based HE is presently turning to online formats, the results of this debate should be of interest to all educators who now face the inherent problems of the online turn. In this sense, this discussion goes beyond the flexibility measures presented here, which are context dependent. The tensions and opportunities they may generate should therefore be studied in different learning contexts (open, online, hybrid) and HE institutions.

In conclusion, too much flexibility was seen as disorganizing and lacking rigor, lowering the standards of education. It seems that the ideal is *balance* between structure and flexibility. Providing a structured yet flexible classroom environment was seen by students as a key element for effective online teaching (Young, 2006); strict scheduling helps keep some students on track, but too much flexibility poses organizational challenges (Henry, 2018). Professors voiced such fundamental *tension*:

[Faculty] are very flexible. Flexible enough, to a certain extent, because you also have to be fair with the students who follow the calendar, no? ... In this confrontation of positive values, that is, to be flexible but also disciplined, well, we need to find a balance. (P14)

## Acknowledgments

This research was supported by a doctoral grant from the Universitat Oberta de Catalunya. We also thank Dr. Antoni Badia for his collaboration in designing interview protocols; Roger Griset, who conducted the interviews; and Marina Serra for transcribing them.

## 7.6. References

- Armellini, A., & Aiyegbayo, O. (2009). Learning design and assessment with e-tivities. *British Journal of Educational Technology*, 41(6), 922–935. <https://doi.org/10.1111/j.1467-8535.2009.01013.x>
- Ashby, A. (2004). Monitoring student retention in the Open University: Definition, measurement, interpretation and action. *Open Learning*, 19(1), 65–77. <https://doi.org/10.1080/0268051042000177854>
- Badia, A., & Chumpitaz-Campos, L. (2018). Teachers learn about student learning assessment through a teacher education process. *Studies in Educational Evaluation*, 58. <https://doi.org/10.1016/j.stueduc.2018.05.004>
- Bawa, P. (2016). Retention in online courses: Exploring issues and solutions—A literature review. *Sage Open*, 6(1). <https://doi.org/10.1177/2158244015621777>
- Bennett, S., Agostinho, S., Lockyer, L., & Harper, B. (2009). Researching learning design in open, distance, and flexible learning: Investigating approaches to supporting design processes and practices. *Distance Education*, 30, 175–177. <https://doi.org/10.1080/01587910903023173>
- Brigham, D. E. (1992). Factors affecting the development of distance education courses. *Distance Education*, 13, 169–192. <https://doi.org/10.1080/0158791920130203>
- Butcher, J., & Rose-Adams, J. (2015). Part-time learners in open and distance learning: Revisiting the critical importance of choice, flexibility and employability. *Open Learning*, 30(2), 127–137. <https://doi.org/10.1080/02680513.2015.1055719>
- Day, I. N. Z., van Blankenstein, F. M., Westenbergh, P. M., & Admiraal, W. F. (2018). Explaining individual student success using continuous assessment types and student characteristics. *Higher Education Research & Development*, 37(5), 937–951. <https://doi.org/10.1080/07294360.2018.1466868>
- Delnoij, L., Dirkx, K., Janssen, J., & Martens, R. L. (2020). Predicting and resolving non-completion in higher (online) education – A literature review. *Educational Research Review*, 29, Article 100313. <https://doi.org/10.1016/j.edurev.2020.100313>
- Deschacht, N., & Goeman, K. (2015). The effect of blended learning on course persistence and performance of adult learners: A difference-in-differences analysis. *Computers and Education*, 87, 83–89. <https://doi.org/10.1016/j.compedu.2015.03.020>
- Dexter, P. D. (2015). *The influence of engagement upon success and persistence of online undergraduates*. (Publication No. 3723157) [Unpublished doctoral dissertation].



- University of Southern Maine. ProQuest Dissertations Publishing.  
<https://search.proquest.com/docview/1728895868>
- Grau-Valldosera, J., Minguillón, J., & Blasco-Moreno, A. (2018). Returning after taking a break in online distance higher education: From intention to effective re-enrollment. *Interactive Learning Environments*, 27(3), 307-323.  
<https://doi.org/10.1080/10494820.2018.1470986>
- Han, X., Wang, Y., & Jiang, L. (2019). Towards a framework for institution-wide quantitative assessment of teacher's online participation in blended learning implementation. *Internet and Higher Education*, 42, 1-12.  
<https://doi.org/10.1016/j.iheduc.2019.03.003>
- Hart, C. (2012). Factors associated with student persistence in an online program of study: A review of the literature. *Journal of Interactive Online Learning*, 11(1), 19-42.  
<http://www.ncolr.org/jiol/issues/pdf/11.1.2.pdf>
- Henry, M. (2018). The online student experience: An exploration of first-year university students' expectations, experiences and outcomes of online education. [Unpublished doctoral dissertation]. Edith Cowan University. <https://ro.ecu.edu.au/theses/2059>
- Houlden, S., & Veletsianos, G. (2019). A posthumanist critique of flexible online learning and its "anytime anyplace" claims. *British Journal of Educational Technology*, 50(3), 1005-1018. <https://doi.org/10.1111/bjet.12779>
- Hyllegard, D., Deng, H., & Hunter, C. (2008). Why do students leave online courses? Attrition in community college distance learning courses. *International Journal of Instructional Media*, 35(4), 429-434.  
<https://link.gale.com/apps/doc/A273359032/AONE?u=anon~d10f0403&sid=googleScholar&xid=cc2cfc27>
- Kahu, E., Stephens, C., Zepke, N., & Leach, L. (2014). Space and time to engage: Mature-aged distance students learn to fit study into their lives. *International Journal of Lifelong Education*, 33(4), 523-540. <https://doi.org/10.1080/02601370.2014.884177>
- Kara, M., Erdoğan, F., Kokoç, M., & Cagiltay, K. (2019). Challenges faced by adult learners in online distance education: A literature review. *Open Praxis*, 11(1), 5-22.  
<https://doi.org/10.5944/openpraxis.11.1.929>
- Korstange, R., Hall, J., Holcomb, J., & Jackson, J. (2020). The online first-year experience: Defining and illustrating a new reality. *Adult Learning*, 31(3), 95-108.  
<https://doi.org/10.1177/1045159519892680>
- Lee, Y., & Choi, J. (2011). A review of online course dropout research: Implications for practice and future research. *Educational Technology Research and Development*, 59(5), 593-618. <https://doi.org/10.1007/s11423-010-9177-y>
- McNaught, K. (2013). Flexible pedagogy, flexible practice: Notes from the trenches of distance education. *Higher Education Research & Development*, 32(5), 867-869.  
<https://doi.org/10.1080/07294360.2012.756849>
- Michinov, N., Brunot, S., Le Bohec, O., Juhel, J., & Delaval, M. (2011). Procrastination, participation, and performance in online learning environments. *Computers & Education*, 56(1), 243-252. <https://doi.org/10.1016/j.compedu.2010.07.025>
- Moore, C., & Greenland, S. (2017). Employment-driven online student attrition and the assessment policy divide: An Australian open-access higher education perspective.

- Journal of Open, Flexible and Distance Learning*, 21(1), 52–62.  
<https://files.eric.ed.gov/fulltext/EJ1148193.pdf>
- Mor, Y., Ferguson, R., & Wasson, B. (2015). Editorial: Learning design, teacher inquiry into student learning and learning analytics: A call for action. *British Journal of Educational Technology*, 46(2), 221–229. <https://doi.org/10.1111/bjet.12273>
- Mulliner, E., & Tucker, M. (2017). Feedback on feedback practice: Perceptions of students and academics. *Assessment & Evaluation in Higher Education*, 42(2), 266–288. <https://doi.org/10.1080/02602938.2015.1103365>
- Naidu, S. (2017). How flexible is flexible learning, who is to decide and what are its implications? [Editorial]. *Distance Education*, 38(3), 269–272. <https://doi.org/10.1080/01587919.2017.1371831>
- Naylor, D. & Nyanjom, J. (2020). Educators’ emotions involved in the transition to online teaching in higher education. *Higher Education Research & Development*. Advance online publication. <http://doi.org/0.1080/07294360.2020.1811645>
- Nguyen, Q., Rienties, B., Toeteneel, L., Ferguson, F., & Whitelock, D. (2017). Examining the designs of computer-based assessment and its impact on student engagement, satisfaction, and pass rates. *Computers in Human Behavior*, 76, 703-714. <https://doi.org/10.1016/j.chb.2017.03.028>
- Nikolova, I., & Collis, B. (1998). Flexible learning and design of instruction. *British Journal of Educational Technology*, 29(1), 59–72. <https://doi.org/10.1111/1467-8535.00046>
- Owen, M., Kavanagh, P., & Dollard, M. (2017). An integrated model of work–study conflict and work–study facilitation. *Journal of Career Development*, 45(5), 504-517. <https://doi.org/10.1177/0894845317720071>
- Putney, L. G. (2010). Case study. In N. J. Salkind (Ed.), *Encyclopedia of research design* (Vol. 1, pp. 115-119). Sage Publications. <https://doi.org/10.4135/9781412961288.n39>
- Ritchie, J., Lewis, J., Elam, G., Tennant, R., & Rahim, N. (2014). Designing and selecting samples. In J. Ritchie, J. Lewis, C. M. Nicholls, & R. Ormston (Eds.), *Qualitative research practice: A guide for social science students and researchers* (pp. 111-146). Sage Publications.
- Sánchez-Gelabert, A., Valente, R., & Duarte, J. M. (2020). Profiles of online students and the impact of their university experience. *International Review of Research in Open and Distributed Learning*, 21(3), 230-249. <https://doi.org/10.19173/irrodl.v21i3.4784>
- Sangrà, A. (2002). A new learning model for the information and knowledge society: The case of the Universitat Oberta de Catalunya (UOC), Spain. *International Review of Research in Open and Distributed Learning*, 2(2), 1-19. <https://doi.org/10.19173/irrodl.v2i2.55>
- Schreier, M. (2016). *Qualitative content analysis in practice*. Sage Publications.
- Simpson, O. (2003). *Student retention in online open and distance learning*. Routledge. <https://www.routledge.co.uk/Student-Retention-in-Online-Open-and-Distance-Learning/Simpson/p/book/9780749439996>
- Simpson, O. (2013). Student retention in distance education: are we failing our students? *Open Learning*, 28(2), 105-119. <http://doi.org/10.1080/02680513.2013.847363>
- Soffer, T., Kahan, T., & Nachmias, R. (2019). Patterns of students’ utilization of flexibility in online academic courses and their relation to course achievement. *International Review*

- of Research in Open and Distributed Learning*, 20(3).  
<https://doi.org/10.19173/irrodl.v20i4.3949>
- Stone, C., & O'Shea, S. (2019). Older, online and first: Recommendations for retention and success. *Australasian Journal of Educational Technology*, 35(1), 57–69.  
<https://doi.org/10.14742/ajet.3913>
- Trotter, E., & Roberts, C. A. (2006). Enhancing the early student experience. *Higher Education Research & Development*, 25(4), 371-386.  
<https://doi.org/10.1080/07294360600947368>
- Veletsianos, G., & Houlden, S. (2019). An analysis of flexible learning and flexibility over the last 40 years of *Distance Education*. *Distance Education*, 40(4), 454-468.  
<https://doi.org/10.1080/01587919.2019.1681893>
- Veletsianos, G., Kimmons, R., Larsen, R., & Rogers, J. (2021). Temporal flexibility, gender, and online learning completion. *Distance Education*, 42(1), 22-36.  
<http://doi.org/10.1080/01587919.2020.1869523>
- Weimer, M. (2013). *Learner-centered teaching: Five key changes to practice* (2nd ed.). Jossey-Bass. <https://www.wiley.com/en-us/Learner+Centered+Teaching%3A+Five+Key+Changes+to+Practice%2C+2nd+Edition-p-9781118119280>
- Willging, P. A. & Johnson, S. D. (2009). Factors that influence students' decision to dropout of online courses. *Journal of Asynchronous Learning Networks*, 13(3), 115–127.  
<https://files.eric.ed.gov/fulltext/EJ862360.pdf>
- Woodley, A., & Simpson, O. (2014). Student dropout: The elephant in the room. In O. Zawacki-Richter & T. Anderson (Eds.), *Online distance education: Towards a research agenda* (pp. 459–485). Athabasca University Press.  
<https://doi.org/10.15215/aupress/9781927356623.01>
- Xavier, M., & Meneses, J. (2020). *Dropout in online higher education: A scoping review from 2014 to 2018*. eLearn Center, Universitat Oberta de Catalunya.  
<https://doi.org/10.7238/uoc.dropout.factors.2020>
- Yin, R. K. (2002). *Case study research: Design and methods* (3rd. ed.). Sage Publications.
- Young, S. (2006). Student views of effective online teaching in higher education. *The American Journal of Distance Education*, 20(2), 65-77.  
[https://doi.org/10.1207/s15389286ajde2002\\_2](https://doi.org/10.1207/s15389286ajde2002_2)

## CHAPTER 8

# FOSTERING RETENTION IN ONLINE HIGHER EDUCATION: STUDENTS' PERCEPTIONS OF AN INTERVENTION ADDRESSING THEIR FIRST-YEAR EXPERIENCE\*

### Abstract

Dropout represents one of the greatest challenges faced by online higher education. This paper presents an institutional intervention aimed at fostering retention and success of first-year undergraduate students at the Universitat Oberta de Catalunya (UOC), an online and open university, through measures addressing learning design and academic support. Secondly, through analyzing in-depth interviews with first-year students, the paper explores their perception of intervention measures and their possible advantages or risks. Results indicate that time-related factors represent the major issue for persistence and continuance. Intervention measures such as personalized course packages which prevent overlapping of submission deadlines; flexibility in continuous assessment; and personalized support and academic advising were valued highly by most students. Future retention interventions in open universities are also discussed.

**Keywords:** Institutional intervention, first year experience, higher education, online education, dropout

### 8.1. Introduction

#### 8.1.1. Dropout and Retention in Online Higher Education

Dropout represents one of the greatest challenges faced by online educators and administrators (Lee & Choi, 2011), as online higher education (OHE) tends to present higher dropout and lower retention rates than traditional face-to-face education (Muljana & Luo, 2019). Early dropout is typical of OHE programs, sometimes reaching 50% of first-year students (Simpson, 2010). Many studies have investigated the factors that influence dropout and retention. Reviewing key dropout factors, Lee and Choi (2011) found that among the most important ones were student factors such as academic background and skills, self-efficacy, and motivation; course and program factors like course design and institutional support; and environmental factors such as work situation, family and job support, and life circumstances.

However, more broadly speaking, lack of time and time-related conflicts seem to be the main factors that lead to dropout (McNeill, 2010; Xavier & Meneses, 2018). That seems to be due

---

\* Xavier, M., & Meneses, J. (2020). Fostering retention in online higher education: Students' perceptions of an intervention addressing their first-year experience. In S. Softic, D. Andone, & A. Szucs (Eds.), *European Distance and E-Learning Network (EDEN) Proceedings: Human and Artificial Intelligence for the Society of the Future* (pp. 389-397). <http://doi.org/10.38069/edenconf-2020-ac0037>

to two key issues (Korstange et al., 2020). On the one hand, students' *misconceptions* or unrealistic expectations regarding the workload, time, effort, discipline, and involvement required by OHE (Bawa, 2016), and *overestimation* of their own readiness, available time, and capacities. On the other hand, *time-related issues* such as time management to deal effectively with OHE demands and job and family commitments are essential for success and persistence (Michinov et al., 2011) while procrastination, lack of time, and conflicting work-study-life demands are key factors for dropout (Ashby, 2004; Youkselturk & Inan, 2006).

In that sense, first- and second-semester enrolments play a crucial role. Slim et al., (2016) found that course enrolment has a profound impact on student achievement and engagement at both course and semester levels. Many students overestimate their capacities and time-availability and underestimate what is required by OHE; thus, they often enroll in too many or too difficult courses, sometimes with overlapping schedules, and end up dropping out in their first semester or year – sometimes from their courses but also from the degree.

### **8.1.2. Context of Intervention and Research**

Both the intervention and the research reported herein were carried out at the Universitat Oberta de Catalunya (UOC). As an open, fully university, UOC is characterized by *flexibility*: there are no permanence requirements and very few enrolment requirements, and access is very open. Although flexibility is seen as the main attraction of OHE (Soffer et al., 2019), especially for busy, time-poor adult students, it also increases individual responsibility, for eLearning is mostly self-directed and self-regulated. UOC's typical students are non-traditional learners: mature-aged or adult, with full- or part-time jobs and/or family responsibilities. Statistically, 40.5% of students are 30 or over, and 81.5% study and work; dropout rate at UOC is 57.6%, with first semester drop-outs accounting for nearly half of this total (Grau-Valldosera et al., 2018). The combination of paid work alongside studies is related to dropout (Hovdhaugen, 2015), as it may create conflicting commitments and time constraints.

Regarding enrolment, at UOC students choose freely which courses they want to take each semester, guided by an academic advisor who offers recommendations. Learning design at UOC is characterized by the employment of continuous assessment (CA), of a diagnostic, formative, and summative character. To pass a course (completion), students are usually required to pass all the evaluation activities plus a synthesis test at the end of the semester. That implies that successfully adhering to CA is the best predictor for re-enrolment. Hence, students who withdraw from the CA process (i.e., not submitting activities) are most likely to drop out of a course (González et al., 2018).

Therefore, in order to foster retention, persistence, and satisfaction, institutional support must address students' first and second enrolments (i.e., their selection of courses and academic pathways), balancing through academic advising their expectations and goals with their time availability and previous academic results, as well as providing students with *flexibility* in the CA process during their first academic year so as to be able to face unexpected situations (González et al., 2018).

Thus, the aim of this paper is, firstly, to present an institutional intervention that seeks to address these issues, and secondly to characterize the participant students and explore their perception of its measures and their possible advantages or risks.

### 8.1.3. The ESPRIA Intervention

UOC’s ongoing institutional project *First-year Students (ESPRIA)*, for its initials in Catalan) seeks to minimize the impact of such course/program dropout factors (Lee & Choi, 2011): course design and institutional support. Based on the employment of institutional learning analytics, it revised pathways and course design together with tenured professors (responsible for learning design) and part-time adjunct professors, also providing flexibility measures in the CA process (Meneses et al., 2019). Enhancing tutorial quality, ESPRIA-trained advisory staff offers personalized support during the application and enrolment processes, helping first-year students to set realistic and achievable goals and to match their needs with their chosen course of study (Tresman, 2002), paying particular attention to student workload issues, capabilities, and time availability, while also detecting early risk situations so as to manage open entry. Such measures seek to avoid excessive student workload and help students achieve their goals in their first and second semesters, so they can be motivated to re-enroll in the following ones. However, ESPRIA’s main goal is to help students adhere to and be successful in the CA process, especially in their first semester. Table 1 shows the numbers of academic staff and students involved in ESPRIA since its inception. A total of 16,479 students have participated in ESPRIA thus far.

Table 1: ESPRIA Intervention – Participants

	Spring 2017	Fall 2018	Spring 2018	Fall 2019
Programs	6	8	9	10
Courses	51	69	78	78
Tenured Professors	46	63	73	76
Academic advisors	145	267	243	312
Adjunct professors	217	350	327	445
Students	1,449	5,619	2,603	6,808

Besides personalized support, ESPRIA offered first-year students two other measures. First, flexible enrollment *packages*, containing three courses that have non-overlapping calendars (i.e., submission deadlines) and with adjusted syllabus and workload so as to prevent work overload. Packages were designed taking into account learning analytics (enrollment patterns and course pass rates) and students’ interests. Each degree offers three packages, each presenting a possible learning pathway, and students, guided by academic advisors, are free to choose between them and the number of courses they want to take. Second, *flexibilizing the CA process* with some rescue alternatives: making up for a failed or non-submitted CA activity; creating a first, not graded CA activity to induce a smoother entry in the course; allowing

delayed submission of assessments; among others.

In what follows we present the students' perceptions of such measures, their adequacy or risks, difficulties, and suggestions. This is part of an institutional evaluation of the project, focusing on its qualitative aspects from the students' perspective (professors and academic advisors will also be interviewed as part of such assessment), in order to inform this intervention and possible future ones, including in other open universities facing the same retention issues.

## 8.2. Method

Participants included eight first-year, fully online undergraduate UOC students who started their studies at UOC in September 2017 and were *persisters* (students who enroll for three consecutive semesters). Students were chosen according to the following criteria: age - non-traditional ( $\geq 25$  years-old) or traditional; full-time (enrolled in more than 18 credits ECTS) or part-time; and gender (male or female). The study employed a qualitative, exploratory method, collecting data through semi-structured in-depth interviews (duration: one hour) following an interview protocol that explored the students' perceptions about ESPRIA measures. Students did not know that the measures were part of an institutional intervention. Interviews were transcribed and analyzed following content analysis guidelines (Elo & Kyngäs, 2008).

## 8.3. Preliminary Results

The preliminary results presented herein focus on the students' characteristics, depending on profiles, and their perceptions about ESPRIA measures. As here we have focused only on persistent students, results should be taken with caution. In this small sample, there were usually no significant gender differences.

Young (traditional) part-time students usually have a 30h work week, or else study two degrees at the same time; enroll in two or three courses per semester; have good time management skills; value the UOC system and its flexibility; and report some time conflict, especially during their first semester (when they are not familiar with the online system). They value especially the following intervention measures: course workload adjustment ("Yes, that would be good. So you can plan ahead and organize yourself" [Participant 1 – P1]); and flexibilizing submission deadlines, particularly in the beginning of the semester, when they return from holidays and need more time to get accustomed to the routine again [P2].

Young full-time students do not work and enroll in 30 credits per semester; their underestimation of workload expectation leads to procrastination problems (especially for women), creating stress at the end of the semester (conflict with other commitments), but nevertheless they succeed. They would like more personal support (from advisors but especially from professors), and like the measure of flexibilizing submission deadlines - but not for themselves, for they fear it would increase their procrastination: "I don't work, but for the people who do, or have kids, or unexpected situations, that would be great. Because in the end there's people who don't want high grades, they just want to complete the course" [P3]. "For a person like me, that would be no good. It'd probably feed my procrastination issues"



[P4]. As they typically enroll in five courses per semester, they would like to have ESPRIA packages of five courses as well: “Yes, a package with five courses that have submission dates every two weeks, if they could provide me a leeway of two, at most three days between submissions, that would be great for me ... especially because it gives you time for your [personal] things” [P3]. One student valued course workload adjustment (“That’s what you seek, right?, to adjust that. Then you can plan your activities better” [P3]), but the other perceived it negatively: “To adjust all the courses would perhaps make them more boring. I don’t know” [P4]. They would like more information on the degree and online system before starting their studies; and not having group assignments (which take away the independence to which they are used).

Older, non-traditional part-time students typically enroll in 12 credits per semester and have full-time jobs; when they start their studies, it takes them a whole semester to get used to the open online system. Their expectations are realistic, but when they enroll in more than two or three courses, they end up facing (time-related) problems. They value the flexibility and self-regulation of OHE and are very happy with academic advising (especially because of their lack of experience with OHE and the fast replies of advisors to their doubts or demands). Flexibilizing submission deadlines is perceived as having both positive and negative sides: “If you increase flexibility, sure, you will have lower grades and the student will be more relaxed, and will let work aside a bit more, and if he thinks he will get a low grade, then ‘well, I’ll submit it soon’. It feeds procrastination” [P5]. Regarding workload adjustment, students would like more details and more adjustment: “How much it’d cost, in terms of time and dedication, to take such course” [P5]. “Yes, because then you can have an estimation, so you can be bold and think, ‘I’ll enroll in three courses’” (instead of two) [P6]. They like the non-overlapping submission measure in ESPRIA packages: “Yes, because then it’s smoother, you can plan yourself” [P6]. They also demand measures to give them a sense of community, something that changes their perception of cold online interactions: Skype videoconferences, or similar. “A face-to-face meeting with my advisor, like ‘so explain to me your doubts’, or... Because it is indeed a distance university. But in the end, we who are behind a computer screen, we’re people” [P5].

Non-traditional full-time students live with parents or partner, do not work, and enroll in 30 credits per semester. They have very good time management skills and are adapted to the OHE system, valuing a lot its flexibility. They expected to work more than what was required of them, and do not present procrastination nor stress regarding time. They would like more personalized support as voicemail or similar measures. Regarding ESPRIA measures, they think the possibility of making up for failed submissions would be beneficial, but for other students: “Normally you have enough time to submit a graded activity. But it’s true that, anything happens, like getting sick, or having to travel for a week, something like that, if you don’t submit by the deadline you’ve lost it, and so that possibility of making up for submissions would be good” [P7]. Non-overlapping of submissions is also seen as a good measure, but mostly not for themselves (only in special cases). “There’s enough time to submit the activities... But there are also people who indeed prefers more than a week [of time available to submit], so... it would be good. That will depend on the user [student]” [P7]. “There are



some hard moments, when you have many submissions at the same time, and you're tired, you know?, and you are not in the same rhythm you were at the beginning of the semester, so it becomes a bit heavy. So I prefer submission dates [for different courses] to be in the same week, for example, Mondays, Wednesdays, and Fridays. One day at least between them. So I can dedicate myself to the other two [submissions]. If I had one submission per week, I wouldn't like it, because then I'd go crazy, every week you have this tension" [P8]. They think flexibilizing deadlines is a good measure. "It wouldn't induce myself to procrastinate, no, because I always try to get the highest grades" [P8].

## **8.4. Conclusions**

As seen, each student profile experiences time in different manners, and has dissimilar time management skills, demands, and perceptions of needed support measures. Thus, treating the different profiles in the same way is not adequate, for they display different behaviors, demands, experiences, and strategies to succeed. However, for most students, time-related factors represent the major issue for persistence and continuance. The ideal would be to design and implement forms of support tailored to each profile, according to their specific demands. Almost all participants value online flexibility, but for some it also represents conflicting demands, especially the profiles who present more time-related problems (e.g., procrastination in full-time students). In this sense, for some profiles some measures (e.g., flexibilizing submission deadlines) would be good; but for other profiles (procrastinators, or the ones with very high expectations of personal performance), they would be counterproductive. The intervention measures described here should ideally be extended to full-time students – which is particularly difficult, given the difficulties inherent to flexibilizing submission dates and making them non-overlapping in five different courses.

Some common demands, which ESPRIA tries to fulfill, were seen in almost all profiles: more personalized feedback and mentorship and the possibility of making up for CA graded activities. Some demands are hardly feasible in an open university model: face-to-face mentorship, synchronous advising, and so on. Misconceptions and unreal expectations may be diminished or transformed through providing more information on the reality of online studies before the first enrollment.

Therefore, future retention interventions in open universities should focus on the first academic year, especially the first semester (which presents the highest attrition rates), and be embedded in ampler interventions addressing situational, institutional, and personal factors: flexibility in continuous assessment; identifying and providing personalized support especially for at-risk students early on; targeted advice and orientation; and personalized course plans, especially for their first enrolment.

### **Acknowledgment**

With the support of a doctoral grant from the Universitat Oberta de Catalunya (UOC).

## 8.5. References

- Ashby, A. (2004). Monitoring student retention in the Open University: Definition, measurement, interpretation and action. *Open Learning*, 19(1), 65-77. doi:10.1080/0268051042000177854
- Bawa, P. (2016). Retention in online courses: Exploring issues and solutions - a literature review. *SAGE Open*, 6(1), 1-11. doi:10.1177/2158244015621777
- Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of advanced nursing*, 62(1), 107-115. doi:10.1111/j.1365-2648.2007.04569.x
- González, L., Minguillón, J., Martínez-Aceituno, J.A., & Meneses, J. (2018). Institutional support to provide freshmen with flexible learning paths at course and semester level in open higher education. In *Proceedings 10th EDEN Research Workshop, Barcelona* (pp. 348-354). [https://proceedings.eden-online.org/wp-content/uploads/2018/11/RW10\\_2018\\_Barcelona\\_Proceedings\\_ISSN.pdf](https://proceedings.eden-online.org/wp-content/uploads/2018/11/RW10_2018_Barcelona_Proceedings_ISSN.pdf)
- Grau-Valldosera, J., Minguillón, J., & Blasco-Moreno, A. (2018). Returning after taking a break in online distance higher education: From intention to effective re-enrolment. *Interactive Learning Environments*, 27(3), 307-323. doi:10.1080/10494820.2018.1470986
- Hovdhaugen, E. (2015). Working while studying: The impact of term-time employment on dropout rates. *J Educ and Work*, 28(6), 631-651. doi:10.1080/13639080.2013.869311
- Korstange, R., Hall, J., Holcomb, J., & Jackson, J. (2020). The online first-year experience: Defining and illustrating a new reality. *Adult Learning*. doi:10.1177/1045159519892680
- Lee, Y., & Choi, J. (2011). A review of online course dropout research: Implications for practice and future research. *Educational Technology Research and Development*, 59(5), 593-618. doi:10.1007/s11423-010-9177-y
- McNeill, W. N. (2010). *The time-use of distance learners: a study of international postgraduate students engaged in professional career development*. [Unpublished doctoral dissertation]. University of London. <http://discovery.ucl.ac.uk/10006518/>
- Meneses, J., Minguillón, J., González, L., & Martínez-Aceituno, T. (2019). *ESPRIA. Millora de l'Acompanyament dels Estudiants de Primer Any*. Universitat Oberta de Catalunya. <http://hdl.handle.net/10609/103166>
- Michinov, N., Brunot, S., Le Bohec, O., Juhel, J., & Delaval, M. (2011). Procrastination, participation, and performance in online learning environments. *Computers & Education*, 56(1), 243-252. doi:10.1016/j.compedu.2010.07.025
- Muljana, P. S., & Luo, T. (2019). Factors contributing to student retention in online learning and recommended strategies for improvement: A systematic literature review. *Journal of Information Technology Education: Research*, 18, 19-57, 2019. doi:10.28945/4182
- Simpson, O. (2010) '22% - can we do better?' - *The CWP Retention literature review final report*. Open University UK. <http://www.ormondsimpson.com/USERIMAGES/Retention%20literature%20review.pdf>
- Slim, A., Heileman, G. L., Al-Doroubi, W., & Abdallah, C. T. (2016). The impact of course enrolment sequences on student success". In *Proceedings of 30<sup>th</sup> International*

- Conference on Advanced Information Networking and Applications*, Crans-Montana, Switzerland. doi:10.1109/AINA.2016.140
- Soffer, T., Kahan, T., & Nachmias, R. (2019). Patterns of students' utilization of flexibility in online academic courses and their relation to course achievement. *International Review of Research in Open and Distributed Learning*, 20(3). doi:10.19173/irrodl.v20i4.3949
- Tresman, S. (2002). Towards a strategy for improved student retention in programmes of open, distance education: A case study from the Open University UK. *International Review of Research in Open and Distributed Learning*, 3(1). <http://www.irrodl.org/index.php/irrodl/article/download/75/544>
- Xavier, M., & Meneses, J. (2018). The time factor in studies on dropout in online higher education: Initial review of the literature and future approaches. In *Proceedings 10th EDEN Research Workshop, Barcelona* (pp. 361-367). [https://proceedings.eden-online.org/wp-content/uploads/2018/11/RW10\\_2018\\_Barcelona\\_Proceedings\\_ISSN.pdf](https://proceedings.eden-online.org/wp-content/uploads/2018/11/RW10_2018_Barcelona_Proceedings_ISSN.pdf)
- Yukselturk, E., & Inan, F. A. (2006). Examining the factors affecting student dropout in an online learning environment. *Turk. online J. Distance Educ.*, 7(3), 76-88. <https://files.eric.ed.gov/fulltext/ED494345.pdf>

## CHAPTER 9

# INTEGRATED DISCUSSION OF RESEARCH FINDINGS AND CONCLUSION

### 9.1. Results

In order to answer the research questions and fulfill the aims proposed for this dissertation, in this section the main results found in each contribution are presented in a summarized fashion. To simplify their presentation, we have opted to include only the findings from the empirical papers (results and discussion of the theoretical papers, the literature reviews, are within C1, C2, and SC1). Then, in the next section, the main findings are synthesized, integrated, and globally discussed in the context of what is known in the literature.

In what follows, the main findings of each contribution are structured according to our research questions, which are recalled in extenso for reasons of clarity.

#### **9.1.1. Contribution 3 (C3):** *Persistence and time challenges in an open online university: A case study of the experiences of first-year learners*

Research question 1 (Q1). What factors or reasons are perceived to be more important for dropout and persistence in open OHE?

Reasons and factors related to *persistence*:

*Facilitators*:

- good time management and high levels of intrinsic motivation, satisfaction, resilience, and self-determination
- personalized support from faculty
- if students manage to reach good adaptation: online educational model/system is seen as facilitator and motivator

*Barriers*:

- to balance studies with other life responsibilities
- procrastination; but even procrastinators with heavy work-family duties managed to persevere due to their resilience and personal motivation
- huge demands on student self-regulation
- lack of previous OHE experience
- failing courses
- new delivery model: lack of presence and dialogue; takes time and effort to adapt

Research question 2 (Q2). How does the time-factor impact upon student dropout and persistence in OHE, particularly in the first year of studies?

- time pressure and time-conflicts were crucial barriers for persistence in the first semester
- the main barrier was juggling study with multiple priorities
- time management strategies: most students employed *constant dedication* and *keeping ahead*, which often required *borrowing time*; followed by *chaotic* time management; *dovetailing*; *deadline-driven* management; *procrastination*; and *last-minute cramming*
- experience of time pressure was commonplace but usually not severe; many learners (including procrastinators) are used to working under pressure and even benefit from it
- expectations: most persisters (seven) projected their studies would demand *more* time and be more difficult; five students had realistic and adequate expectations; six expected their studies would demand *less* or *much less* time and work
- unrealistic expectations and lack of OHE experience generated transition difficulties that require support, effort, and time for student adaptation
- all the NTPT learners experienced anxious and stressful periods due to time poverty and conflicts
- many participants considered stopping out, for varied reasons – four of them intrinsically related to time challenges: due to time-pressured, stressful moments, and failing a course, increased workload and financial issues, or getting pregnant
- almost all NTPTs thought about stopping out in their first year

Research question 3 (Q3). What is the impact of flexibility, particularly in learning design and assessment, upon student persistence, attrition, and engagement in OHE?

- the vast majority (18) of participants elected OHE because of its *flexibility*, perceived as allowing self-time management and organization, balance study-work, and its easy accessibility
- for some, it was the only way they could engage with tertiary education
- time dedication for studies: some were constant in their weekly dedication, but flexible at the same time; OHE allows for flexible self-organization
- flexibility helped achievement of good conciliation of studies with other life responsibilities
- flexibility (open-entry) appeared as source of motivation

Research question 4 (Q4). What possible recommendations can be proposed to improve persistence and retention in OHE?

- temporal factors should guide course design, calibrating workload and pace of learning and flexibilizing assessment
- specialized academic advisory, especially for new students during induction and throughout the first year, to set achievable goals and prevent unrealistic expectations
- personalized support, particularly to non-traditional students with multiple commitments

- early interventions to improve student time management and SRL strategies, offering planning tools

**9.1.2. Contribution 4 (C4):** *Dropout, stopout, and time challenges in open online higher education: A qualitative study of the first-year student experience*

Q1. What factors or reasons are perceived to be more important for dropout and persistence in open OHE?

Reasons and factors related to *dropout*:

- time poverty and time-related conflicts were the main factor behind the decision to withdraw, especially for NTPT learners; the foundational semester was crucial
- main reason for withdrawal: life circumstances and external stressors (increased workload, illness, family care)
- course or program design characteristics (too many or overlapping assignments, course difficulty)
- for two NTPTs: economic reasons
- transition difficulties: course design and novelty of OHE system (YTPT, NTPT); lack of previous OHE experience
- unrealistic expectations

Reasons and factors related to *stopout*:

- more part-timers and females
- main reason: lack of time; work conflicts leading to failure to strike a balance between different commitments
- reasons for returning: changes in life circumstances that allowed stopouts to have more time availability

Q2. How does the time-factor impact upon student dropout and persistence in OHE, particularly in the first year of studies?

- time poverty and time-related conflicts were the main factor behind the decision to withdraw, especially for NTPT learners; the foundational semester was crucial
- time challenges appeared connected mostly to student and situational factors: students' life circumstances, time management or procrastination, and unrealistic expectations
- life circumstances affecting health, family, or work (and thus time availability) were the most important factor for the majority, particularly the dropouts
- most dropouts failed to balance academic duties with time-consuming personal commitments
- stopouts managed to improve their time-conditions and re-enroll later
- two models were presented: first-semester temporal model and withdrawal factors; student interactional network and factors

Q3. What is the impact of flexibility, particularly in learning design and assessment, upon student persistence, attrition, and engagement in OHE?

- open OHE flexibility was connected to misconceptions (studies would be easier and less effort- and time-consuming)

Q4. What possible recommendations can be proposed to improve persistence and retention in OHE?

- time issues should guide course and program design (paying particular attention to calibrating workload and pace of learning),
- specialized academic advisory (especially for new students during induction and enrollment, and throughout the first year, to prevent unrealistic expectations and set achievable goals),
- personalized and proactive support (to non-traditional students with job and/or family commitments),
- and interventions (to improve time management and organizational skills, offering planning tools and strategies)
- ameliorate impact of life circumstances factors via flexibilising assessment and progression routes

**9.1.3. Contribution 5 (C5):** *The tensions between student dropout and flexibility in learning design: The voices of professors in open online higher education*

Q1. What factors or reasons are perceived to be more important for dropout and persistence in open OHE?

Reasons and factors related to *dropout*:

- main causes were mainly student-centered (learner factors): time poverty and time management skills, procrastination and poor self-regulation, workload and time availability, student misconceptions and expectations, skills, and lack of academic experience
- life circumstances (changes in work, family, health) play a key role for dropout
- course and program factors: heavy workload; difficult or too theoretical courses; large classes in introductory courses
- institutional factors: open entry (allows entry of unprepared students)

Reasons and factors related to *persistence*:

- instructor support and connection; academic advisors and support for first-year students

Q2. How does the time-factor impact upon student dropout and persistence in OHE, particularly in the first year of studies?

- time-related issues were the most reported reason for withdrawal in their perception
- among such issues, time poverty and time management skills, procrastination and poor self-regulation, workload and time availability, student expectations

Q3. What is the impact of flexibility, particularly in learning design and assessment, upon student persistence, attrition, and engagement in OHE?

- flexibility has both positive and negative effects
- influences student misconceptions and expectations
- demands more self-regulation and engagement
- more flexibility may increase student procrastination and dropout
- more flexibility may augment faculty workload, increase risk of losing professorial control and be a threat to educational standards and quality
- too much flexibility is disorganizing and lacks rigor
- positive effects: flexibility may enable easier student transition and adaptation, more student-centered learning, and salvaging students who fall behind
- flexible measures that were seen as conducive to engagement and persistence: improvement of personalized feedback, formative assessment, and module workload

Q4. What possible recommendations can be proposed to improve persistence and retention in OHE?

- adopt and evaluate measures perceived as positive: assessment extension, personalized feedback and monitoring, and calibration of course workload

**9.1.4. Contribution 6 (C6): *Fostering retention in online higher education: Students' perceptions of an intervention addressing their first-year experience***

Q1. What factors or reasons are perceived to be more important for dropout and persistence in open OHE?

- time-related factors represent the major issue for persistence and continuance
- persistence: satisfaction with academic advisors and OHE flexibility
- for persistence, institutional measures addressing course and program dropout factors - course design, program pathways, and institutional support - may be useful

Q2. How does the time-factor impact upon student dropout and persistence in OHE, particularly in the first year of studies?

- time-related factors represent the major issue for persistence and continuance
- each student profile experiences time in different manners and has dissimilar time management skills, demands, and perceptions of needed support measures



Q3. What is the impact of flexibility, particularly in learning design and assessment, upon student persistence, attrition, and engagement in OHE?

- online flexibility elicits conflicting demands for some students
- students valued and wanted flexible measures: personalized course packages which prevent overlapping of submission deadlines; flexibility in continuous assessment; and personalized support and academic advising
- many measures were seen as desirable but also risky, e.g., flexibilizing submission deadlines was wanted by some profiles (traditional part-time students and NTPTs) but may lead to procrastination and lower grades for others

Q4. What possible recommendations can be proposed to improve persistence and retention in OHE?

- interventions and their measures should take into account the students' experience, their different profiles and specific needs
- implement and evaluate measures of flexibility that students valued higher: personalized course packages that prevent overlapping of submission deadlines; flexibility in continuous assessment; and personalized support and academic advising
- interventions should prioritize amelioration of time-poverty inducing factors, such as excessive student workload, overlapping assignments, and unrealistic student enrollments and goals
- specialized and personalized induction and advising early on is key to realistic student expectations and enrollments

## **9.2. Integrated Findings and Discussion**

This section integrates and synthesizes the key findings presented above in order to provide global answers to the research questions and discuss them in contrast with the literature. The section ends with several recommendations for practice derived from our findings; such recommendations are mostly student-based but also incorporate the viewpoint and perception of professors.

Whilst most of our findings support prior results in the current body of literature, we also found important nuances and differences that were not expected – by way of example, persisters and their time management styles, the positive role that time pressure played for some of them, and the importance of time challenges as key barriers even for young, traditional students. In what follows we deepen the discussion of the findings for each research question.

### **9.2.1. Research Questions 1 and 2: Perception of Key Dropout and Persistence Factors and the Impact of the Time Factor**

I have opted to discuss the findings for research questions 1 and 2 together, for a simple reason: time-related factors appeared overwhelmingly as the most important ones in all our contributions; hence, it would become repetitive to discuss them in two separate sections.

Findings will be discussed comparatively first addressing results from dropout and stopout participants, then from the persisters, and lastly from professors.

### ***9.2.1.1. Dropout/Stopout Reasons and the Time-Factor***

First of all, our findings confirm the significance of the **first-year experience** for withdrawal or persistence in OHE – particularly the transition period and the first semester. Such importance had already been highlighted by several authors (Baxter, 2012; Brown et al., 2015; Grau-Valldosera, 2019; Henry, 2018, 2020; Kember et al., 2021; Mittelmeier et al., 2019; Stone & O’Shea, 2019a; Tinto, 1993; Tinto & Pusser, 2006). The first-year experience seems to have a *transversal* import, in that it influences (and is influenced by) all other dropout and persistence factors, positively or negatively. Transition to OHE and its educational model often demands multiple adjustments on the students’ part, as they have to build new routines and habits to accommodate study time into their lives in the shift to becoming self-regulated and independent learners (Samra et al., 2021; Wozniak & McEldowney, 2015). This frequently involves a steep, potentially overwhelming learning curve for many learners who are often unprepared for the levels of work, time, responsibility, skills, and effort needed to traverse the OHE threshold (Henry, 2021; Wozniak, 2016). Transition is thus a multifaceted *adaptation process* (K. Lee et al., 2019; Mittelmeier et al., 2021; Rivera-Vargas et al., 2021) that, in addition to motivation, self-regulation, and other connected variables, chiefly requires *time*.

Indeed, **time-related factors** were overwhelmingly perceived as the most important reasons for withdrawal or persistence in the accounts from both students and professors. In that sense, our contributions support prior findings that point that time has a transversal, structural influence upon dropout and persistence (Kahu et al., 2014). Time appeared as a complex macro-factor (Grau-Valldosera, 2019; Grau-Valldosera & Minguillón, 2013), connected to a myriad of other factors. Actually, most factors found in our research affected time. Even when they mostly impacted motivation, for instance dissatisfaction with program, course, or instructor – dissatisfaction and demotivation were likely to induce procrastination.

The main factors behind the decision to withdraw were **time poverty** (lack of time) and **time-related conflicts** experienced during the foundational semester, particularly for NTPT learners who dropped out, but also for stopouts (who ascribed time poverty and conflicts mainly to work conflicts leading to failure to strike a balance with study). Academic time poverty was defined as scarcity of time for studies, in terms of both quality and quantity of time (Conway et al., 2021; Wladis et al., 2018, 2020). This result confirms several other studies (Ashby, 2004; Greenland & Moore, 2022; Hachey et al., 2018; Kember, 1999; McNeill, 2014; Simpson, 2003; Tresman, 2002) that affirm that the most common reason given by students for withdrawal in OHE is “the general issue of time – either being unable to find enough time to study or getting too far behind” (Simpson, 2021, p. 38). Other studies found that time-related issues were very important for OHE dropout, but not necessarily the most important factor (Myers et al., 2021; Park & Choi, 2009; Romero & Barberà, 2011; Romero & Gentil, 2014; Thorpe, 2006). Most importantly, this finding corroborates previous research that found that lack of time was the main dropout reason at the UOC (Carnoy et al., 2012), and also contributes to expand on the

conclusions of some prior exploratory works (e.g., George et al., 2021; Su & Waugh, 2018; Wladis et al., 2018, 2020) but in the context of an open online university.

Time poverty and time conflicts were connected to students' **life circumstances** (Y. Lee & Choi, 2011) and **external stressors** (Wladis et al., 2020) in general, usually related to full- or part-time work and familial care responsibilities, but also including **unexpected changes** in the work, family, health, and economic realms (Kara et al., 2019; Moore & Greenland, 2017). While some students reported the latter as the main reason for their decision to withdraw – e.g., having a child, economic difficulties, changing jobs and increased workload, or a serious health matter in the family - the main barrier for most of our participants was **balancing study with work and family commitments**, which was called *social integration* by Kember (1989) and *study-life challenges* by Greenland and Moore (2022). While most dropouts failed to achieve good balance, juggling multiple priorities with studies was the main challenge even for persisters. However, this challenge impacted **non-traditional students** the most, who are more likely to be fully employed and/or have familial responsibilities and other life commitments (Kara et al., 2019; Sánchez-Gelabert, 2021; Tyler-Smith, 2006). Having more complex life circumstances and multiple time commitments – a higher *lifeload* (Kahu et al., 2014; Naylor et al., 2017) -, open online learners are more prone to be time-poor and face a wider array of study challenges that influence attrition (Greenland & Moore, 2014, 2022; Hachey et al., 2018; Romero & Barberà, 2011; Stone & O'Shea, 2019a; Whitelock et al., 2015; Wladis et al., 2018, 2020). Integrating OHE studies with other life commitments has been found to be a key persistence challenge in several studies (Brown et al., 2015; Doherty, 2006; Kahu et al., 2014; Kember, 1999; Romero, 2011), while other authors found it to be *the most challenging* aspect of OHE (Ashby, 2004; Dews-Farrar, 2018; Farrell & Brunton, 2020; Kara et al., 2019; Selwyn, 2011), particularly in the first year of studies. In traditional, on-campus HE it has been identified as a major problem for non-traditional learners who consider withdrawing from studies during first year, and as a major contributor in why students withdraw in the first semester (Naylor et al., 2017). This is even more common in OHE; for instance, in a study by Brown et al. (2015) with first-time distance learners, half the participants felt consistently overwhelmed as they struggled to balance study with life commitments, and “frequently contemplated withdrawal, particularly after the mid-semester point”.

Such **time conflicts** often generated feelings of **anxiety** and overload, which are associated with greater **stress** and exhaustion (Brown et al., 2015; Carney-Crompton & Tan, 2002; Selwyn, 2011). These effects may severely strain student adjustment and adaptation in the first semester (Mittelmeier et al., 2019), as they face “psychological, emotional, or planning challenges that [arise] from studying alongside the other demands expected of them” (Samra et al., 2021, p. 94). In the case of a few of our dropouts, it came to the point of causing depression and burnout, which led to withdrawal. This was more common among NTPTs, who all reported going through **anxious and stressful** periods in their first year of studies, due to time poverty and conflicts; but some young participants also reported constant anxiety and stress. Across most student profiles, accounts of **time pressure** were commonplace, derived mainly from the constant need to carve out and free up time for studies amidst multiple roles and priorities – at times inflexible ones, in the cases of students with full-time work and/or

children care. For most learners, the unceasing tension of entwining studies with other time-consuming and pressuring responsibilities was a common struggle that often required exceptional self-discipline and self-regulation, hardly chiming with the “anytime, anywhere” promises of OHE flexibility (Kahu et al., 2014; Selwyn, 2011; Sheail, 2018). In our contributions, female students reported time conflicts and high levels of mental distress more frequently, usually derived from the necessity to fit studies with familial care and work responsibilities, which accords with the literature (Carney-Crompton & Tan, 2002; Kahu et al., 2014; Kara et al., 2019; Müller, 2008; Selwyn, 2011; Stone & O’Shea, 2019b; Veletsianos et al., 2021; Waterhouse et al., 2020). For many adult female students in OHE, particularly the ones with young children (Conway et al., 2021; Gunduz & Karaman, 2020; O’Shea, 2022; Papi et al., 2022), study time represents a “third shift” (Aggeli & Vassala, 2009) that must be vied with the “inflexible time demands of family commitments” (Selwyn, 2011, p. 375), which are commonly their first and main priority.

For most of our non-traditional participants, OHE studies were commonly the third **priority**, after work and family – which confirms previous studies (Henry, 2018, 2021; Selwyn, 2011; Su & Waugh, 2018). When studies were seen as causing too much conflict with key responsibilities such as doing well at work and earning income, especially to support family and dependents, and familial commitments such as childcare (Kember, 1989), students felt dissatisfied (Waterhouse et al., 2022) and ended up prioritizing other life demands over studying, eventually withdrawing (Greenland & Moore, 2022). These life circumstances thus appeared as key factors for withdrawal. For the students who withdrew but returned later (stopouts), the main reason reported for returning was precisely changes in life circumstances that allowed them to have more time availability.

Connected to time poverty and time conflicts, **self-regulation** learning strategies appeared as important withdrawal factors, which adds to the literature (Broadbent & Poon, 2015; Geduld, 2016; Holder, 2007; Y. Lee & Choi, 2011; K. Lee et al., 2019; Stephen et al., 2020). The most oft-cited skill was **time management**, which is essential to organize studies around busy lives and maintain balance between different life commitments and studies (Buck, 2016; Romero & Gentil, 2014; Veletsianos et al., 2021). In our studies, many students who dropped out or stopped out had poor time management, particularly in the form of academic **procrastination**, which is correlated with student withdrawal (Cerezo et al., 2017; Grau-Valldosera & Minguillón, 2013; Greenland & Moore, 2022; Kim & Seo, 2015; Melgaard et al., 2022; Michinov et al., 2011; Svartdal et al., 2020). Some students mentioned that being a procrastinator (not only in relation to studies) was simply a key characteristic of their personalities; others procrastinated in specific timeframes (in the beginning of the semester, when they were too busy with other tasks, around festivities, or because of other life circumstances), or because of poor motivation and dissatisfaction with their courses or program. Whatever its reason, procrastination often induced or aggravated time conflicts and poor performance, with students falling behind with assessment tasks and not being able to catch up. It has been argued that OHE flexibility and freedom, which demands more self-regulation and autonomous, independent learning from students, may induce study procrastination more often (Romano et al., 2005). Furthermore, “the potential for distraction

may be greater where all class activities are online and students are on their own to manage their time and efforts, making motivation even more critical” (Veletsianos et al., 2021, p. 25).

Other student factors were also reported as contributing to time poverty and dropout. **Academic preparedness** and **prior online academic experience** usually play a positive role in student persistence and success (Choi & Kim, 2018; Y. Lee & Choi, 2011; Y. Lee et al., 2013), making it easier for the student to adjust to the OHE system, particularly in the first semester, thus preventing dropout (Hachey et al., 2014). Many students who withdrew had never experienced tertiary online education before. Some who were used to on-campus, traditional face-to-face education, expected a similar experience (Eliasquevici et al., 2017) and resented the difference – for example, not having personal and synchronous contact with instructors and peers, nor a structured hour schedule. Some had trouble navigating the unfamiliar virtual campus and continuous assessment process, “got lost”, fell behind, and withdrew. Traditional part-time dropouts mentioned these factors more often – as many did not have any prior higher education experience; but these factors also affected NTPTs and stopouts, though less often.

**Unrealistic expectations and misconceptions** around studyload, time/effort, level of self-regulation, self-efficacy, and motivation demanded by OHE studies were also reported as a crucial factor, particularly by students without prior OHE experience, which is not surprising. These factors are crucial for students’ persistence in the first semester, as they may affect all their planning and engagement with the studies (Bawa, 2016; Greenland & Moore, 2022; Henry, 2020). A very common and all-embracing misconception that appeared in accounts of both students and professors was that OHE studies are *easier*, which is consistent with the literature (Hyllegard et al., 2008; K. Lee et al., 2019; Veletsianos et al., 2021). Thus, students ended up facing difficulties they did not expect and usually were not prepared for – which impinged on their time. One key misconception related to easiness regarding study load – the study hours expected versus actual study time needed for a course (which may vary depending on student, course design and difficulty, learning materials, and so on). Open university learners commonly expect their studies to require less time – and sometimes this is connected to what the university tells them are the estimated hours for their course(s), which depends on the accuracy of the study load planned by learning designers for each course (particularly at UOC). By way of example, in the UKOU “from one third up to two thirds of our students say that they have to study for longer each week than the University’s estimated study hours for their course”; and “43% of our students actually expected their course to require fewer hours per week” (Thorpe, 2006, pp. 502-3). This appeared frequently in accounts from both dropout and stopout students in our research, who felt unexpectedly time-pressured and struggling to find time. Such situation was often compounded by the difficulty to autonomously self-regulate their learning – finding and studying and organizing everything on their own, as one student put it. As Thorpe (2006) expressed it, “in the gap between study hours expected and study hours actually expended, lies the possibility of time proving manageable or unmanageable for our students” (p. 504). Other participants in the dropout and stopout groups, however, mentioned they had overestimated their own capacities and time availability – for instance, when they enrolled in too many courses, or thought they would be able to dedicate much more

time to studies. Such unrealistic expectations regarding themselves are also connected to withdrawal in the literature (Bawa, 2016; Korstange et al., 2020; Sánchez-Gelabert, 2022).

An **institutional factor** is possibly connected to such misconceptions and expectations: the way open universities often advertise their flexible educational model and services to their public – the ubiquitous “**anytime, anywhere**” claim (Ilgaz & Gülbahar, 2015; Kahu et al., 2014; Veletsianos et al., 2021). As discussed previously, OHE rhetoric of flexibility is belied as it also imposes very high demands on student self-motivation, self-regulation, and time availability (Buck, 2016; Kuo et al., 2014; Nikolova & Collis, 1998). This issue was addressed by the professors inquired in Contribution 5, who also connected it to the problems of open-entry and lowering standards in order to retain students. Anyhow, student misconceptions that increase their likelihood of dropping out may very well derive from open universities’ discourses (K. Lee et al., 2019). “There are challenging relationships with marketing and sales, and the extent to which demand is illegitimately created on the basis of over-promising student outcomes” (Tait, 2018). More crucially, “misleading statements, for example, about how easy it is to study will lead some students to register on an unrealistic basis and to individual disappointment and high dropout statistics” (Tait, 2015, p. 5). Thus, new-entry students often begin their first semester beguiled by several unreal expectations and are then confronted and surprised by the “profoundly self-regulated and self-disciplining nature of distance learning, in stark contrast to the ostensibly ‘flexible’ and personalised consumption of the courses that learners may have anticipated” (Selwyn, 2011, p. 381).

Often connected to unrealistic expectations and misconceptions, unrealistic or inappropriate **enrollment** was also a course-level factor mentioned by participants as impacting their decision to withdraw. Simpson (2021) mentions that “the second biggest reason that students often give for dropping out is that they were enrolled in the wrong course” (p. 308). The first enrollment and its course choices (Simpson, 2009) are crucial for withdrawal, for it defines the whole first semester, which is the riskiest period for dropout. For our participants, enrolling in too many courses, courses that did not fit their expectations, or courses they felt were too difficult or demanding, strained their motivation and persistence (Wladis et al., 2014), often piling with other common pre-entry student issues such as low academic preparedness, lack of prior OHE experience, and time poverty (K. Li et al., 2019; Stone & O’Shea, 2019a).

Other **course, program, and institutional factors** were also reported as important and often connected with time issues. First, the open OHE **educational model** proposed by the UOC, characterized as flexible, asynchronous, fully online, and based on continuous assessment (Rivera-Vargas et al., 2019; Sangrà et al., 2012), was almost always a novelty for students without prior OHE experience, particularly the part-timers (both traditional and non-traditional), to which they had to adapt. Such adaptation was frequently seen as an important part of the general process of student adjustment in their first semester of studies, which heavily demands time and effort (K. Lee et al., 2019; Mittelmeier et al., 2019). One frequent complaint about the educational model was around its **impersonality**, to which many students were not used. Indeed, the typical absence of physical and temporal co-location of flexible open OHE models represents a key challenge of self-directed learning that often generates feelings of

isolation and diminishes institutional commitment (George et al., 2021). Many students who withdrew resented the absence of structured, regular, physical class meetings and timely in-person interaction with faculty and peers. In their voices, the resulting demands on their self-directedness was often felt as “now I have to do everything on my own”, entailing high levels of self-regulation and self-motivation (Broadbent & Poon, 2015) - and *time* (Kahu et al., 2014). That is, the spatial and temporal flexibilities inherent to the open online educational model were experienced as imposing **heavy demands on student** self-motivation, self-discipline, self-regulation, and time availability (Buck, 2016; Houlden & Veletsianos, 2019; Kuo et al., 2014; Nikolova & Collis, 1998). Many students – particularly the ones without prior experience and with unrealistic expectations – were simply not prepared for these huge personal demands; striving to adjust and carve out time and space to study from their busy lives, students often experienced severe time conflicts and pressure (Buck, 2016; Kahu et al., 2014; Naidu, 2014), which was a main driver for dropout (Farrell & Brunton, 2020; Simpson, 2004a; Veletsianos et al., 2021). In other words, the independence and autonomy required from learners were often perceived as overwhelming by both dropouts and stopouts – a common student experience that has been portrayed in the literature: “many students frequently cited frustrations with learning independently, including difficulties understanding tasks on their own or lack of timely feedback” (Mittelmeier et al., 2019, p. 29).

Several other course and program factors were reported to be connected to withdrawal, but not as frequently as the factors discussed above. Whereas most of them also impacted time negatively, oftentimes compounding other time challenges, some were more connected to psychological attributes such as student motivation and satisfaction. **Course design** characteristics linked to continuous assessment (e.g., overlapping or too many or too time-consuming assignments, poor or confusing instructions, falling behind and not having assignment extensions) and perceived course workload and difficulty (e.g., too difficult or too laborious courses) strained students’ time and effort, with some withdrawing in response. These factors are known to impact completion rates (Greenland & Moore, 2022; Hachey et al., 2018; Korstange et al., 2020; Y. Lee and Choi, 2011; Muljana & Luo, 2019; Park & Choi, 2009; Snyder, 2014). **Program factors** depended more on the roles of faculty (instructors and academic advisors) and appear as dropout influencers in the literature: poor quality of instruction and/or instructor (Hachey et al., 2018), poor quality of interaction with instructors and advisors (Pilkington, 2018), quality of feedback and coursework (Bunn, 2004; Hart, 2012; Yang et al., 2017), and deficient academic support (Y. Lee & Choi, 2011; Muljana & Luo, 2019; Park & Choi, 2009). These factors were claimed to influence negatively the students’ motivation and satisfaction. However, it must be stressed that, in our participants’ experiences, they were seen as secondary factors that made adaptation and continuance even harder, but not as primary reasons for withdrawal. It is also interesting to compare these results from dropouts and stopouts with a coetaneous research with persistent students at UOC. Analyzing the effect of “pedagogical and institutional accompaniment to the student body” – that is, the continuous support and teaching provided by, respectively, academic advisors and instructors - Rivera-Vargas et al. (2019) found “medium to high levels of dissatisfaction with these resources as assessed by the students” (p. 3385). Surprisingly, in our study with students who had withdrawn

(Contribution 4), such dissatisfaction with faculty and their services was not nearly as prevalent nor very significant for withdrawal.

Some important psychological factors – student **motivation and satisfaction** – also appeared connected to the decision to withdraw, which is consistent with the literature (Bawa, 2016; Hart, 2012; Holder, 2007; Tinto, 2017). Such factors usually appeared associated with several of the variables discussed above; for instance, falling behind in their studies whilst struggling to persist and juggle multiple commitments at the same time often left students demotivated, which in some cases was worsened by them failing courses. Disliking course or program and dissatisfaction with faculty were also connected to procrastination, which is consistent with other studies (Cerezo et al., 2017; Chow & Shi, 2014). However, it must be said that motivation and satisfaction were not the main foci of our exploratory inquiry, which produced mixed results: some students who withdrew were satisfied or even very satisfied with the UOC and their courses, and motivated by them – but they attributed their decision to leave the university mostly to their own life circumstances, skills, or choices, and particularly to the crucial issue of time conflicts. In this they were in line with previous observations that most learners relate the main cause of withdrawal to personal circumstances (Beer & Lawson, 2017; Greenland & Moore, 2022). Moreover, motivations to engage with OHE studies were varied but mostly connected to professional advancement and self-fulfillment in the case of NT learners, and entering the job market and vocation on the part of traditional students. However, apart from one participant who had a secured promotion in case of graduation, none of the students who dropped out had serious extrinsic motivations or obligations to continue studies, such as scholarships, or studies financed by employer – which seems to corroborate the assumption that OHE studies were most probably their third priority, making it more likely for them to prioritize other life commitments such as work and family over studies.

Lastly, an essential caveat is needed as regards the self-reported reasons for withdrawal given by our student participants. I quote in extenso two important authors in the literature who voiced such concerns with precision:

Questions can be raised about whether or not time is a causal factor, or whether it masks other factors that are less palatable. Students who feel that they are not succeeding, may choose to lay the blame on factors outside themselves and their own abilities. But time is implicitly bound up with learning success, in that different learners might be able to learn the same thing, but some would take very much longer than others. Learning often has to be measured within time constraints, meaning that we cannot ignore the length of time it takes learners to achieve mastery. (Thorpe, 2006, p. 502)

Students' understanding of their reasons for dropout may not always be clear to them. They might be having great difficulties with the intellectual challenges of a course, for example, but may nevertheless genuinely feel that they might have understood the concepts given enough time. They may therefore give lack of time as a reason for dropping out when in fact the course was always going to be too difficult for them. (Simpson, 2003, p. 31)



However, such concerns may be retorted based on some peculiarities of our findings. First, most participants mentioned several other factors that were connected to their time poverty, and also often blamed themselves for it – their procrastination, lack of organization, academic preparedness, and prior experience, and so on. Moreover, some students made it clear they had invested time and effort in a course but did not manage to learn properly, or at least not enough to do well in the assessment tasks or exams – deeming the course “too difficult” *for them*. Of course, some students may take longer to learn and have more difficulty – but this will obviously impact their time, nonetheless, and they will experience it as “lack of time”, regardless of its causes. A second point that will be discussed next is that most persistent students also – and significantly – placed a lot of stress upon the time challenges they experienced in their first year, which were quite similar to the ones experienced by dropouts and stopouts. Finally, most professors also agreed that time and life circumstances were the main reasons for student withdrawal at the UOC, as discussed below.

### ***9.2.1.2. Persistence Facilitators and Barriers and the Time-factor***

While most of our findings regarding withdrawal were expected, some results derived from the inquiries upon persistent students presented some important differences in relation to previous studies. First, the **transition** to online studies and the **first semester** were reported to involve several challenges that were analogous to those reported by students who withdrew – part of the crucial student adjustment process already mentioned (K. Lee et al., 2019). While for most participants such process was smoother in comparison with the experiences of dropouts and stopouts, some learners faced a more difficult time and even **failed courses** – but persisted.

For persistent learners, **time poverty and time-related conflicts** were also the main persistence barriers; like the participants who withdrew, persisters reported that the main difficulty was **juggling study with multiple commitments**. This finding is important because it shows how prevalent and central such challenge is, even for persisters – which is in line with most of the literature (Kara et al., 2019; Y. Lee & Choi, 2011; K. Li & Wong, 2019; Wladis et al., 2020), but particularly with Kember’s (1989) stress on the social integration factor. While almost all participants succeeded in finding fairly good balance between their commitments, this was more difficult for the NTPT learners, as expected, because of their **life circumstances** – usually full-time jobs and/or family care. In contrast, young TFT students who did not have full-time employment complained more about not having time for themselves, their social activities, and leisure.

Most students experienced **time pressure** accompanied by **anxiety and stress** due to conflicts between their different roles and responsibilities, but they impacted more the NTPTs. Indeed, almost all NTPT persisters contemplated stopping out, particularly during stressful periods in their first semester. However, most participants reported that such stress was usually not excessive and thus manageable. Moreover, quite a few learners – including procrastinators - affirmed that time pressure had a *positive role* for them, saying they were used to working under pressure and benefitted from it - or even needed it to be productive and engaged. This finding is surprising and, to our knowledge, seldom appears in empirical studies, if at all; for instance, Brown et al. (2015) and Wladis et al. (2020) do not mention it.

Time pressure was often connected to **time management** skills. Not surprisingly, most persisters mentioned that they had good time management – a key persistence factor in the literature (Bawa, 2016; Broadbent & Poon, 2015; Geduld, 2016; Hart, 2012; Holder, 2007; Kara et al., 2019; Y. Lee & Choi, 2011). Some participants with heavy workloads and chaotic schedules managed to persist because of their effective time management strategies, a phenomenon that has been mentioned in some studies (Bunn, 2004; Katiso, 2015). However, a number of different time management strategies or styles were reported; one complaint that was common across different profiles is that, to manage their time well, students had to borrow time from other areas of their lives (family and social life, leisure, even sleep time). Surprisingly, over a fourth of our sample acknowledged they had a chaotic time management style, often engaging in **procrastination** and last-minute cramming. In contrast with dropout and stopout participants, while these strategies usually induced more time-pressure and conflicts for persisters, and in one case (of a chronic procrastinator) even failing a course, even procrastinators with heavy work-family duties and chaotic time management managed to persevere, adapt, and even reach high achievement in their second semester - which they ascribed mostly to their resilience and intrinsic motivation. This finding goes against the grain of the current literature, which generally conceptualizes procrastination as a self-regulation failure (Klingsieck et al., 2012) or a failure of performance (De Palo et al., 2019), as such connected to a strong negative influence upon persistence and retention in OHE (Hasan et al., 2021; Melgaard et al., 2022; Svartdal et al., 2020). Indeed, very few persisters who reported procrastinating engaged in some forms of active procrastination or active delay (Corkin et al., 2011), like prioritizing other more important academic tasks over assignments they did not like. Most referred to *maladaptive procrastination*, which strained them and often caused problems – but they were either used to it or else managed to sustain their efforts and adapt.

**Lack of previous OHE experience** was a source of adaptation challenges for many persisters; some who had prior on-campus experience had difficulties with the asynchronous, impersonal OHE educational model. However, in contrast with the students who withdrew, most NTPT persisters adapted well. **Academic preparedness** had some influence in this, for none of the participants mentioned technological difficulties; most had positive attitudes toward digital technologies and felt that the technical aspects of education through information and communication technologies were enablers, rather than barriers, for their persistence – although some participants needed time to adjust their tech savviness to its specific employment for learning. This finding is in line with observations in previous studies (e.g., Jelfs & Richardson, 2013; Wozniak & McEldowney, 2015). Moreover, even for the students who faced early adjustment difficulties and failed courses – but eventually managed to adapt successfully -, the online educational model/system became a facilitator and motivator. That has also been found in a study with UOC undergraduate persisters (Rivera-Vargas et al., 2021).

The **unrealistic expectations** factor represented one of the major differences between persisters and dropouts/stopouts. Two thirds of persistent learners had realistic expectations or expected their courses would demand *more* time and work; one third expected their studies would be easier and demand *less* or *much less* time and effort from them. For the latter group, unrealistic expectations and lack of OHE experience often generated transition difficulties,

which were analogous to the ones reported by dropouts; however, they managed to find time to adapt in their second semester, and persisted. These results contrast with the pervasiveness of unrealistic preconceptions among the participants who withdrew, which seems to indicate that accurate expectations are crucial for persistence in the transition period (Stone & O'Shea, 2019a; Veletsianos et al., 2021); students are more likely to be satisfied, motivated, and persist, when their expectations are met by their actual study experience (Henry, 2020). However, these findings also diverge from results reported in previous research with persisters in open universities, in which inaccurate expectations, and the frustration and demotivation derived from their clash with actual studies, were much more common (e.g., K. Lee et al., 2019; Su & Waugh, 2018; Thorpe, 2006). Our findings are more in line with the work of Henry (2018, 2021), which found few inaccurate expectations among OHE persisters.

Several participants stressed the importance of **psychological attributes** as persistence enablers for them. Besides time management, **self-regulation and self-efficacy** were often mentioned. To navigate successfully the many challenges posed by transition, most learners reported a high level of self-sufficiency and independent studying. For the ones who were not used to the high degree of self-directedness demanded by OHE learning, being forced to study independently helped them to gain or hone skills such as time management, self-reliance, and independence – a phenomenon also found by Mittelmeier et al. (2019). This corroborates prior studies that found that self-regulatory skills and autonomy influence ability to manage different layers of transition (Wozniak & McEldowney, 2015), thus being crucial for first-year persistence (Broadbent & Poon, 2015; Geduld, 2016; Holder, 2007; Y. Lee & Choi, 2011; Stephen et al., 2020). A fortiori for new-entry learners who were already time-poor, like most NTPTs, the capability for self-discipline and independent study planning and organization were key (George et al., 2021). Many persisters also mentioned the attributes of **resilience and self-determination**, particularly when they found themselves overwhelmed in their first semester. Indeed, persistent learners often perceive themselves to have high personal self-determination and commitment (Holder, 2007; K. Lee et al., 2019).

Connected to self-determination, most persisters reported high levels of personal or intrinsic **motivation**, which corroborates previous studies (e.g., Eliasquevici et al., 2017; Kocdar et al., 2018; Y. Lee & Choi, 2011; Muljana & Luo, 2019; Rivera-Vargas et al., 2021). Precisely because online studies are heavily self-directed and self-learned, motivation or lack thereof can be a deciding factor in persistence or withdrawal (Bawa, 2016). Thus, being deeply motivated and maintaining motivation are critical for student persistence and retention (Henry, 2021; Simpson, 2004a). Another important psychological factor that appeared related to motivation and persistence was student **satisfaction**. Most of our persisters reported high levels of satisfaction with their studies, which was derived from multiple variables. First, most participants were satisfied with and thankful for the temporal and spatial flexibility offered by open OHE, the opportunity to engage in degree-level studies, and other advantages of e-learning – sources of satisfaction that support prior studies (e.g., K. Lee et al., 2019; Muljana & Luo, 2019; Rivera-Vargas et al., 2021; Yang et al., 2017). This was most clear when participants reported successful adjustment and performance enabled by OHE flexibility in their first semester. Second, most persisters were very satisfied with their coursework and the

roles of instructors and academic advisors, which enhanced their motivation. According to the literature, perceived quality of teaching and support is a most decisive factor with regards to students' continuance intention, due to the influence it has on student satisfaction levels (Chow & Shi, 2014; Ilgaz & Gülbahar, 2015; Martínez-Argüelles & Batalla-Busquets, 2016; Tait, 2014). Lastly, some participants derived satisfaction from liking course, program, and learning, and from seeing that they were able to juggle multiple responsibilities and be successful, which accords with the literature (K. Lee et al., 2019; Thorpe, 2009). These findings are in contrast with results by Rivera-Vargas et al. (2021), who also studied persisters at the UOC – a large proportion of whom expressed dissatisfaction with faculty and institutional support services. In our inquiry, few students were dissatisfied – with the impersonality and distance of OHE, or their advisors, or even the focus of their chosen degree program. Although many in this cohort contemplated stopping out, even these students persisted, mostly because of their self-determination.

### **9.2.1.3. Professors' Views**

The professors' views on the main dropout factors mostly mirrored the students', in that they too emphasized **time-related issues** as the major cause. However, professors tended to stress more some external, **student-centered factors** connected to time: time poverty, life circumstances (changes in work, family, health), time and study management skills, procrastination and poor self-regulation, workload and time availability, student expectations, and lack of academic experience and preparedness. They also mentioned inadequate **enrollment** – in too many courses, or too difficult ones -, which depends on the student's choice but should also be considered a responsibility of the university (particularly through academic advising). Nonetheless, professors also emphasized internal variables, or **course and program factors**: heavy course workload and assessment load; difficult or too theoretical courses; and large classes in introductory courses, preventing personalized attention to the students. The **timing of dropout** was also considered important: students tend to dropout early in the course in their first semester, which makes early detection of at-risk students of paramount importance. Regarding student persistence, professors often highlighted the positive roles that faculty often have for it: **instructor support** and connection, and support and orientation for first-year students by **academic advisors**. In that they concur with the literature, which asserts that quality of instructor/instruction and academic support are key to persistence (Bawa, 2016; Hachey et al., 2018; Henry, 2018; Stone & O'Shea, 2019a).

Lastly, some professors also mentioned **open-entry policies** as a key dropout variable, in that it admits unprepared students who are more likely to dropout – a factor that has often appeared in the literature (Cochran et al., 2014; Hachey et al., 2012; Korstange et al., 2020; K. Li & Wong, 2019; Simpson, 2013). That poses a difficult conundrum for open universities: on the one hand, faculty want to preserve standards (“this is a university, not some sort of easy e-learning”); on the other hand, while open universities struggle to diminish dropout rates, being *open* is the kernel of their ethos. However, professors also reported that the openness and flexibility that are typical of open universities may also offer many benefits for the students (Deschacht & Goeman, 2015; Houlden and Veletsianos, 2019; Moore & Greenland, 2017; Sánchez-Gelabert, 2022; Simpson, 2003; Whitelock et al., 2015), and are usually the main

reason why they choose to engage with OHE in the first place, as discussed. The possibility of restricting access was mentioned by a few professors and has been discussed in the literature (e.g., Hachey et al., 2013), but it is rather doubtful it will ever be implemented. Some authors (Delnoij et al., 2020; Henry, 2020; Woodley & Simpson, 2014) advocate that *managing student expectations* is more important and adequate than restricting entry, an opinion which was also stressed by a few participants.

It must be noted that the perspective of faculty – from their experience and viewpoint - on the reasons for dropout is important for several reasons, particularly in UOC’s case: (a) professors design courses and program pathways; (b) professors can intervene directly in course and program variables connected to dropout; (c) their perception usually determines or conditions institutional interventions; (d) their perception (and the instructors’ and academic advisors’, who usually have closer contact with the student) of the reasons for student dropout may on occasion be more accurate (Simpson, 2003). In this regard, some recent studies (Bolliger & Martin, 2018; Q. Li et al., 2021; Martin et al., 2020) have inquired upon the perceptions of faculty around student support and engagement in OHE.

However, faculty accounts must also be taken *cum grano salis*. Not surprisingly, institutional staff, including professors, often “put much greater emphasis on academic reasons for withdrawal, such as lack of preparedness, insufficient intelligence, lack of appropriate skills and so on. Martinez (2001) notes: ‘In effect staff tend to emphasise those factors associated with withdrawal over which they feel they have little control—such as student intake’” (Simpson, 2003, p. 31). In this sense, blaming mostly the students may be a form of external attribution by the professors and a means to dodge responsibility for the possible roles themselves, their learning design, and other course, program, and institutional factors may play in student dropout. In which case, professors were possibly adopting *Darwinista* (survival of the fittest: students drop out because they are somehow unfit) and *Fatalista* (students drop out due to reasons beyond their control) attitudes to student retention (Johnston & Simpson, 2006; Simpson, 2013). However, many professors also reported a concurrent *Retentioneer* attitude (students often drop out because of lack of proactive support) (Simpson, 2003), in that they believed students would be more likely to persist if they had more personalized support, accommodation for their particular issues, and help from the university. These attitudes are particularly important for the consideration and implementation of institutional interventions addressing persistence and retention.

### **9.2.2. Research Question 3: Perception of the Roles of Flexibility for Dropout/Persistence**

Drawing from their personal experiences, students and professors reported that flexibility has both positive and negative effects for persistence and retention, which adds to the literature (Houlden & Veletsianos, 2019, 2021; Nikolova & Collis, 1998; Selwyn, 2011; Veletsianos & Houlden, 2020; Veletsianos et al., 2021). Let us analyze first the perceived **positive aspects**; many of them are in line with a similar investigation conducted at UOC with persistent and successful students by Rivera-Vargas et al. (2021). For most students in our samples, the temporal and spatial flexibility offered by open OHE was a source of satisfaction and the main reason why they chose to engage with online degree-level education, because of its suitability

and their scarcity of available time. Particularly for the persistent learners, such flexibility was perceived as enabling autonomy, self-time management and organization, and the opportunity to balance study with their other commitments, especially work (Guri-Rosenblit & Gros, 2011; Rivera-Vargas et al., 2021). For instance, many NTPT persisters adopted a flexible self-organization, dedicating more or less time to studies according to their availability – which had to fit around busy and varying work and family schedules. Thus, in their perception, flexibility may help achievement of good conciliation of studies with other life responsibilities (which is in line with the results found in Rivera-Vargas et al., 2021), which was especially important in their first semester. Indeed, flexibility was seen by many persisters as crucial for early *student adjustment* in the first year of studies – a crucial process that, as seen, has a huge influence on persistence and withdrawal (Mittelmeier et al., 2019). When students succeeded in adjusting and were successful, that was seen as a source of accomplishment and motivation. Moreover, many students in the three cohorts (dropouts, stopouts, and persisters) were thankful for the easy accessibility allowed by open entry, which represented the only option for some students; persisters were particularly motivated by that opportunity (Rivera-Vargas et al., 2021). Professors voiced similar opinions regarding the positive aspects of flexibility, whilst also adding others: flexibility may enable easier student adaptation, more student-centered learning, and salvaging students who fall behind - which is in line with what many persisters experienced, both in our research and in Rivera-Vargas et al. (2021).

These positive perceptions generated several suggestions by students for the adoption of flexible measures addressing course workload, overlapping of submission deadlines between courses, and extension of submission deadlines. However, other students' suggestions seemed impractical or unfeasible due to the nature of the UOC as a 100% online university, as they were closer to a blended learning delivery: synchronous group meetings with instructors, course groups in instant messenger cellular apps to address students' doubts, or personal student support by instructors via videoconference or telephone.

The **negative aspects** of flexibility were mostly voiced by the professors, although many students also pointed at some risks of flexibility (e.g., inducing procrastination). First, open OHE flexibility was connected to student misconceptions and unrealistic expectations – particularly around the supposed easiness of OHE. Both professors and students pointed that the educational model of open OHE, being strongly student-centered, demands more autonomy, self-regulation, and engagement - a high level of independent studying and self-sufficiency (Mittelmeier et al., 2019); and that flexibility may increase student procrastination and dropout, particularly amongst some student profiles. Many professors were concerned that too much flexibility may be disorganizing and lacking rigor; students seem to need clear and organized structures and scaffolding for their learning. In that perception they concurred with previous research, for instance with adult persisters at the Korean National Open University: “In fact, adult students in DE [distance education] may want to be told exactly what to do and how to perform, especially at the beginning of their study” (K. Lee et al., 2019, p. 32). Another serious risk voiced by professors was that providing more flexibility in learning design and the continuous assessment process would augment faculty workload, increase the risk of losing professorial control and be a threat to educational standards and quality. These negative

perceptions raised strong resistance among several professors against many possible flexibility interventions, in their courses and at the UOC, aimed at the retention of more students. In this sense, these participants evinced a conflict that seems to be common in open universities: “Faculty staff may be torn between the draw of standards and the pull of retention” (Simpson, 2003, p. 140). Lastly, open-entry, a typical form of OHE flexibility, was discussed above (in 9.2.1.3.) in its relationships with the problem of dropout, from the professors’ viewpoint.

### **9.2.3. Research Question 4: Recommendations for Practice**

In this subsection we summarize the recommendations given in each contribution and develop them further based on the literature, thus harvesting key tenets to translate the findings into actionable insights. In what follows we first define the three key tenets derived from our findings, and then offer a list of core recommendations for practice.

#### ***9.2.3.1. Focus on the Student Experience***

The first tenet to tackle student dropout and foster persistence is to take into account the students’ experience, their diverse profiles and specific needs (Brindley, 2014) – in their own specific life contexts. As there usually is a lack of understanding from institutions regarding online students’ needs and circumstances (Henry, 2020; Muljana & Luo, 2019), open universities should therefore strive to know their students’ expectations, necessities, and personal circumstances **before the first enrollment** in order to place the needs of the students upfront (Rotar, 2022). This may be done via scientific research that addresses the student experience in general (like this dissertation), but, most importantly in the case of the UOC, also via early academic advising, for academic advisors are the UOC actors that have personal contact with new-entry students before their registration. The knowledge thus generated should serve two practical aims: to identify at-risk students at the earliest, according to their time availability, possible conflicts with work and family commitments, unrealistic expectations, academic preparedness, and so on; and to prioritize early student-informed interventions to respond to their specific needs (Greenland & Moore, 2022; Netanda et al., 2019). Ideally, open universities should also take into account the **experiences of faculty** regarding dropout, persistence, and engagement, as argued above, to build a more comprehensive picture.

#### ***9.2.3.2. Focus on Induction and First Year***

Both our findings and the recent literature ascertained the crucial importance of the first year stage for dropout and persistence; therefore, interventions should be aimed at improving the **first year experience**<sup>11</sup> and the adjustment process inherent to **transition**. Induction efforts and early interventions should thus concentrate on the critical period before the initial entry (first enrollment) and the first months of the first semester (Muljana & Luo, 2019; Shah & Cheng, 2018), as “the first six weeks are typically considered a high risk transition period for first-time learners” (Brown et al., 2015). Before and during the first enrollment, with a distinctive focus on the first or the early courses of study, **induction** must offer “pre-study

---

<sup>11</sup> As this seems to be the commonest temporal focus of retention efforts in higher education, there have also been calls to improve the transition into the second year of studies, beyond induction (DeAngelo, 2014; Wozniak & McEldowney, 2015).

information, advice, guidance and admission” (Tait, 2015, p. 5): students should ideally have a clear idea about every important dimension of OHE studies and their demands, in terms of time commitment, effort, and academic/technological skills, and receive detailed information about curriculum, support systems, assessment process and its schedule, and so on. Induction may also involve faculty in the task of predicting and identifying at-risk students (Raju & Schumacker, 2015; Wladis et al., 2015), particularly those enrolled in courses with high attrition rates (Wladis et al., 2014; Wladis & Hachey, 2017).

### ***9.2.3.3. Focus on Temporal Challenges***

Given their vital importance for dropout and persistence, **time-related factors** should guide induction, course design, and academic support, prioritizing at-risk new-entry students (especially time-poor NTPTs with multiple life commitments). Broadly speaking, efforts should focus on both the student and the institution. In order to ensure a smoother transition, students should be supported and provided tools to improve their self-regulation skills, particularly time management; to enhance their familiarization with the virtual campus and the assessment process; and to prevent unrealistic student goals and enrollment. Faculty and course/program design should prioritize amelioration of time-poverty inducing factors, such as excessive and/or inaccurate student workload, overlapping assignments, and bad enrollment choices.

### ***9.2.3.4. Practical Recommendations***

Based on the principles and suggestions above and grounded on the literature, the following list offers key best-practice strategies:

- Provide **personalized pre-enrollment advisory** to understand the students’ evolving needs and help them set achievable goals (Horvath et al., 2019); to guide personalized, realistic, feasible enrollment that is assessed to be more likely to promote achievement and satisfaction in each particular case; and to provide students comprehensive, essential information about requirements, difficulty, and dynamics of courses and program so as to prevent unrealistic expectations and help transition (Clay et al., 2008; Nichols, 2010; Rotar, 2022);
- Improve **specialized induction** assessing students’ readiness for learning, motivation, time availability, and so on (Rotar, 2022); and identifying at-risk students (NTPTs with multiple commitments and/or without previous OHE experience) (Greenland & Moore, 2022; Naylor et al., 2017; Netanda et al., 2019), perhaps with the help of learning analytics (Bravo-Agapito et al., 2021; Gibbs et al., 2006; Nistor & Neubauer, 2010; Simpson, 2004b);
- As part of induction, at the outset of courses, and throughout the first year, impart **targeted transition orientation programs** and **online study support skills** to help new-entry students transition and become self-directed independent learners (Holcomb et al., 2018; Korstange et al., 2020). Key foci should be to foster, facilitate, and improve: life-study time management skills and SRL strategies, offering planning tools (Greenland & Moore, 2022; Muljana & Luo, 2019; Rivera-Vargas et al., 2021; Samra et al., 2020; Tabuenca et al., 2022; Thorpe, 2006); technological preparedness; and



familiarization with the virtual campus and the OHE learning model (Wozniak & McEldowney, 2015)<sup>12</sup>;

- Through both instructors and advisors, provide proactive, **personalized and motivational support, interaction, and monitoring** throughout the first semester, particularly to NTPTs (Greenland & Moore, 2022). For students in online systems, the supportive role of human contact is critical to success (Rivera-Vargas et al., 2021; Stone & O'Shea, 2019a; Tait, 2014); against the demotivating perception of physical distance, remoteness, and isolation, personalized support can often feed student motivation and satisfaction through the feeling of being recognized as an individual (Tait, 2015, 2018)<sup>13</sup>;
- In the same vein, provide timely, high-quality, **personalized instructional feedback** and strategies (Gaytan, 2015; Muljana & Luo, 2019; Whitelock, 2011); one costly but effective form is daily online feedback targeting metacognitive and motivational aspects, which seems to reduce student procrastination and improve SRL, performance, and goal achievement (Theobald & Bellhäuser, 2022);
- Several measures may be adopted regarding **learning design**. One of the most important, according to our findings, is **calibrating course workload** specifically for first-year students (Tabuenca et al., 2022), avoiding overload and rigid pace of learning. To optimize student workload management, advisors should provide clear and precise information about estimated course study times, while instructors should group study tasks and assessments into clearly indicated blocks of time (Thorpe, 2006; Whitelock et al., 2015). An useful guide for practical strategies focused on learning design and time - structuring time, time expectations and workload - in online courses can be found in Peterson (2020);
- Other important measures regard **assessment** (continuous assessment, in UOC's case) design and policy. Greater **flexibility** can be implemented to ameliorate or prevent time poverty and the impact of life circumstances: assessment extension policies and flexible options and deadlines (Greenland & Moore, 2022) and resubmission of unsatisfactory assignments (Pinchbeck & Heaney, 2017) for individual cases, recognizing personal circumstances, to help students "catch up" (Thorpe, 2006); regarding workload, avoid overassessment and try and reduce the time and effort required by assessment tasks (Greenland & Moore, 2022);
- At the **program** level, a series of interconnected measures for first-year retention have been implemented at UOC with the ESPRIA intervention (see Chapter 8), which may be useful in other open university contexts. These measures require a concerted effort by learning designers, professors, instructors, and academic advisors, overseen by an

---

<sup>12</sup> A good example of a targeted support program for first-year online learners in an open university (the Open Polytechnic of New Zealand) can be found in Grant et al. (2011) and Craig and Riquelme (2013). Another example, of a transition program for asynchronous online learning in Scotland, can be found in Campbell and McAdam (2022).

<sup>13</sup> "At the heart capacity of the teaching system which operates at a physical distance from its students to support them to success lies its capacity to provide personalised support: in other words to recognise and respond to the learner as an individual" (Tait, 2015, p. 8).

organizing university center<sup>14</sup>. They involved flexibilizing program pathways and providing enrollment options of personalized course packages that prevent overlapping of submission deadlines between courses, calibrating their workload and flexibilizing their assessment process;

- Last but not least, the effective implementation of all the measures above clearly requires specialized **training and support for faculty** (Whitelock et al., 2015), aimed at ongoing improvement and guidance of student services, especially academic advising and instruction (Eliasquevici et al., 2017; Gaytan, 2015; Heyman, 2010; Moore & Greenland, 2017; Muljana & Luo, 2019; Nichols, 2010).

### 9.3. Conclusions

The current dissertation set out to explore the lived experiences connected to dropout and persistence of students and professors in OHE through a single case study design. The purpose of the present research was guided by the need to tackle dropout as the central issue of distance education (Simpson, 2013; Woodley & Parlett, 1983; Woodley & Simpson, 2014), which requires understanding dropout and persistence in a multi-causal, comprehensive way. Several knowledge gaps were thus addressed in this endeavor, as our inquiry upon persistence and dropout focused on the first year experience and the roles of time and flexibility, in the context of a fully online open university. The resulting outcomes portray an enlightening and comprehensive picture of the student experience and the multitude of challenges and opportunities that students face across their learning journeys.

This section draws concluding inferences about the key findings and the implications of our contributions in both academic and practical terms. Lastly, it discusses the limitations of our contributions and of this dissertation, thus opening and outlining avenues for future research.

#### 9.3.1. Key Findings and Theoretical Contributions

The outcomes discussed above provide several academic contributions to the field of OHE dropout studies, thus carrying some implications. First, by mapping the field in a very encompassing way, our main literature review illuminates a number of knowledge gaps and problems. It portrays an area of scientific inquiry that seems sort of chaotic and still developing its foundations and core concepts. Related to that, perhaps the most important issue with the field is its lack of unified theories and definitions. Although developing theories with full explanatory power is undoubtedly hard or even impossible, owing to the complexity of dropout and retention processes (Kember, 1989), dropout and persistence studies should strive to provide precise definitions - which we were careful to do in all of our contributions.

Addressing a gap found in the literature review and answering the call made by Tinto (2015), our contributions sought to focus on student persistence and success rather than institutional retention, thus prioritizing the students' goals and interests. For such, it is necessary to give voice to the students – with the implication that, like in our contributions, persistence and

---

<sup>14</sup> In the case of this intervention at UOC, the eLearning Innovation Center.

dropout studies should take more in consideration the online student experience. By analyzing the students' and professors' voices, our empirical inquiries have advanced theoretical understanding about the first year transition to OHE, stressing the cruciality of the adaptation period and its manifold challenges for most, if not all, learners. In that regard, our studies support empirically the theoretical assumption that dropout and persistence are very complex and multidimensional phenomena (Berge & Huang, 2004; Kember, 1989). Indeed, several factors were found to be important for student attrition. However, the main explanation for the decisions to withdraw was *time* issues – encompassing two main concepts, time poverty and time conflicts. These factors appeared to be critical in the first semester, particularly for students who dropped out, and were connected mostly to student factors and situational barriers: their life circumstances, time management or procrastination, and unrealistic expectations. Struggling to juggle study time with multiple priorities, whence time conflicts derive, was seen as the main difficulty. However, the factors that influence student time challenges were complex and often interrelated with several other variables such as, inter alia, motivation, satisfaction, academic preparedness, and course design. Time-related challenges appeared as vital especially for the NTPT learners. Nonetheless, this experience is likely representative of the overall student population at UOC, as time challenges were deemed as very significant or crucial even by persisters, full-timers, and traditional students, which consists in one of the most important findings of this dissertation. In contrast with on-campus, traditional higher education, time seems to be the ultimate influencer of the student experience in OHE, emerging as a structural and transversal macro-factor for persistence and dropout. These essential results expand conclusions by previous exploratory studies, thus contributing to vital theory building.

Furthermore, several persistence enablers emerged from the inquiries of both students and professors. Among them, the most important ones were self-regulation, particularly time management; intrinsic motivation; learning satisfaction; and having varied forms of support. These conclusions lend credence to previous studies and theorizations, emphasizing that time management skills, independent learning, resilience, and motivation are crucial for student persistence in the transition to OHE, as the latter demands stringently upon students' autonomy, independence, and self-reliance.

These typical demands were discussed critically based on the professors' and students' experiences; they appeared intrinsically connected to the flexibility that characterizes open OHE. On the one hand, the flexibility promised – and to a certain extent delivered – by open universities allures new-entry learners, who have easier access to degree-level education through open entry policies. On the other hand, these students tend to be time-poor, without prior online academic experience, and often expect their studies will be easy, not being prepared for the online university's huge demands in terms of autonomy, self-regulation, and time. This inherent tension between “open” and “university” is the ultimate context of the higher dropout rates in open OHE, situating most of the factors and dynamics studied in this work. Lastly, the possibilities of adopting more flexibility in OHE were analyzed, thus adding to the growing body of literature on the subject. Professors and students considered some of them as risky but also offering potential advantages. However, the main conclusion reached

was that, ideally, there needs to be balance between structure and flexibility to promote student persistence, especially in the first semester.

### **9.3.2. Key Findings and Practical Implications**

The outcomes of this dissertation also have many practical implications, as they yielded several recommendations for policy and interventions that were discussed in section 9.2.3.4. above. Such recommendations were based on key tenets derived from our empirical contributions, which can be summarized as follows: to focus on student time challenges, the period of transition, and the first year experience; to provide early student-based interventions; to give special attention to first enrollments, via academic support; and to offer flexible measures connected to course design and assessment. It is particularly important for open universities to offer early specialized academic advising and orientation regarding time challenges, such as enhancing time management skills and managing student expectations and first enrollment. Academic advising is particularly critical in the case of the UOC, as each student is guided by one specific advisor from the period before the first enrollment to graduation, thus being able to follow and guide the student more closely.

One last point is important as regards practical implications of our findings. As discussed, the latter emphasized the import for dropout and persistence of student factors and circumstances that are external to the institution. Previous research had already found the same, leading “many institutions to conclude that most student dropout is caused by factors outside the institution’s control” (Woodley, 2004, p. 50). Indeed, student life circumstances – the key factor to influence time poverty and time conflicts - are hardly amenable to institutional intervention or influence. However, several internal or institutional variables were also found to impact the key time factor, such as course design, difficulty, and workload, and course, instructor, and feedback quality, among others. Therefore, institutions can and should consider the adoption of the recommendations mentioned, aimed at ameliorating the impact of time poverty and conflicts and ultimately enhancing student satisfaction and persistence in their first year.

### **9.3.3. Limitations**

While this dissertation work has contributed to understand better the problem of dropout in OHE and voice students’ and professors’ experiences, it is important to highlight some of its limitations, which stem mainly from its literature review strategy, foci of inquiry and time constraints, method and design, and generalizability.

#### ***9.3.3.1. Literature Review Limitations***

Here I focus on our main literature review (Contribution 1), which was performed at the beginning of the doctorate and provided a broad theoretical foundation for the subsequent empirical studies. The review possibly missed relevant studies due to database selection, short timeframe, and exclusion of studies not in English. Due to the nature of scoping reviews, breadth of analysis was emphasized rather than depth. Thus our mapping was very broad and over the whole field (i.e., covering studies on dropout, persistence, retention, attrition etc.); however, the quality and weight of evidence of the included studies were not assessed systematically. It must be said that mapping and discussing the almost innumerable

characteristics of 138 articles and doctoral dissertations is extremely laborious and time consuming; it precludes, by necessity, a fine grain analysis, which is a limitation in itself. Perhaps a different approach could have presented different benefits for this thesis, while also incurring in distinct limitations. A systematic review of empirical articles, over a longer timeframe (e.g., 10-20 years), would be able to focus on a *specific* aspect of OHE dropout that was key to our investigations – for instance, the period of transition to OHE studies and the first year experience, or empirical investigations upon the prevalence or importance of dropout and persistence factors. Although such procedure would limit considerably the scope of knowledge reviewed, it would undoubtedly provide a more detailed theoretical basis for our foci of inquiry – and be easier to publish.

### **9.3.3.2. Foci of Inquiry and Time Constraints**

Although quite important, our chosen foci of inquiry – time, flexibility, first year, and student experience - precluded the research in depth of other variables that may be crucial as well, alongside the study of dropout in other stages, such as the second year of studies, or a more in-depth consideration of gender differences. However, given the conspicuous dearth of literature and knowledge regarding the aforementioned foci, alongside their cruciality for dropout and persistence, this limitation may be viewed as necessary. Another key limitation is that we have not included investigations with two important actors, instructors and advisors, that are in direct contact with students (and are probably the ones who can intervene more directly and efficiently). This happened mostly because of time constraints. Indeed, long in-depth interviews with academic advisors were conducted and transcribed, and research with instructors was planned, but the author simply did not have enough time to produce publishable research based on the collected data available, or to even begin research work with instructors. (Yes, doctoral students also suffer from time issues and burnout – we are human, after all).

### **9.3.3.3. Methodological Limitations**

Our deliberate choices for sampling and data collection strategies also entailed some limitations. Our samples were relatively small and, by design, not statistically representative – yet that is the norm in qualitative, exploratory studies employing in-depth long interviews (Woodside, 2010). Purposive maximum variation sampling limits generalization, but it was adequate for our aim of capturing a rich variety of experiences from a diversity of subjects (and profiles) as comprehensively as possible. The qualitative data collection strategy employed in all of our empirical contributions, based on in-depth interviews, also presents limitations (Creswell & Plano-Clark, 2011) connected to their inherent subjectivity (Bryman, 2016) and dependency upon the skills of the interviewer and the relationship between the interviewer and the participant (Gubrium & Holstein, 2002).

However, a more important issue linked to the use of interviews regards the validity of conclusions derived from student self-reported reasons for withdrawal, which is connected to the problem of internal or external attribution. Even though these possible limitations were already discussed in section 9.2.1. above, here they are revisited in light of their significance. Two key authors in the field have voiced concerns around the reliability of the reasons students give retrospectively for dropout, which are connected to our main findings:

Inevitably there is a chance that the reasons that students give for withdrawal are post-event rationalizations ... Even when the reasons given are true they don't necessarily reveal underlying causes. For example the most common reason given for withdrawal in distance learning schemes is insufficient time. But lack of time is sometimes about choice of priorities and, in a particular case, loss of motivation may have led to a subsequent reordering of priorities and consequent downgrading of study. (Simpson, 2003, pp. 22-26)

Woodley (2004) noted that such concerns were already voiced in the context of traditional higher education:

“To accept such post-hoc interpretations at face value is a questionable practice, considering the complexity of the dropout phenomenon and the natural tendency for persons to rationalize behaviour which might be regarded by others as evidence of failure” ([Astin,] 1975, p. 14). This scepticism has been noted too in the field of distance education (Woodley & Parlett, 1983). Here students tend to come up with reasons along the lines of “not enough time” and “I was too busy at home/work”. Very few say that they were finding the courses too difficult. This has led many institutions to conclude that most student dropout is caused by factors outside the institution's control. (pp. 49-50)

Therefore, “the reasons given by an individual for dropping out need to be treated with extreme caution” – and surveys are not particularly suitable for capturing complex reasons: “An interview, in which the person's reason is probed, teased out and even challenged, would seem preferable to a questionnaire with simple tick boxes” (Woodley, 2004, p. 50). That constitutes a justification for our utilization of in-depth interviews, in that they enable us to avoid or at least circumvent such reliability issues. Long interviews can illuminate the subjective construction of personal meanings around the reasons for withdrawal or persistence within the individual's life context and context of studies. Moreover, even though most participants mentioned time-related issues as the main reasons for withdrawal, they were researched in as comprehensive a way as possible, as the students themselves connected them to their life circumstances, priorities, motivation, course design and difficulty, and several other influencing variables. As this study is exploratory and descriptive, it is difficult to ascertain hard causality – i.e., students withdrew *because* of time-issues. Nonetheless, exploratory-descriptive studies portray *subjective reasons* (or, in the case of professors, their perception of the students' reasons) and associations, which, by the very nature of dropout, are often complex and multidimensional. Thus, even if the students' reported reasons are not complete or fully reliable objectively, they perceived and experienced them to be the main cause of their decisions and difficulties. And that is the most important object of research.

#### **9.3.3.4. Generalizability Limitations**

Potential limits to the generalization of our findings are connected to the methodological strategies employed (i.e., interviews and sampling), as mentioned, but also and most importantly to the design of this dissertation, a qualitative single case study. Qualitative case studies focus on the description of what is singular (Woodside, 2010) to produce holistic, context-specific accounts of a real-life phenomenon – hence caution must be exercised against

broad generalizations (Yin, 2003). Furthermore, case study research prioritizes understanding of the case rather than generalizing beyond it (Stake, 2008).

Case studies are thus primarily directed at confirming and expanding theory – a theoretical or analytical generalization, rather than statistical generalization (Yin, 2003, 2010). Within this mode of generalization, previously developed theorizations are “used as a template with which to compare the empirical results of the case study” (Yin, 2003, pp. 32-33), according to a pattern-matching procedure (Gilgun, 1994; Yin, 2003). As seen in the integrated discussion above (section 9.2.), most of our findings matched several patterns seen in prior studies, in terms of both theory and empirical results from other cases, thus supporting previous theory. However, some of our findings were sort of unexpected, contradicting (or at least nuancing) previous studies; such findings may well mirror the idiosyncrasies or singularities of our subcases within their specific context, the UOC. Therefore, it may be affirmed that, as regards analytical generalization, this single case study both supports and expands prior theorizations at the same time.

On the one hand, the findings derived from this case study must be seen as situated in a unique educational, pedagogical, cultural, and economic setting – the UOC. As such, the UOC presents many specificities, some of which are indeed unique: its continuous assessment model; its open entry and other institutional policies; faculty roles; and so on. On the other hand, the UOC also presents many characteristics that are equivalent to other open university settings: asynchronous and fully online delivery, student-centered pedagogy, characteristics of the student body (with a vast majority of NTPT learners), and so forth. Therefore, it might be expected that several of the key dropout and persistence issues studied herein – like first-year transition, time challenges, benefits and huge demands of flexible open online learning, student expectations, etc. – are likely similar to the ones faced by learners (and faculty) in other open universities. This is particularly the case for non-traditional adult learners, even in other university settings (blended or on-campus).

Lastly, another limitation is that our empirical studies were conducted prior to the advent of the COVID-19 pandemic and all the drastic and abrupt social, economic, and educational changes that ensued (Sangrà, 2020). As mentioned in our published contributions, dropout and continuation rates and dynamics have probably changed significantly since 2020 (*annus horribilis*), especially with the acceleration of the online turn and, currently, the further popularization of online learning.

#### **9.3.4. Further Research**

The main foci of inquiry, findings, and limitations of the present dissertation may open new avenues for further research. The first one alludes to the last limitation: future studies should address the main themes of this case study attempting to understand what changed in OHE during and after the global pandemic, and how such changes affected student dropout and persistence. Such effort may involve follow-up studies at UOC but also similar investigations in other open universities.

Developing further our main foci of research may also result in useful and interesting investigations. By way of example, the focus on student transition and the first year of studies could be studied more in depth, further characterizing this crucial period, its common challenges and barriers, and how learners cope with it; a strong focus on persistence and how open universities can support it seems a promising theme. The study of time-related challenges for dropout and persistence also presents numerous possibilities of additional inquiry that could enhance knowledge about such an overlooked factor. For instance, promising themes include the nexuses between psychological factors such as (intrinsic and extrinsic) motivation and satisfaction, time management and procrastination, and persistence or withdrawal; the nexus and significance of external factors that affect time poverty and constraints pre-entry (i.e., as the main reason for choosing OHE and its flexibility) and post-entry (as the main reason for withdrawal); internal (institutional) factors connected to time that have not been studied in depth, such as course design and workload, assessment load and difficulty, and so on; and also possibly what and how gender differences influence such themes.

Our main themes of research should also be studied with different actors, cohorts, and within different contexts. Complementing a necessary focus on the student experience, future research may address the perceptions of academic advisors and instructors regarding withdrawal and persistence, or the lived experiences of faculty focusing specifically on student time challenges. Specific student profiles should also be considered as participants – as non-traditional adult learners tend to be the commonest subjects in the OHE literature, other studies may profit from researching the experiences of minority cohorts such as traditional full-time learners, or other cohorts that may be considered most at risk, such as students with low-income or disabilities. Our main themes should also be explored in different contexts – for instance, comparing between specific programs or courses; in graduate studies; in other open universities; and in other educational settings, like hybrid or on-campus universities.

Variations in method may also inform future researches. For instance, exploring qualitatively the student experience with interviews could be complemented by following the students' routine with self-reported diaries, or with periodic online focus groups, in longitudinal studies. The employment of mixed method strategies may also be fruitful, for instance connecting student experience to learning analytics and survival analysis in order to better identify key predictive dropout or persistence factors. Lastly, further research based on the practical recommendations outlined above could further explore and evaluate sustainable and effective time-focused interventions to foster student persistence and attend to their needs and goals.

#### **9.4. References**

- Aggeli, A., & Vassala, P. (2009). Women in distance learning: Second chance or third shift? In U. Bernath, A. Szücs, A. Tait, & M. Vidal (Eds.), *Distance and e-learning in transition: Learning innovation, technology and social challenges* (pp. 457–472). Wiley-ISTE.



- Ashby, A. (2004). Monitoring student retention in the Open University: Definition, measurement, interpretation and action. *Open Learning*, 19(1), 65–77.  
<https://doi.org/10.1080/0268051042000177854>
- Astin, A. (1975) *Preventing students from dropping out*. Jossey-Bass.
- Bawa, P. (2016). Retention in online courses: Exploring issues and solutions - a literature review. *SAGE Open*, 6(1). <https://doi.org/10.1177/2158244015621777>
- Baxter, J. A. (2012). Who am I and what keeps me going? Profiling the distance learning student in higher education. *International Review of Research in Open and Distributed Learning*, 13(4), 107–129. <https://doi.org/10.19173/irrodl.v13i4.1283>
- Beer, C., & Lawson, C. (2017). The problem of student attrition in higher education: An alternative perspective. *Journal of Further and Higher Education*, 41(6), 773–784.  
<https://doi.org/10.1080/0309877X.2016.1177171>
- Berge, Z. L., & Huang, Y. P. (2004). A model for sustainable student retention: A holistic perspective on the student dropout problem with special attention to e-Learning. *DEOSNEWS*, 13(5). <http://doi.org/10.1.1.129.1495>
- Bolliger, D. U., & Martin, F. (2018). Instructor and student perceptions of online student engagement strategies. *Distance Education*, 39(4), 568–583.  
<https://doi.org/10.1080/01587919.2018.1520041>
- Bravo-Agapito, J., Romero, S. J., & Pamplona, S. (2021). Early prediction of undergraduate student's academic performance in completely online learning: A five-year study. *Computers in Human Behavior*, 115, 106595.  
<https://doi.org/10.1016/j.chb.2020.106595>
- Brindley, J. E. (2014). Learner support in online distance education: Essential and evolving. In O. Zawacki-Richter & A. Terry (Eds.), *Online distance education. Towards a research agenda* (pp. 287–310). AU Press.
- Broadbent, J., & Poon, W. L. (2015). Self-regulated learning strategies & academic achievement in online higher education learning environments: A systematic review. *Internet and Higher Education*, 27, 1-13. <https://doi.org/10.1016/j.iheduc.2015.04.007>
- Brown, M., Hughes, H., Keppell, M., Hard, N., & Smith, L. (2015). Stories from students in their first semester of distance learning. *International Review of Research in Open and Distributed Learning*, 16(4). <https://doi.org/10.19173/irrodl.v16i4.1647>
- Bryman, A. (2016). *Social research methods*. Oxford University Press.
- Buck, S. (2016). In their own voices: Study habits of distance education students. *Journal of Library & Information Services in Distance Learning*, 10(3–4), 137–173.  
<https://doi.org/10.1080/1533290X.2016.1206781>
- Bunn, J. (2004). Student persistence in a LIS distance education program. *Australian Academic Research Libraries*, 35(3), 253-269.  
<https://doi.org/10.1080/00048623.2004.10755275>
- Campbell, K., & McAdam, F. (2022). Designing and delivering an online transition programme: A practical application of Zepke and Leach's ten proposals for action. *Widening Participation and Lifelong Learning*, 24(2), 107-125.  
<https://doi.org/10.5456/WPLL.24.2.107>

- Carney-Crompton, S., & Tan, J. (2002). Support systems, psychological functioning, and academic performance of nontraditional female students. *Adult Education Quarterly*, 52(2), 140-154. <https://doi.org/10.1177/0741713602052002005>
- Carnoy, M., Rabling, B. J., Castaño-Muñoz, J., Montoliu, J. M. D., & Sancho-Vinuesa, T. (2012). Does on-line distance higher education pay off for adult learners? The case of the Open University of Catalonia. *Higher Education Quarterly*, 66(3), 248–271. <https://doi.org/10.1111/j.1468-2273.2012.00520.x>
- Cerezo, R., Esteban, M., Sánchez-Santillán, M., & Núñez, J. C. (2017). Procrastinating behavior in computer-based learning environments to predict performance: A case study in Moodle. *Frontiers in Psychology*, 8. <https://doi.org/10.3389/fpsyg.2017.01403>
- Choi, H. J., & Kim, B. U. (2018). Factors affecting adult student dropout rates in the Korean cyber-university degree programs. *The Journal of Continuing Higher Education*, 66(1), 1-12. <https://doi.org/10.1080/07377363.2017.1400357>
- Chow, W. S., & Shi, S. (2014). Investigating students' satisfaction and continuance intention toward e-learning: An extension of the expectation–confirmation model. *Procedia-Social and Behavioral Sciences*, 141, 1145-1149. <https://doi.org/10.1016/j.sbspro.2014.05.193>
- Clay, M. N., Rowland, S., & Packard, A. (2008). Improving undergraduate online retention through gated advisement and redundant communication. *Journal of College Student Retention: Research, Theory & Practice*, 10(1), 93–102. <https://doi.org/10.2190/CS.10.1.g>
- Cochran, J. D., Campbell, S. M., Baker, H. M., & Leeds, E. M. (2014). The role of student characteristics in predicting retention in online courses. *Research in Higher Education*, 55(1), 27-48. <https://doi.org/10.1007/s11162-013-9305-8>
- Conway, K., Wladis, C., & Hachey, A. (2021). Time poverty and parenthood: Who has time for college? *AERA Open*, 7(1), 1–17. <https://doi.org/10.1177/23328584211011608>
- Corkin, D. M., Shirley, L. Y., & Lindt, S. F. (2011). Comparing active delay and procrastination from a self-regulated learning perspective. *Learning and Individual Differences*, 21(5), 602-606. <https://doi.org/10.1016/j.lindif.2011.07.005>
- Craig, H., & Riquelme, X. (2013). Developing an online orientation workshop for first-year students in a distance education context. In C. Gera (Ed.), *Proceedings of the 2012 Annual International Conference of the Association of Tertiary Learning Advisors of Aotearoa/New Zealand (ATLAANZ)* (pp. 51 - 60). ATLAANZ. <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.970.9317&rep=rep1&type=pdf#page=60>
- Creswell, J. W., & Plano-Clark, V. L. (2011). *Designing and conducting mixed methods research* (2nd ed.). Sage Publishers.
- De Palo, V., Monacis, L., & Sinatra, M. (2019). How self-regulated learning strategies interfere between metacognitions and decisional procrastination. *Psychology, Society & Education*, 11(1), 39-52. <https://doi.org/10.25115/psye.v10i1.1932>
- DeAngelo, L. (2014). Programs and practices that retain students from the first to second year: Results from a national study. *New Directions for Institutional Research*, 2013(160), 53-75. <https://doi.org/10.1002/ir.20061>

- Delnoij, L., Dirkx, K., Janssen, J., & Martens, R. L. (2020). Predicting and resolving non-completion in higher (online) education – A literature review. *Educational Research Review*, 29, Article 100313. <https://doi.org/10.1016/j.edurev.2020.100313>
- Deschacht, N., & Goeman, K. (2015). The effect of blended learning on course persistence and performance of adult learners: A difference-in-differences analysis. *Computers and Education*, 87, 83–89. <https://doi.org/10.1016/j.compedu.2015.03.020>
- Dews-Farrar, V. (2018). *Students' reflections and experiences in online learning: A qualitative descriptive inquiry of persistence* [Doctoral dissertation, Grand Canyon University]. ProQuest Dissertations & Theses Global. <https://search.proquest.com/docview/2036952458>
- Doherty, W. (2006). An analysis of multiple factors affecting retention in web-based community college courses. *Internet and Higher Education*, 9, 245–255. <https://doi.org/10.1016/j.iheduc.2006.08.004>
- Eliasquevici, M. K., Seruffo, M. C. da R., & Resque, S. N. F. (2017). Persistence in distance education: A study case using Bayesian network to understand retention. *International Journal of Distance Education Technologies*, 15(4), 61–78. <https://doi.org/10.4018/IJDET.2017100104>
- Farrell, O., & Brunton, J. (2020). A balancing act: A window into online student engagement experiences. *International Journal of Educational Technology in Higher Education*, 17(1), 1-19. <https://doi.org/10.1186/s41239-020-00199-x>
- Gaytan, J. (2015). Comparing faculty and student perceptions regarding factors that affect student retention in online education. *American Journal of Distance Education*, 29(1), 56–66. <https://doi.org/10.1080/08923647.2015.994365>
- Geduld, B. (2016). Exploring differences between self-regulated learning strategies of high and low achievers in open distance learning. *Africa Education Review*, 13(1), 164-181. <https://doi.org/10.1080/18146627.2016.1182739>
- George, A.-J., McEwan, A., & Tarr, J.-A. (2021). Accountability in educational dialogue on attrition rates: Understanding external attrition factors and isolation in online law school. *Australasian Journal of Educational Technology*, 37(1), 111-132. <https://doi.org/10.14742/ajet.6175>
- Gibbs, G., Regan, P., & Simpson, O. (2006). Improving student retention through evidence based proactive systems at the Open University (UK). *Journal of College Student Retention: Research, Theory & Practice*, 8(3), 359-376. <https://doi.org/10.2190/2296-8237-8743-NW7P>
- Gilgun, J. F. (1994). A case for case studies in social work research. *Social Work*, 39(4), 371-380. <https://doi.org/10.1093/sw/39.4.371>
- Grant, R., Olivier, G., Rawlings, C., & Ross, C. (2011). *Enhancing the engagement and success of distance students through targeted support programmes* (Working Papers No. 11-1). Open Polytechnic of New Zealand. <http://hdl.handle.net/11072/1322>
- Grau-Valldosera, J. (2019). *A dropout definition for continuance intention and effective re-enrolment models in online distance learning* [Doctoral dissertation, Universitat Oberta de Catalunya]. UOC Repository. <http://hdl.handle.net/10609/112746>

- Grau-Valldosera, J. & Minguillón, J. (2013). When procrastination leads to dropping out: Analysing students at risk. *eLC Research Paper Series*, 6, 63-74.  
<https://elcrps.uoc.edu/elcrps/index.php/elcrps/article/view/1872.html>
- Greenland, S. J., & Moore, C. (2014). Patterns of student enrolment and attrition in Australian open access online education: A preliminary case study. *Open Praxis*, 6(1), 45–54. <https://doi.org/10.5944/openpraxis.6.1.95>
- Greenland, S. J., & Moore, C. (2022). Large qualitative sample and thematic analysis to redefine student dropout and retention strategy in open online education. *British Journal of Educational Technology*, 53(3), 647-667.  
<https://doi.org/10.1111/bjet.13173>
- Gubrium, J. F., & Holstein, J. A. (2002). *Handbook of interview research: Context and method*. Sage Publishers.
- Gunduz, M., & Karaman, S. (2020). Open education faculty and distance education students' dropout reasons: The case of a Turkish State University. *Open Praxis*, 12(1), 7-25.  
<https://doi.org/10.5944/openpraxis.12.1.970>
- Guri-Rosenblit, S., & Gros, B. (2011). E-Learning: Confusing terminology, research gaps and inherent challenges. *International Journal of E-Learning & Distance Education*, 25(1). <https://www.ijede.ca/index.php/jde/article/view/729>
- Hachey, A., Wladis, C., & Conway, K. (2012). Is the second time the charm? Investigating trends in online re-enrollment, retention and success. *Journal of Educators Online*, 9(1). <https://files.eric.ed.gov/fulltext/EJ972049.pdf>
- Hachey, A., Wladis, C., & Conway, K. (2013). Balancing retention and access in online courses: Restricting enrollment... Is it worth the cost? *Journal of College Student Retention: Research, Theory & Practice*, 15(1), 9–36.  
<https://doi.org/10.2190/CS.15.1.b>
- Hachey, A., Wladis, C., & Conway, K. (2014). Do prior online course outcomes provide more information than G.P.A. alone in predicting subsequent online course grades and retention? An observational study at an urban community college. *Computers & Education*, 72, 59–67. <https://doi.org/10.1016/j.compedu.2013.10.012>
- Hachey, A., Wladis, C., & Conway, K. (2018). What factors influence student decisions to drop online courses? Comparing online and face-to-face sections. *EDEN 2018 Conference Proceedings* (pp. 99-107). <https://doi.org/10.38069/edenconf-2018-ac-0015>
- Hart, C. (2012). Factors associated with student persistence in an online program of study: A review of the literature. *Journal of Interactive Online Learning*, 11(1), 19–42.  
<http://www.ncolr.org/jiol/issues/pdf/11.1.2.pdf>
- Hasan, U. C. A. R., Bozkurt, A., & Zawacki-Richter, O. (2021). Academic procrastination and performance in distance education: A causal-comparative study in an online learning environment. *Turkish Online Journal of Distance Education*, 22(4), 13-23.  
<https://doi.org/10.17718/tojde.1002726>
- Henry, M. (2018). *The online student experience: An exploration of first-year university students' expectations, experiences and outcomes of online education* [Doctoral dissertation, Edith Cowan University]. ECU Repository.  
<https://ro.ecu.edu.au/theses/2059>

- Henry, M. (2020). Online student expectations: A multifaceted, student-centred understanding of online education. *Student Success*, 11(2), 91-98. <https://doi.org/10.5204/ssj.1678>
- Henry, M. (2021). The online student experience: A MAC-ICE thematic structure. *Australasian Journal of Educational Technology*, 37(4), 159–172. <https://doi.org/10.14742/ajet.6619>
- Heyman, E. (2010). Overcoming student retention issues in higher education online programs. *Online Journal of Distance Learning Administration*, 13(4), 1–10.
- Holcomb, J., Jackson, J., Korstange, R., & Hall, J. (2018, May 8). From first steps to next steps: The Online First Year Experience (OFYE), Part 1. *The Evollution*. [https://evollution.com/revenue-streams/distance\\_online\\_learning/from-first-steps-to-next-steps-the-online-first-year-experience-ofye-part-1/](https://evollution.com/revenue-streams/distance_online_learning/from-first-steps-to-next-steps-the-online-first-year-experience-ofye-part-1/)
- Holder, B. (2007). An investigation of hope, academics, environment, and motivation as predictors of persistence in higher education online programs. *Internet and Higher Education*, 10(4), 245–260. <https://doi.org/10.1016/j.iheduc.2007.08.002>
- Horvath, D., Stirling, E., Bevacqua, J., Coldrey, M., Buultjens, P., Buultjens, M., & Larsen, A. (2019). Plan, prepare and connect: How investing in understanding and tracking the evolving needs of online students informs the development of targeted programs for transition and success. *Journal of University Teaching & Learning Practice*, 16(1). <https://doi.org/10.53761/1.16.1.4>
- Houlden, S., & Veletsianos, G. (2019). A posthumanist critique of flexible online learning and its “anytime anyplace” claims. *British Journal of Educational Technology*, 50(3), 1005-1018. <https://doi.org/10.1111/bjet.12779>
- Houlden, S., & Veletsianos, G. (2021). The problem with flexible learning: Neoliberalism, freedom, and learner subjectivities. *Learning, Media and Technology*, 46(2), 144-155. <https://doi.org/10.1080/17439884.2020.1833920>
- Hyllegard, D., Deng, H., & Hunter, C. (2008). Why do students leave online courses? Attrition in community college distance learning courses. *International Journal of Instructional Media*, 35(4), 429-434.
- Ilgaz, H., & Gülbahar, Y. (2015). A snapshot of online learners: E-readiness, e-satisfaction and expectations. *International Review of Research in Open and Distance Learning*, 16(2). <https://doi.org/10.19173/irrodl.v16i2.2117>
- Jelfs, A., & Richardson, J. T. (2013). The use of digital technologies across the adult life span in distance education. *British Journal of Educational Technology*, 44(2), 338-351. <https://doi.org/10.1111/j.1467-8535.2012.01308.x>
- Johnston, V., & Simpson, O. (2006). Retentioneering higher education in the UK: Attitudinal barriers to addressing student retention in universities. *Widening Participation and Lifelong Learning*, 8(3), 28–36.
- Kahu, E. R., Stephens, C., Zepke, N., & Leach, L. (2014). Space and time to engage: Mature-aged distance students learn to fit study into their lives. *International Journal of Lifelong Education*, 33(4), 523–540. <https://doi.org/10.1080/02601370.2014.884177>
- Katiso, A. E. (2015). *Online adult students’ time management skills and their academic achievement and persistence: Technology-based learning and student success*



- [Doctoral dissertation, Keyser University]. ProQuest Dissertations & Theses Global. <https://www.proquest.com/docview/1783598302/>
- Kara, M., Erdoğan, F., Kokoç, M., & Cagiltay, K. (2019). Challenges faced by adult learners in online distance education: A literature review. *Open Praxis, 11*(1), 5-22. <https://doi.org/10.5944/openpraxis.11.1.929>
- Kember, D. (1989). A longitudinal-process model of drop-out from distance education. *The Journal of Higher Education, 60*(3), 278-301. <https://doi.org/10.1080/00221546.1989.11775036>
- Kember, D. (1999) Integrating part-time study with family, work and social obligations. *Studies in Higher Education, 24*(1), 109-124. <https://doi.org/10.1080/03075079912331380178>
- Kember, D., Leung, D., & Prosser, M. (2021). Has the open door become a revolving door? The impact on attrition of moving from elite to mass higher education. *Studies in Higher Education, 46*(2), 258–269. <https://doi.org/10.1080/03075079.2019.1629411>
- Kim, K. R., & Seo, E. H. (2015). The relationship between procrastination and academic performance: A meta-analysis. *Personality and Individual Differences, 82*, 26-33. <https://doi.org/10.1016/j.paid.2015.02.038>
- Kocdar, S., Karadeniz, A., Bozkurt, A., & Buyuk, K. (2018). Measuring self-regulation in self-paced open and distance learning environments. *International Review of Research in Open and Distributed Learning, 19*(1), 25–43. <https://doi.org/10.19173/irrodl.v19i1.3255>
- Korstange, R., Hall, J., Holcomb, J., & Jackson, J. (2020). The online first-year experience: Defining and illustrating a new reality. *Adult Learning, 31*(3), 95-108. <https://doi.org/10.1177/1045159519892680>
- Kuo, Y. C., Walker, A. E., Schroder, K. E. E., & Belland, B. R. (2014). Interaction, internet self-efficacy, and self-regulated learning as predictors of student satisfaction in online education courses. *Internet and Higher Education, 20*, 35-50. <https://doi.org/10.1016/j.iheduc.2013.10.001>
- Lee, K., Choi, H., & Cho, Y. H. (2019). Becoming a competent self: A developmental process of adult distance learning. *Internet and Higher Education, 41*, 25-33. <https://doi.org/10.1016/j.iheduc.2018.12.001>
- Lee, Y., & Choi, J. (2011). A review of online course dropout research: Implications for practice and future research. *Educational Technology Research and Development, 59*, 593–618. <https://doi.org/10.1007/s11423-010-9177-y>
- Lee, Y., Choi, J., & Kim, T. (2013). Discriminating factors between completers of and dropouts from online learning courses. *British Journal of Educational Technology, 44*(2), 328-337. <https://doi.org/10.1111/j.1467-8535.2012.01306.x>
- Li, K., & Wong, B. T. M. (2019). Factors related to student persistence in open universities: Changes over the years. *International Review of Research in Open and Distributed Learning, 20*(4), 132-151. <https://doi.org/10.19173/irrodl.v20i4.4103>
- Li, Q., Zhou, X., Bostian, B., Xu, D. (2021). How can we improve online learning at community colleges? Voices from online instructors and students. *Online Learning, 25*(3), 157-190. <https://doi.org/10.24059/olj.v25i3.2362>

- Martin, F., Wang, C., & Sadaf, A. (2020). Facilitation matters: Instructor perception of helpfulness of facilitation strategies in online courses. *Online Learning*, 24(1), 28–49. <https://doi.org/10.24059/olj.v24i1.1980>
- Martínez-Argüelles, M. J., & Batalla-Busquets, J. M. (2016). Perceived service quality and student loyalty in an online university. *International Review of Research in Open and Distributed Learning*, 17(4), 264-279. <https://doi.org/10.19173/irrodl.v17i4.2518>
- McNeill, B. (2014). Time and the working online learner. In E. Barberà & P. Reimann (Eds.), *Assessment and evaluation of time factors in online teaching and learning* (pp. 24-62). Information Science Reference. <https://doi.org/10.4018/978-1-4666-4651-3.ch00>
- Melgaard, J., Monir, R., Lasrado, L. A., & Fagerstrøm, A. (2022). Academic procrastination and online learning during the COVID-19 pandemic. *Procedia Computer Science*, 196, 117-124. <https://doi.org/10.1016/j.procs.2021.11.080>
- Michinov, N., Brunot, S., Le Bohec, O., Juhel, J., & Delaval, M. (2011). Procrastination, participation, and performance in online learning environments. *Computers & Education*, 56(1), 243–252. <https://doi.org/10.1016/j.compedu.2010.07.025>
- Mittelman, J., Rogaten, J., Long, D., Dalu, M., Gunter, A., Prinsloo, P., & Rienties, B. (2019). Understanding the early adjustment experiences of undergraduate distance education students in South Africa. *International Review of Research in Open and Distributed Learning*, 20(3), 18-36. <https://doi.org/10.19173/irrodl.v20i4.4101>
- Moore, C., & Greenland, S. (2017). Employment-driven online student attrition and the assessment policy divide: An Australian open-access higher education perspective. *Journal of Open, Flexible and Distance Learning*, 21(1), 52–62. <https://doi.org/10.3316/informit.957285975121219>
- Muljana, P. S., & Luo, T. (2019). Factors contributing to student retention in online learning and recommended strategies for improvement: A systematic literature review. *Journal of Information Technology Education: Research*, 18, 19-57. <https://doi.org/10.28945/4182>
- Müller, T. (2008). Persistence of women in online degree-completion programs. *International Review of Research in Open and Distributed Learning*, 9(2), 1-18. <https://doi.org/10.19173/irrodl.v9i2.455>
- Myers, F., Glover, H., & Stephens, C. (2021). Learner interrupted: understanding the stories behind the codes—A qualitative analysis of HE distance-learner withdrawals. *Journal of Further and Higher Education*, 45(8), 1134-1146. <https://doi.org/10.1080/0309877X.2021.1931061>
- Naidu, S. (2014). Foreword. In E. Barberà & P. Reimann (Eds.), *Assessment and evaluation of time factors in online teaching and learning* (pp. xiii-xv). Information Science Reference.
- Naylor, R., Baik, C., & Arkoudis, S. (2017). Identifying attrition risk based on the first year experience. *Higher Education Research & Development*, 37(2), 328-342. <https://doi.org/10.1080/07294360.2017.1370438>
- Netanda, R. S., Mamabolo, J., & Themane, M. (2019). Do or die: Student support interventions for the survival of distance education institutions in a competitive higher education system. *Studies in Higher Education*, 44(2), 397–414. <https://doi.org/10.1080/03075079.2017.1378632>

- Nichols, M. (2010). Student perceptions of support services and the influence of targeted interventions on retention in distance education. *Distance Education*, 31(1), 93–113. <https://doi.org/10.1080/01587911003725048>
- Nikolova, I., & Collis, B. (1998). Flexible learning and design of instruction. *British Journal of Educational Technology*, 29(1), 59–72. <https://doi.org/10.1111/1467-8535.00046>
- Nistor, N., & Neubauer, K. (2010). From participation to dropout: Quantitative participation patterns in online university courses. *Computers & Education*, 55(2), 663–672. <https://doi.org/10.1016/j.compedu.2010.02.026>
- O’Shea, S. (2022). Negotiating embodied aspirations: Exploring the emotional labour of higher education persistence for female caregivers. In G. Hook, M. P. Moreau, & R. Brooks, (Eds.), *Student carers in higher education: Navigating, resisting, and re-inventing academic cultures* (pp. 28–45). Routledge. <https://doi.org/10.4324/9781003177104-3>
- Papi, C., Sauv e, L., Desjardins, G., & G erin-Lajoie, S. (2022). De la multiplicit e des facteurs   prendre en compte pour mieux comprendre l’abandon en formation   distance. *Distances et m diations des savoirs*, 37. <https://doi.org/10.4000/dms.6904>
- Park, J. H., & Choi, H. J. (2009). Factors influencing adult learners' decision to drop out or persist in online learning. *Journal of Educational Technology & Society*, 12(4), 207–217. <https://doi.org/10.2307/jeductechsoci.12.4.207>
- Petersen, N. J. (2020). Strategies for efficient, meaningful, and inclusive online learning environments: It's about time. In L. Kyei-Blankson, E. Ntuli, & J. Blankson (Eds.), *Handbook of research on creating meaningful experiences in online courses* (pp. 187–226). IGI Global. <https://doi.org/10.4018/978-1-7998-0115-3.ch013>
- Pilkington, C. (2018). A playful approach to fostering motivation in a distance education computer programming course: Behaviour change and student perceptions. *International Review of Research in Open and Distributed Learning*, 19(3), 282–298. <https://doi.org/10.19173/irrodl.v19i3.3664>
- Pinchbeck, J., & Heaney, C. (2017). Case report: The impact of a resubmission intervention on level 1 distance learning students. *Open Learning: The Journal of Open, Distance and e-Learning*, 32(3), 236–242. <https://doi.org/10.1080/02680513.2017.1348290>
- Raju, D., & Schumacker, R. (2015). Exploring student characteristics of retention that lead to graduation in higher education using data mining models. *Journal of College Student Retention*, 16(4), 563–591. <https://doi.org/10.2190/CS.16.4.e>
- Rivera-Vargas, P., Anderson, T. & Cano, C. A. (2021). Exploring students’ learning experience in online education: analysis and improvement proposals based on the case of a Spanish open learning university. *Education Technology Research and Development*, 69, 3367–3389. <https://doi.org/10.1007/s11423-021-10045-0>
- Romano, J., Wallace, T., Wallace, H., Helmick, I., Carey, L., & Adkins, L. (2005). Study procrastination, achievement, and academic motivation in web-based and blended distance learning. *Internet and Higher Education*, 8(4), 299–305. <https://doi.org/10.1016/j.iheduc.2005.09.003>
- Romero, M. (2011). Distance learners’ work life learning balance. *Journal of Instructional Technology and Distance Learning*, 8(5), 43–48.



- Romero, M., & Barberà, E. (2011). Quality of learners' time and learning performance beyond quantitative time-on-task. *International Review of Research in Open and Distributed Learning*, 12(5), 125-137. <https://doi.org/10.19173/irrodl.v12i5.999>
- Romero, M., & Gentil, C. (2014). Characterizing online learners' time regulation: Comparative case studies of virtual campuses in France and Spain. In E. Barberà & P. Reimann (Eds.), *Assessment and evaluation of time factors in online teaching and learning* (pp. 91-110). Information Science Reference. <https://doi.org/10.4018/978-1-5225-5472-1.ch077>
- Rotar, O. (2022). Online student support: A framework for embedding support interventions into the online learning cycle. *Research and Practice in Technology Enhanced Learning*, 17, Article 2. <https://doi.org/10.1186/s41039-021-00178-4>
- Samra, R., Waterhouse, P., & Lucassen, M. (2021). Combining and managing work-family-study roles and perceptions of institutional support. *Distance Education*, 42(1), 88-105. <https://doi.org/10.1080/01587919.2020.1869530>
- Sánchez-Gelabert, A. (2021). Non-traditional students, university trajectories, and higher education institutions: A comparative analysis of face-to-face and online universities. *Studia Paedagogica*, 25(4), 51-72. <http://doi.org/10.5817/SP2020-4-3>
- Sánchez-Gelabert, A. (2022). *Condicions socials i de vida dels estudiants, trajectòries acadèmiques i modalitat d'universitat: Una aproximació a l'abandonament universitari* [Doctoral dissertation, Universitat Autònoma de Barcelona]. UAB Repository. <https://ddd.uab.cat/record/265580>
- Sangrà, A. (2020). Enseñar y aprender en línea: Superando la distancia social. In A. Sangrà (Ed.), *Decálogo para la mejora de la docencia online: Propuestas para educar en contextos presenciales discontinuos* (pp. 27-44). Editorial UOC.
- Sangrà, A., Vlachopoulos, D., & Cabrera, N. (2012). Building an inclusive definition of e-Learning: An approach to the conceptual framework. *International Review of Research in Open and Distance Learning*, 13(2), 145–159. <https://doi.org/10.19173/irrodl.v13i2.1161>
- Selwyn, N. (2011). 'Finding an appropriate fit for me': Examining the (in)flexibilities of international distance learning. *International Journal of Lifelong Education*, 30(3), 367-383. <https://doi.org/10.1080/02601370.2011.570873>
- Shah, M., & Cheng, M. (2019). Exploring factors impacting student engagement in open access courses. *Open Learning*, 34, 187–202. <https://doi.org/10.1080/02680513.2018.1508337>
- Sheail, P. (2018). Temporal flexibility in the digital university: Full-time, part-time, flexitime. *Distance Education*, 39(4), 462-479. <https://doi.org/10.1080/01587919.2018.1520039>
- Simpson, O. (2003). *Student retention in online, open and distance learning*. Routledge. <https://doi.org/10.4324/9780203416563>
- Simpson, O. (2004a). *Supporting students for success in online and distance education*. Routledge. <https://doi.org/10.4324/9780203095737>
- Simpson, O. (2004b). The impact on retention of interventions to support distance learning students. *Open Learning: The Journal of Open, Distance and e-Learning*, 19(1), 79–95. <https://doi.org/10.1080/0268051042000177863>

- Simpson, O. (2009). Retention and course choice in distance learning. In U. Bernath, A. Szücs, A. Tait, & M. Vidal (Eds.), *Distance and e-learning in transition: Learning innovation, technology and social challenges* (pp. 473-484). Wiley-ISTE.
- Simpson, O. (2013). Student retention in distance education: Are we failing our students? *Open Learning: The Journal of Open, Distance and e-Learning*, 28(2), 105–119. <https://doi.org/10.1080/02680513.2013.847363>
- Simpson, O. (2021). Student success: Administering distance education for student success. In L. Cifuentes (Ed.), *A guide to administering distance learning* (pp. 300-327). Brill. [https://doi.org/10.1163/9789004471382\\_013](https://doi.org/10.1163/9789004471382_013)
- Snyder, J. (2014). *Student perceptions of online learning and persistence for course completion* (Publication No. 3613731) [Doctoral dissertation, Walden University]. ProQuest Dissertations & Theses Global. <http://search.proquest.com/docview/1512414837>
- Stake, R. E. (2008). Qualitative case studies. In N. K. Denzin & Y. S. Lincoln (Eds.), *Strategies of qualitative inquiry* (pp. 119–149). Sage Publications.
- Stephen, J., Rockinson-Szapkiw, A., & Dubay, C. (2020). Persistence model of non-traditional online learners: Self-efficacy, self-regulation, and self-direction. *American Journal of Distance Education*, 34(4), 306-321. <https://doi.org/10.1080/08923647.2020.1745619>
- Stone, C., & O’Shea, S. (2019a). Older, online and first: Recommendations for retention and success. *Australasian Journal of Educational Technology*, 35(1), 57–69. <https://doi.org/10.14742/ajet.3913>
- Stone, C., & O’Shea, S. (2019b). My children... think it’s cool that Mum is a uni student: Women with caring responsibilities studying online. *Australasian Journal of Educational Technology*, 35(6), 97-110. <https://doi.org/10.14742/ajet.5504>
- Su, J., & Waugh, M. L. (2018). Online student persistence or attrition: Observations related to expectations, preferences, and outcomes. *Journal of Interactive Online Learning*, 16(1), 63-79. <http://www.ncolr.org/jiol/issues/pdf/16.1.4.pdf>
- Svartdal, F., Dahl, T. I., Gamst-Klaussen, T., Koppenborg, M., & Klingsieck, K. B. (2020). How study environments foster academic procrastination: Overview and recommendations. *Frontiers in Psychology*, 11, Article No. 540910. <https://doi.org/10.3389/fpsyg.2020.540910>
- Tabuenca, B., Greller, W., & Verpoorten, D. (2022). Mind the gap: Smoothing the transition to higher education fostering time management skills. *Universal Access in the Information Society*, 21, 367–379. <https://doi.org/10.1007/s10209-021-00833-z>
- Tait, A. (2014). From place to virtual space: Reconfiguring student support for distance and e-learning in the digital age. *Open Praxis*, 6(1), 5-16. <https://doi.org/10.5944/openpraxis.6.1.102>
- Tait, A. (2015). *Student success in open, distance and e-learning*. International Council for Open and Distance Learning. <https://www.glokalde.com/pdf/issues/3/republished-2.pdf>
- Tait, A. (2018). Education for development: From distance to open education. *Journal of Learning for Development*, 5(2), 101-115. <https://www.learntechlib.org/p/189225/>

- Theobald, M., & Bellhäuser, H. (2022). How am I going and where to next? Elaborated online feedback improves university students' self-regulated learning and performance. *Internet and Higher Education*, 55, Article 100872. <https://doi.org/10.1016/j.iheduc.2022.100872>
- Thorpe, M. (2006). Perceptions about time and learning: Researching the student experience. *Distances et Savoirs*, 4(4), 497–511. <https://doi.org/10.3166/ds.4.497-511>
- Thorpe, M. (2009). Perceptions about time and learning: Researching the student experience. In U. Bernath, A. Szücs, A. Tait, & M. Vidal (Eds.), *Distance and e-learning in transition: Learning innovation, technology and social challenges* (pp. 457–472). Wiley-ISTE.
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). University of Chicago Press.
- Tinto, V. (2015). Through the eyes of students. *Journal of College Student Retention*, 19(3), 254–269. <http://doi.org/10.1177/1521025115621917>
- Tinto, V. (2017). Reflections on student persistence. *Student Success*, 8(2), 1-8. <https://doi.org/10.5204/ssj.v8i2.376>
- Tinto, V., & Pusser, B. (2006). *Moving from theory to action: Building a model of institutional action for student success*. National Postsecondary Education Cooperative. [https://www.researchgate.net/publication/251378009\\_Moving\\_From\\_Theory\\_to\\_Action\\_Building\\_a\\_Model\\_of\\_Institutional\\_Action\\_for\\_Student\\_Success](https://www.researchgate.net/publication/251378009_Moving_From_Theory_to_Action_Building_a_Model_of_Institutional_Action_for_Student_Success)
- Tresman, S. (2002). Towards a strategy for improved student retention in programmes of open, distance education: A case study from the Open University UK. *International Review of Research in Open and Distributed Learning*, 3(1). <https://doi.org/10.19173/irrodl.v3i1.75>
- Tyler-Smith, K. (2006). Early attrition among first time eLearners: A review of factors that contribute to drop-out, withdrawal and non-completion rates of adult learners undertaking eLearning programmes. *MERLOT Journal of Online learning and Teaching*, 2(2), 73-85. [https://jolt.merlot.org/documents/Vol2\\_No2\\_TylerSmith\\_000.pdf](https://jolt.merlot.org/documents/Vol2_No2_TylerSmith_000.pdf)
- Veletsianos, G., & Houlden, S. (2020). Radical flexibility and relationality as responses to education in times of crisis. *Postdigital Science and Education*, 2(3), 849-862. <https://doi.org/10.1007/s42438-020-00196-3>
- Veletsianos, G., Kimmons, R., Larsen, R., & Rogers, J. (2021). Temporal flexibility, gender, and online learning completion. *Distance Education*, 42(1), 22-36. <https://doi.org/10.1080/01587919.2020.1869523>
- Waterhouse, P., Samra, R., & Lucassen, M. (2020). Mental distress and its relationship to distance education students' work and family roles. *Distance Education*, 41(4), 540-558. <https://doi.org/10.1080/01587919.2020.1821606>
- Waterhouse, P., Samra, R., & Lucassen, M. (2022). Distance education students' satisfaction: Do work and family roles matter?. *Distance Education*, 43(1), 56-77. <https://doi.org/10.1080/01587919.2021.2020622>

- Whitelock, D. (2011). Activating assessment for learning: Are we on the way with Web 2.0? In M. Lee & C. McLoughlin (Eds.), *Web 2.0-based E-Learning: Applying social informatics for tertiary teaching* (pp. 319–342). IGI Global.
- Whitelock, D., Thorpe, M., & Galley, R. (2015). Student workload: A case study of its significance, evaluation and management at the Open University. *Distance Education*, 36(2), 161-176. <https://doi.org/10.1080/01587919.2015.1055059>
- Wladis, C., Conway, K., & Hachey, A. (2015). The online STEM classroom—Who succeeds? An exploration of the impact of ethnicity, gender, and non-traditional student characteristics in the community college context. *Community College Review*, 43(2), 142–164. <https://doi.org/10.1177/0091552115571729>
- Wladis, C., & Hachey, A. (2017). Using course-level factors as predictors of online course outcomes: A multilevel analysis at a U.S. urban community college. *Studies in Higher Education*, 42(1), 184–200. <https://doi.org/10.1080/03075079.2015.1045478>
- Wladis, C., Hachey, A., & Conway, K. (2018). No time for college? An investigation of time poverty and parenthood. *Journal of Higher Education*, 89(6), 807-831. <https://doi.org/10.1080/00221546.2018.1442983>
- Wladis, C., Hachey, A., & Conway, K. (2020). External stressors and time poverty among online students: An exploratory study. In S. Softic, D. Andone, & A. Szucs (Eds.), *EDEN Proceedings, 2020 Annual Conference* (pp. 172-183). European Distance and E-Learning Network. <https://doi.org/10.38069/edenconf-2020-ac0015>
- Wladis, C., Wladis, K., & Hachey, A. (2014). The role of enrollment choice in online education: Course selection rationale and course difficulty as factors affecting retention. *Online Learning*, 18(3). <http://doi.org/10.24059/olj.v18i3.391>
- Woodley, A. (2004). Conceptualizing student dropout in part-time distance education: Pathologizing the normal? *Open Learning: The Journal of Open, Distance and e-Learning*, 19(1), 47–63. <https://doi.org/10.1080/0268051042000177845>
- Woodley, A., & Parlett, M. (1983). Student drop-out. *Teaching at a Distance*, 24, 2–23.
- Woodley, A., & Simpson, O. (2014). Student dropout: The elephant in the room. In O. Zawacki-Richter & T. Anderson (Eds.), *Online distance education: Towards a research agenda* (pp. 459–483). Athabasca University Press.
- Woodside, A. G. (2010). *Case study research: Theory, methods, practice*. Emerald.
- Wozniak, H. (2016). *Get ready, get learning: Investigating university students' transition to online distance learning in the health sciences* [Doctoral dissertation, Charles Darwin University (Australia)]. ProQuest Dissertations Publishing. <https://doi.org/10.25913/5ea303a06f5eb>
- Wozniak, H., & McEldowney, R. (2015). Layers of transition: The lived experiences of online distance learners. In T. Thomas, E. Levin, P. Dawson, K. Fraser, & R. Hadgraft (Eds.), *Research and development in higher education: Learning for life and work in a complex world* (Vol. 38, pp. 505–515). Higher Education Research and Development Society of Australia. <https://www.herdsa.org.au/publications/conference-proceedings/research-and-development-higher-education-learning-life-and-42>

- Yang, D., Baldwin, S., & Snelson, C. (2017). Persistence factors revealed: Students' reflections on completing a fully online program. *Distance Education*, 38(1), 23–36. <https://doi.org/10.1080/01587919.2017.1299561>
- Yin, R. K. (2003). *Case study research: Design and methods* (3rd. ed.). Sage Publications.
- Yin, R. K. (2010). Analytic generalization. In A. J. Mills, G. Durepos, & E. Wiebe (Eds.), *Encyclopedia of case study research* (pp. 21-23). Sage Publications.

# APPENDIX 1

## A LITERATURE REVIEW ON THE DEFINITIONS OF DROPOUT IN ONLINE HIGHER EDUCATION\*

### Abstract

Online higher education continues to grow, yet its high dropout rates remain a pressing and complex problem. However, there are many different definitions of dropout (and related concepts: attrition, persistence, and retention) in the literature, usually related to a temporal conception, and the issue is controversial. Inconsistent terminology is problematic because the ways dropout is defined determine how it is measured, tackled, and researched. This contribution seeks to remedy such issue by summarizing a scoping review of the recent literature on the theme, focusing on the key issue of online higher education students' dropout conceptualization and definition. A scoping review between 2014 and 2018 yielded 138 articles and dissertations. Findings reveal a complex yet disorganized field, lacking standard definitions. Some concepts (e.g., completion) were defined clearly more often, while others (e.g., attrition and dropout) varied wildly; few papers employed previous definitions from the body of literature. Future research should strive to achieve greater consistency in terminology, so as to compare findings and produce reliable knowledge for intervention in online higher education institutions.

**Keywords:** Dropout, dropout factors, retention, literature review, scoping review, online, distance education, higher education

### A1.1. Background: Conceptualizing Dropout Research in Online Higher Education

#### A1.1.1. The Issue with Definitions

Dropout can be broadly defined as the student's failure to enroll for a definite number of successive semesters. However, there are many different definitions of dropout in the literature, usually related to a temporal conception, and the issue is controversial (Grau-Valldosera & Minguillón, 2014). A number of related concepts are often employed, some as synonymous – attrition, withdrawal, non-completion– and others as antonymous -retention, persistence, continuance, completion, and success. However, they largely suffer from the same imprecision. Inconsistent terminology is problematic because the ways dropout is defined determine how it is measured, tackled, and researched (Ashby, 2004). The main issue regards who to count as having dropped out (Nichols, 2010); a single course definition is prevalent, i.e., dropping out

---

\* Xavier, M., & Meneses, J. (2020). A literature review on the definitions of dropout in online higher education. In S. Softic, D. Andone, & A. Szucs (Eds.), *European Distance and E-Learning Network (EDEN) Proceedings: Human and Artificial Intelligence for the Society of the Future* (pp. 73-80). <http://doi.org/10.38069/edenconf-2020-ac0004>

of a specific course, yet other authors have proposed a program perspective (Lehan et al., 2018), i.e., not graduating in a program. However, the time frame is also problematic, as students may take a break (of several semesters) but eventually return and re-enroll later in their academic trajectories.

### **A1.1.2. Prevalence and Importance of Dropout**

Over the last 20 years, research on dropout in online higher education (OHE) has gained importance, as official online programs have shown significantly higher student dropout rates than face-to-face (f2f) programs (Grau-Valldosera et al., 2018), which makes dropout rates one of the greatest challenges faced by OHE educators and administrators (Lee & Choi, 2011). Hence, in-depth understanding of the phenomenon, early identification of at-risk students, and efficient prevention measures have become crucial. Nonetheless, there appears to be a tension between conceptions and studies of dropout in traditional, f2f settings (the origin of dropout models), and in online settings. Hence, it is important to review definitions employed in recent years for OHE, and their friction with older f2f models. It is about ordering a field that is clearly ample and somewhat disorganized, in order to better understand it and the phenomena it studies.

### **A1.1.3. A Scoping Review of Dropout in Online Higher Education**

This article summarizes part of a scoping review of dropout in OHE (Xavier & Meneses, 2020), focusing on dropout (and related concepts) definitions. Scoping reviews can be defined as a method of research synthesis that seeks to map the relevant literature on a specific topic or research area, identifying and clarifying key concepts (Peters et al., 2017). The scoping method was chosen because it is best designed for cases in which the body of literature exhibits a large, complex, and heterogeneous nature (Khalil et al., 2016), and when its key concepts are less well defined in advance (Gough & Thomas, 2016).

## **A1.2. Method**

The scoping review followed the framework proposed by Arksey and O'Malley (2005). Although the complete review aimed at answering a broad research question, here we will focus on a specific question: *How was dropout (and related concepts) defined in recent OHE dropout research?* Studies were searched and selected from two databases (Web of Science and Education Database); hand-searching of eight key journals; Google Scholar; and key papers reference lists, using key search terms related to dropout and OHE. Studies were eligible for inclusion if they were in English and published between 2014 and 2018, having academic dropout or related subjects (persistence, completion, etc.) in OHE as main research subject, and being a scientific publication with full text available. This search generated 3900 records. Applying the inclusion criteria, a total of 138 publications were included in the review (see Xavier & Meneses, 2020, for the complete list of references). To chart the data, each paper was coded in terms of dropout (or related) concepts or definitions employed.



## A1.3. Results

### A1.3.1. Definitions and concepts

Table 1 summarizes the definitions and concepts employed in the dropout literature (see Xavier & Meneses, 2020, for the spreadsheet with the detailed chartered studies, and the definitions employed in each paper). The most salient fact is that the majority of papers did not provide a clear definition of the central concepts employed. In fact, 78% of the studies that used the concept of withdrawal, 70% of the ones that employed dropout, and 63% of those using retention did not define such concepts, taking them for granted. Other concepts such as persistence and completion were defined more often (65% and 56% of the studies that employed them, respectively).

Table 1: Concepts and definitions

Concepts and definitions	n	%	Shared characteristics/Selected references
<b>Attrition</b>			
From author(s)	9	18.37	<ul style="list-style-type: none"> <li>Attrition as failing (depending on grades) or withdrawing from course or program was prevalent (Dews-Farrar, 2018; Glazier, 2016; Zimmerman &amp; Johnson, 2017).</li> <li>Three papers defined attrition as leaving the university (Figueira, 2015; Hart, 2014; York, 2014).</li> <li>Most papers employed other concepts (dropout, completion, withdrawal, retention) to define attrition (Figueira, 2015; Knestrick et al., 2016; Nadasen, 2016).</li> </ul>
From literature	15	30.61	<ul style="list-style-type: none"> <li>Most common definition was failing to complete, or not continuing, course or program (Burgess, 2017; Huggins, 2017; Lucey, 2018; Wright, 2015).</li> <li>Two papers defined attrition as leaving the institution (Moore, D., 2014; Nuesell, 2016).</li> <li>Only one paper mentioned a specific timeframe (Hannah, 2017).</li> <li>Two papers (Strebe, 2016; Struble, 2014) defined attrition as a synonym of dropout, and one as the antonym of retention (Johnson, C., 2015).</li> <li>Martinez (2003) was the most employed author for definitions (Lucey, 2018; Russo-Gleicher, 2014; Wright, 2015).</li> </ul>
Not Provided	25	51.02	<ul style="list-style-type: none"> <li>Many papers simply did not provide any definition (Ali &amp; Smith, 2015; Bawa, 2016).</li> <li>Two papers did not provide a definition but employed the concept specifically in relation to courses (Cochran et al., 2014; Greenland &amp; Moore, 2014).</li> </ul>
<b>Completion</b>			
From author(s)	13	48.15	<ul style="list-style-type: none"> <li>6 articles: completing and obtaining a degree in a time period (usually 6 years) (Allen, 2017; Brock, 2014; Shea &amp; Bidjerano, 2018).</li> <li>4 articles: completing a course, which depends on grades (Nadasen, 2016; Strebe, 2016).</li> </ul>



From literature	2	7.41	<ul style="list-style-type: none"> <li>The first referred to course completion (pass), the second to graduation in a program (Heald, 2018; Moore, D., 2014).</li> </ul>
Not Provided	12	44.44	<ul style="list-style-type: none"> <li>Three papers did not provide a definition but employed the concept specifically in relation to courses (Gardner, 2016; Murphy &amp; Stewart, 2017).</li> <li>And two papers specifically in relation to a degree (Rashid et al., 2015; Sweeney, 2017).</li> </ul>
<b>Dropout</b>			
From author(s)	11	22.45	<ul style="list-style-type: none"> <li>Definitions varied wildly; some focused on dropout from an institution or program in a time period (2-4 semesters) (Brock, 2014; Gregori et al., 2018).</li> <li>Others focused on dropout from course(s), depending on sitting exams (Deschascht &amp; Goeman, 2015; Tan &amp; Shao, 2015).</li> </ul>
From literature	4	8.16	<ul style="list-style-type: none"> <li>Definitions varied wildly; some focused on graduating or not, voluntarily or involuntarily; others on withdrawing from courses, depending also on grades (Franko, 2015; Gangaram, 2015; Grau-Valldosera &amp; Minguillon, 2014; Seabra et al., 2018).</li> </ul>
Not Provided	34	69.39	<ul style="list-style-type: none"> <li>Three papers did not provide a definition but employed the concept specifically in relation to courses (Burgos et al., 2018; Croxton, 2014; Mahmodi &amp; Ebrahimzade, 2015).</li> <li>Others mentioned course or program (Yang et al., 2017; Yukselturk et al., 2014), or course or institution (Sanz et al., 2018; Woodley &amp; Simpson, 2014).</li> </ul>
<b>Persistence</b>			
From author(s)	16	33.33	<ul style="list-style-type: none"> <li>Continuous enrolment (in the next course or semester) was the most common definition (Allen, 2017; Bettinger et al., 2017).</li> <li>Some employed a time frame (enrolment for 3-4 consecutive semesters) (Arifin, 2016; Dexter, 2015).</li> </ul>
From literature	15	31.25	<ul style="list-style-type: none"> <li>Martinez (2003) was the most employed author (to remain enrolled or complete a course or program) (Budash, 2015; Nuesell, 2016; Verdinelli &amp; Kutner, 2015).</li> <li>Most studies defined it as completion of degree or program (Duckett, 2014; Johnson, 2015; Struble, 2014).</li> <li>Intention to continue, or continuation itself in HE (Tinto) (Adams, 2017; Mitchell, 2015).</li> <li>Antonym of dropout, indicator of performance (Franko, 2015).</li> </ul>
Not Provided	17	35.42	(Banks, 2017; Bornschlegl & Cashman, 2018; Choi & Kim, 2017).
<b>Retention</b>			
From author(s)	13	18.57	<ul style="list-style-type: none"> <li>Continuous enrolment (in the next year) was the most common definition (Chiyaka et al., 2016, mentioned "in the same institution") (Allen, 2017; Chiyaka et al., 2016; James et al., 2016; Macy, 2015).</li> </ul>

			<ul style="list-style-type: none"> <li>• Graduation or completion of a program/degree (Banks, 2017; Gazza &amp; Hunker, 2014; Knestruck et al., 2016; Wright, 2015).</li> <li>• Completion of course and/or degree; opposite of attrition (Dews-Farrar, 2018; Nadasen, 2016).</li> <li>• Intention or attempt to complete courses (González, 2015; Harris, 2015).</li> </ul>
From literature	13	18.57	<ul style="list-style-type: none"> <li>• Student progress or continuous enrolment from the institution perspective (Adams, 2017; Johnson, C., 2015; Strebe, 2015; Vadell, 2016).</li> <li>• Ability of an institution to retain a student through graduation (Duckett, 2014; Giannaris, 2016; Moore, D., 2014). Hannah (2017) mentions a time-period.</li> <li>• Number of online students who complete online courses (Heald, 2018; Marshall, 2017; Struble, 2014).</li> </ul>
Not Provided	44	62.86	(Armstrong et al., 2018; Sorensen & Donovan, 2017; Stone, 2017).
<b>Success</b>			
From author(s)	7	33.33	<ul style="list-style-type: none"> <li>• Course grades or grade point average (GPA) (Dexter, 2015; Gardner, 2016; Harris, 2015; Levy &amp; Ramim, 2017).</li> <li>• Course grades and retention rates (Glazier, 2016).</li> <li>• Different definitions - at the institutional level (retention and graduation rates), program level (retention and program completion), and course level (completion of courses) (Nadasen, 2016).</li> </ul>
From literature	2	9.52	<ul style="list-style-type: none"> <li>• Students who display persistence throughout courses, measured by grades (Marshall, 2017; Wright, 2015).</li> </ul>
Not Provided	12	57.14	(Andrews & Tynan, 2014; Banks, 2017; Winger, 2016).
<b>Withdrawal</b>			
From author(s)	2	22.22	<ul style="list-style-type: none"> <li>• Voluntary or involuntary removal from a course prior to completion (Lim, 2016; McClelland, 2014).</li> </ul>
From literature	0	0	
Not Provided	7	77.78	<ul style="list-style-type: none"> <li>• Most papers did not provide a definition but two employed the concept in relation to courses (Greenland &amp; Moore, 2014; Murphy &amp; Stewart, 2017).</li> </ul>

Completion seems to be a clearer, less controversial concept in the literature, usually alluding to completion of course or program. However, it must be emphasized that very few authors employed completion definitions from the body of literature. Many papers defined concepts such as attrition, persistence, and success employing other related concepts, sometimes without defining the latter (e.g., retention and persistence as completion; success as retention; etc.). Definitions of dropout varied wildly but centered upon dropping out from either institution, program, or course, during a certain time period, and depending on grades or sitting exams. Perhaps the concept of withdrawal may summarize a general trend in the field. Although one fifth of the articles that centered on studying such concept provided definitions, and they were based on another concept (i.e., completion), the vast majority of papers did not present a clear definition. Comparatively few papers drew definitions from previous literature (with the

exception of papers that employed attrition, persistence, and retention, where half of the definitions came from other authors), which seems to point that there is not still a theoretical continuance in the field.

#### **A1.4. Conclusion: A Complex Phenomenon without a Clear Definition**

Dropout-related phenomena are complex and thus require clear definitions. However, the field is almost chaotic in that regard. The vast majority of the papers studied did not provide any definition; when they did, usually they did not employ previous definitions available in the literature. Also, some definitions are narrow, others very broad and vague, and most are used interchangeably. Another problem is that most definitions are designed as institutional indicators (e.g., retention as completion of a course or a program) that do not take into account students' desires and expectations. In OHE, many students do not plan to graduate or even complete their courses (Woodley & Simpson, 2014). Definitions are still “shaped by theories that view student retention through the lens of institutional action and ask what institutions can do to retain their students” (Tinto, 2015, p. 254). Unsurprisingly, they usually do not consider factors such as transfer to another institution (Ashby, 2004), which imply that students continue their HE studies yet are regarded as dropouts. Thus, stakeholders and policy makers have little accurate and reliable information about dropouts (Grau-Valdossera & Minguillón, 2014), which affects monitoring and comparing interventions in practice. Hence, results are often not comparable across courses, programs, institutions, and countries.

Inconsistent terminology is crucial, for dropout definitions determine how it is measured, confronted, and researched (Ashby, 2004). In other words, the whole field depends, first and foremost, on the definitions it employs. Thus, developing common standard definitions and data collection procedures would benefit the field and impact policy and retention strategies. Tinto (1975) stressed that the field suffered from “inadequate attention given to questions of definition”, requiring the development of “theoretical models that seek to explain, not simply to describe, the processes” (p. 89) that lead to dropout. Given our results, it seems the field has changed little since Tinto (1982), still studying f2f settings, warned that “dropout research is in a state of disarray, in large measure because we have been unable to agree about what behaviors constitute an appropriate definition of dropout” (p. 3).

This issue constitutes a major challenge for OHE dropout studies: in theoretical-empirical terms, they need generalizable, ample, and precise definitions; but they also demand context-dependent, flexible definitions that allow for addressing situated interventions. Given the variability of contexts (different university systems, countries and OHE models), it seems this impasse is central to the field. The only answer to that question in our sample was given by Grau-Valdossera and Minguillón (2014), who formulated a program- and context-dependent definition based on learning analytics.

Therefore, many efforts are still needed to develop the field, and it seems the most crucial one should focus on establishing common and shared definitions. Its main research gaps include theorization and precise definitions, which would impact measurement, new models, and the

need for stronger evidence on the effectiveness of strategies and early interventions (which is only achievable through comparison between different interventions in different contexts). However, possibly the field will remain as varied and complex as the phenomena it studies: after all, “[t]here is no simple formula that ensures student persistence” (Rovai, 2003, p.12), nor its understanding or definition.

### **Acknowledgment**

With the support of a doctoral grant from the Universitat Oberta de Catalunya (UOC).

### **A1.5. References**

- Arksey, H. & O'Malley, L. (2005). Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology*, 8(1),19-32.  
doi:10.1080/1364557032000119616
- Ashby, A. (2004). Monitoring student retention in the Open University: Definition, measurement, interpretation and action. *Open Learning*, 19(1), 65–77.  
doi:10.1080/0268051042000177854
- Gough, D., & Thomas, J. (2016). Commonality and diversity in reviews. In D. Gough, S. Oliver, & J. Thomas (Eds.), *An introduction to systematic reviews* (1st ed.) (pp. 35-65). SAGE.
- Grau-Valldosera, J., & Minguillón, J. (2014). Rethinking dropout in online higher education: The case of the Universitat Oberta de Catalunya. *International Review of Research in Open and Distance Learning*, 15(1). doi:10.19173/irrodl.v15i1.1628
- Grau-Valldosera, J., Minguillón, J., & Blasco-Moreno, A. (2018). Returning after taking a break in online distance higher education: from intention to effective re-enrollment. *Interactive Learning Environments*, 27(3), 307–323.  
doi:10.1080/10494820.2018.1470986
- Khalil, H., Peters, M., Godfrey, C.M., McInerney, P., Soares, C.B., & Parker, D. (2016). An evidence-based approach to scoping reviews. *Worldviews on Evidence-Based Nursing*, 3(2), 118-123. doi:10.1111/wvn.12144
- Lee, Y., & Choi, J. (2011). A review of online course dropout research: Implications for practice and future research. *Educational Technology Research and Development*, 59(5), 593–618. doi:10.1007/s11423-010-9177-y
- Lehan, T. J., Hussey, H. D., & Shriner, M. (2018). The influence of academic coaching on persistence in online graduate students. *Mentoring & Tutoring: Partnership in Learning*, 26(3), 289–304. doi:10.1080/13611267.2018.1511949
- Nichols, M. (2010). Student perceptions of support services and the influence of targeted interventions on retention in distance education. *Distance Education*, 31(1), 93-113.  
doi:10.1080/01587911003725048
- Peters, M. D. J., Godfrey, C., McInerney, P., Baldini Soares, C., Khalil, H., & Parker, D. (2017). Scoping reviews. In E. Aromataris & Z. Munn (Eds.), *Joanna Briggs Institute Reviewer's Manual* (Chapter 11). The Joanna Briggs Institute.  
<https://reviewersmanual.joannabriggs.org/>

- Rovai, A. (2003). In search of higher persistence rates in distance education online programs. *Internet and Higher Education*, 6(1), 1-16. doi:10.1016/S1096-7516(02)00158-6
- Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of educational research*, 45(1), 89-125. doi:10.3102/00346543045001089
- Tinto, V. (1982). Defining dropout: A matter of perspective. *New Directions for Institutional Research*, 1982(36), 3–15. doi:10.1002/ir.37019823603
- Tinto, V. (2015). Through the eyes of students. *Journal of College Student Retention*, 19(3), 254–269. doi:10.1177/1521025115621917
- Woodley, A., & Simpson, O. (2014). Student dropout: The elephant in the room. In O. Zawacki-Richter & T. Anderson (Eds.), *Online distance education: Towards a research agenda* (pp. 459–485). Athabasca University Press. doi:10.15215/aupress/9781927356623.01
- Xavier, M., & Meneses, J. (2020). *Dropout in online higher education: A scoping review from 2014 to 2018*. eLearn Center, Universitat Oberta de Catalunya. doi:10.7238/uoc.dropout.factors.2020

## APPENDIX 2

### POSTER: THE TIME FACTOR IN STUDIES ON DROPOUT IN ONLINE HIGHER EDUCATION\*

---

\* Poster presented at the 10th EDEN Research Workshop, Barcelona, 2018. Xavier, M., & Meneses, J. (2018). The time factor in studies on dropout in online higher education: Initial review of the literature and future approaches. In J. M. Duart & A. Szucs (Eds.), *Proceedings of the 10th EDEN Research Workshop: Towards Personalized Guidance and Support for Learning* (pp. 361-367). European Distance and E-Learning Network.



### Dropout in OHE and the time factor

- Context: studies on *factors* that influence attrition, retention, persistence, and success
- new models of attrition and profiles of students most likely to dropout/persist
- persisters are academically prepared, possess time management skills and high levels of engagement, self-directedness, self-discipline, motivation, and commitment (Holder, 2007)

#### Traditional, brick-and-mortar universities

- **time factor**: important issue for dropout in many studies (Kember, 1999), due to
- conflicting demands from family, work, and social commitments

#### Online open universities

- time-related issues: most important factors for drop out/persistence (Lee & Choi, 2011)

#### UOC context

Fully distance teaching university; eLearning is mostly self-directed and self-regulated (increases individual responsibility)

- *nontraditional learners*: mature-aged or adult, with full- or part-time jobs and family responsibilities
- dropout occurs mostly in the first semester
- crucial: misconceptions about workload/work-family commitments

### Time factor: initial review and implications

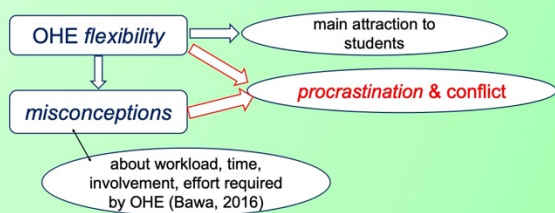


Fig. 1. Key time-related issues for dropout

#### Therefore:

- *time management* is essential for persistence and successful e-learning (Holder, 2007; Lee & Choi, 2011)
- conflicting work-life demands are the most common reason for withdrawal (Ashby, 2004)

### Theoretical approaches

#### Time management approach

- ability to plan study time and tasks (Broadbent & Poon, 2015)
- part of academic self-regulated learning strategies
- strongly connected to academic achievement and performance; key factor for persistence
- specific learner characteristic in time management: academic *procrastination* - negatively related to participation and performance (Michinov et al., 2011)

Conclusion: lack of time, time management, and procrastination are the primary reasons for students failing or dropping an online course (Doherty, 2006).

#### Work-study-home conflict/balance approach

- degree to which work affects the student's ability to meet school-related demands and responsibilities (McNall & Michel, 2017)
- derived from research work-family balance/conflict
- emphasis on conflict (WSC) dominates research
- nontraditional students experience intense conflicts between the work, study, and home domains, especially females (Carney-Crompton & Tan, 2002)
- WSC is negatively related to academic performance (Owen, Kavanagh, & Dollard, 2017)

### Future directions: possible interventions

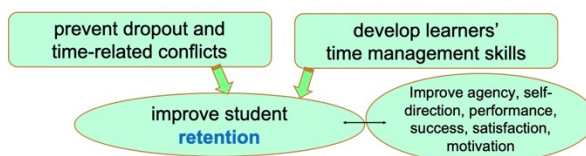


Fig. 2. Possible interventions

- should focus: first academic year, especially the first semester (highest attrition rates)
- embedded in ampler interventions addressing situational, institutional, and personal factors:
  - flexibility in student assessment
  - identify at-risk students early on – personalized support, introductory module
  - targeted advice and orientation
  - personalized course plans, especially for first enrolment

@UOC: recent research/interventional institutional project addressing those issues - ESPRIA ("First-year students"), which provides freshmen with flexible learning paths at course and semester level

## APPENDIX 3

### SCOPING REVIEW: COMPLETE SPREADSHEET WITH CODED PAPERS\*

---

\* Xavier, M., & Meneses, J. (2020). *Dropout in Online Higher Education: A scoping review from 2014 to 2018*. eLearning Innovation Center, Universitat Oberta de Catalunya. <https://doi.org/10.7238/uoc.dropout.factors.2020>.  
Direct link to the Excel spreadsheet: <http://hdl.handle.net/10609/114826>



Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Adams (2017)	2017	Not provided (N/P)	Doctoral dissertation	Retention/Attrition/Persistence: Tinto's (2013) definitions	Not applicable (N/AP)	USA	Distance education (USA)	Distance education	OHE
Ali & Smith (2015)	2015	Online course withdrawal, social isolation in online courses, attrition in online courses	Peer-reviewed article	Attrition (N/P) Withdrawal (N/P)	Attrition: social isolation	USA	Online and f2f computer literacy course, brick-and-mortar university, Indiana University of Pennsylvania (USA)	Online f2f	Course
Allen (2017)	2017	N/P	Doctoral dissertation	Persistence: student posting of attendance as defined by a gradable action in a following course Completion: completing degree in 4, 5, or 6 years from start Dropout: quitting online studies Retention: rate at which student is still enrolled one year after starting	Persistence/Dropout: online instructor's Teaching, Social, and Cognitive Presence (Community of Inquiry (CoI) framework), and demographic variables	USA	Fully online, entry-point Education course, private OHE institution, California (USA)	Fully online	Course
Andrews & Tynan (2014)	2014	N/P	Conference presentation	Success (N/P) Attrition (N/P)	Success: motivation, self- and time management skills, digital literacy, connectedness, wellbeing	AUS	4 Australian universities, 2 hybrid, 2 f2f (Australia)	Hybrid f2f	Universities
Arifin (2016)	2016	Student support, student persistence, open university, mixed methods, open and distance learning	Conference presentation	Persistence: "continuation of enrolment within four consecutive semesters"	Persistence: self-motivation	INDO	Fully online open university, English for Translation and Government Science modules, Faculty of Social and Political Sciences, Indonesia Open University (Indonesia)	Fully online	Course
Arifin (2018)	2018	Student support, student persistence, open university, mixed methods, open and distance learning	Peer-reviewed article	Persistence (N/P) Retention (N/P) Non-enrolment (N/P)	Persistence: student support services. Non-enrolment: workload, lack of university support, financial problems, family commitments, time management	INDO	Fully online open university, Faculty of Social and Political Sciences, Indonesia Open University (Indonesia)	Fully online	Programs
Armstrong, Early, Burcin, Bolin, Holland, & No (2018)	2018	Communication technologies, instructional support, new media, online students, persistence, retention, social connectedness, social media	Peer-reviewed article	Persistence (N/P) Retention (N/P)	Persistence: new media tools. Used Rovai's (2003) model	USA	Fully online. Foundation undergraduate courses in health science degree, private, fully online university, Walden (USA)	Fully online	Courses
Banks (2017)	2017	N/P	Doctoral dissertation	Success (barriers): (N/P) Persistence (N/P) Retention: students graduating	Retention: time; lack of accommodation by faculty; engagement; quality of instruction	USA	Online or blended learning graduate courses, 4 public and private universities, Maine (USA)	Online blended	Courses

Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Adams (2017)	Databases (ProQuest, Springer, Sage, ERIC, and Google Scholar) for persistence in distance education studies, and Education Databases for persistence rates, 2005-2015	To investigate distance education programs for declining student persistence to determine if there was confounding of college completion rates	Attrition Persistence	Measures	Quantitative	Statistical review and synthesis of evidence-based studies	Databases (ProQuest, Springer, Sage, ERIC, and Google Scholar) for persistence in distance education studies Education Databases for persistence rates, 2005-2015	Produced a database for statistical analyses: BESS 1.0 Best-Evidence Research and Education Database Degree Attainment	Not Applicable (NAP)
Alli & Smith (2015)	Online and f2f students (N=114)	To compare the effect of social isolation on students' attrition in online and f2f courses	Attrition	Factors	Quantitative	Statistical	Academic database	Withdrawal rates are higher in online courses (17%) due to social isolation (authors did not provide a causal connection, though)	N/P
Allen (2017)	Online students (N=382)	To explore the association between faculty behaviors and learners' decisions to drop out or persist	Persistence	Factors	Quantitative	Survey	Col survey instrument (Arbaugh et al., 2008)	Majority (91.9%) of students persisted. No association between the factors and demographic variables with persistence.	Investigate students' perception of online instructors
Andrews & Tynan (2014)	Mixed (online and f2f mature students) (N=43)	To understand mature-age students' experiences that support their success	Success	Factors	Qualitative	Phenomenological	Case studies (2) Focus groups Diary data (Charting the Week activities and Day Experience method)	Delineated factors for success (motivation, self- and time management skills, digital literacy, connectedness, wellbeing)	Understand how learners orchestrate their time and their characteristics and patterns
Arifin (2016)	Online undergraduate students (N=153)	To explore the contribution of self-motivation on student persistence	Persistence	Factors	Mixed	Survey	Survey Semi-structured interviews	Intrinsic and extrinsic motivation influenced persistence	To develop high-standard student support and course design so as to support student motivation
Arifin (2018)	Online undergraduate students (N=153)	To explore the contribution of student support in increasing student persistence	Persistence Non-enrolment	Factors	Mixed	Survey	Survey Semi-structured interviews	Student support had a pivotal role in influencing persistence	Improvement of student support at affective, cognitive, and systemic levels in order to enhance student persistence
Armstrong, Early, Burcin, Bolin, Holland, & No (2018)	Fully online, undergraduate Health Science Students. Study 1: N=15; Study 2: N=428	To find out whether new media tools help enhance student engagement, persistence, and retention	Persistence Retention	Factors	Quantitative	Pre-test, post-test quasi-experimental design	Pre- and post-test survey responses	New media tools did not significantly correlate with persistence/retention, but (qualitatively) helped students to feel more connected and supported	Employ new media tools to customize support and learning design
Banks (2017)	Mature-age, nontraditional students (N=80)	To identify barriers perceived by learners, and strategies to cope	Success Persistence	Factors Strategies	Qualitative	Modified Delphi study	Surveys (2)	Barriers to learning: time management (50%); lack of interaction with faculty/peers (32%); communication issues; lack of accommodation by faculty; unmet expectations	Better communication with and accommodation of needs by faculty, including flexibility in assessment timing; better computer skills; more efficient meeting of expectations; improve time management; greater levels of interaction with instructors/peers

Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Bawa (2016)	2016	Online courses, student retention models, social and motivational issues, technology in online courses, online learners and faculty, computer-mediated communications, online course design	Peer-reviewed article	Retention, attrition, dropout, withdrawal (from program or course) (N/P)	Retention/Dropout: sociological, motivational, socio-cognitive theories; students' misconceptions; social and family factors; technological constraints; lack of instructor understanding; institutional limitations	N/AP	Online learning in general	Online	OHE
Bettinger, Doss, Loeb, Rogers, & Taylor (2017)	2017	Economies of scale, input output analysis, productivity, higher education, online education	Peer-reviewed article	Success (in course) (N/P) Persistence (in college): enrollment and number of credits attempted in the next course Withdrawal (from course) (N/P)	Persistence: class size	USA	111 online courses, private hybrid university, DeVry University (USA)	Online	Courses
Bianchi-Laubsch (2014)	2014	N/P	Doctoral dissertation	Retention, success, attrition (N/P)	Retention: course delivery method; sense of community; students' beliefs; gender. Barriers to learning: satisfaction; motivation; learning style; age	USA	Various online courses, online university (USA)	Online	Courses
Bissonette (2017)	2017	Online learning, LMS, education, pedagogy, virtual communities	Peer-reviewed article	Retention, success, attrition (N/P)	Retention: negative perceptions, instructional design, sense of isolation, community, motivation	N/AP	OHE in general	Online	OHE
Bornschlegel & Cashman (2018)	2018	Distance Education, simple mediation, student experience, student retention, student satisfaction	Peer-reviewed article	Retention, attrition, persistence (N/P)	Retention: student (satisfaction, age, GPA, academic inability), environmental (personal and family reasons, lack of time, work-related issues, and program (course design, learning materials, interaction, support) factors	AUS	OHE, courses in Bachelor of Education, Arts, Music, and Professional Communication programs, Central Queensland University (Australia)	Online	Courses
Boton & Gregory (2015)	2015	Online learning, engagement strategies, online pedagogies, online attrition, motivational strategies, diversity in online courses	Peer-reviewed article	Attrition, retention (N/P)	Attrition: cultural diversity, motivation, learning management systems (LMSs), and online pedagogy	Australia, Brazil, Canada, Norway, Spain and USA	Online universities, 12 undergraduate and 6 postgraduate courses, education-related subjects	Fully online	Courses
Brock (2014)	2014	N/P	Doctoral dissertation	Attainment/completion: student obtained a degree or a certificate Dropout: student leaving the institution and not returning after 4 semesters Stopout: students who intentionally leave a college for less than 4 semesters and then return for additional course work	Retention: used the impact model of student change (Pascarella & Terenzini, 2005) - demographic characteristics, academic factors, and student behaviors; reviewed many other models (Tinto's, Bean & Metzner's, Rovai, Kember's, etc.)	USA	Fully online, various undergraduate programs, community college, southwest (USA)	Fully online	Programs
Budash (2015)	2015	N/P	Doctoral dissertation	Persistence: "a multi-faceted phenomenon that leads to completion of an online program of study" (Hart, 2012) Attrition "process of dropping out of or withdrawing from a course or program" (Hart, 2012)	Persistence: Rovai's (2003) composite persistence model and Conceicao and Lehman's (2012) model, plus review of the literature	USA	Fully online Master's in Health Science, private university, Pennsylvania (USA)	Fully online	Masters program

Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Bawa (2016)	N/AP	To examine in the literature why online learners leave, when they are most prone to leave, and what can be done to mitigate these causes.	Retention	Factors Literature review	N/P	Literature review	N/P	Retention factors [see Dropout factors]	Mandatory orientation programs; classes structured for collaborative learning; enhance faculty training and support; use "live" interaction in computer mediated communication
Bettinger, Doss, Loeb, Rogers, & Taylor (2017)	Online student enrolments (N=100,000)	To study whether small changes in class size affect student outcomes and persistence in online college courses	Persistence Withdrawal	Factors	Quantitative	Field experiment	Academic data (course grades, enrollment in next semester and number of credits)	Little evidence of effects on grades and persistence; large classes connected to small increase in probability of withdrawal	N/P
Bianchi-Laubsch (2014)	Online students (N=535)	To determine the sense of community created and its relationship with anticipated student course completion, course grades, and future enrollment; and their correlation to the type of delivery method (asynchronous and synchronous)	Retention	Factors Mode of delivery (asynchronous or synchronous)	Quantitative	Correlational, nonexperimental design Survey	Online Course Survey	Participants did not experience sense of community nor placed importance on it; reported high academic success and strong retention rates in their online classrooms	To focus on student needs; asynchronous classes should provide methods of peer interaction
Bissonette (2017)	N/AP	To explore some best realistic practices related to community-building in the virtual classroom, with the aim of increasing retention and student satisfaction	Retention	Factors interventions	Theoretical (non-empirical)	N/AP	N/AP	N/AP	Design interactive, functional spaces so as to build social presence and community and enhance support. Provide innovative delivery and assessment methods, and clear layout of course content. Boost personal interaction between faculty and students.
Bornschlegl & Cashman (2018)	Undergraduate distance students (N=75)	To investigate how the student experience, the student satisfaction and retention in online courses are related	Persistence Retention	Factors	Quantitative	Survey	Online survey Scales (Students' Satisfaction, The Distance Student Experience, Student Overall Satisfaction, Student Intention to Persist)	Distance student experience and satisfaction with crucial program factors were strongly indirectly related to the students' intention to persist	Course designers should consider program factors and the characteristics of the distance student experience to ensure high levels of student satisfaction and increase intention to persist
Boton & Gregory (2015)	Experienced online lecturers in 6 countries (Australia, Brazil, Canada, Norway, Spain and USA) (N=18)	To examine online lecturers' successful engagement strategies on the four main attrition factors	Attrition	Factors Strategies	Qualitative	Case studies	Web-based survey Interviews	Adopting online activities fit for multicultural cohorts that support higher motivation, and integrating teaching technologies in teaching with a constructivist/connectivist approach, result in higher engagement and retention.	Adopt multicultural-focused, problem-solving, challenging activities into LMSs with a constructivist/connectivist approach to increase engagement and minimize online attrition
Brock (2014)	Nontraditional undergraduate students (N=2,617)	To identify demographic characteristics, academic factors, and student behaviors that contributed to successful degree completion	Completion Retention	Factors Models	Quantitative	Non-experimental, correlational; discrete-time event history analysis	College database	87.7% of students dropped out. Completion factors identified: gender, first generation college status, enrollment load, financial aid status, academic advisement, and first semester behavior (withdrawals) and GPA	Academic advisement pre-enrollment; time/space flexibility Promote early/frequent engagement with LMS Collecting readiness data (motivation, time to study, technological ability etc.) prior to enrollment Share best practices among faculty Develop learning analytics tools to design and implement interventions
Budash (2015)	Online master's degree students (N=8), online faculty members (N=6)	To examine perceptions of online learners and faculty related to persistence	Persistence	Factors	Qualitative	Single case study	In-depth interviews	Persistent students were goal-driven and dedicated. Fostered persistence: active instructors willing to be available and providing consistent feedback; supportive, responsible classmates; organized learning environment. Work and family responsibilities and time management impacted negatively	Structured policies infused with flexibility, open communication, and diligence on the part of all stakeholders; screening persistent characteristics at admission; mandatory orientation activities; personalized advising; creation of sense of community

Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Burgess (2017)	2017	N/P	Doctoral dissertation	Attrition/Dropout (also non-completion and early departure): failing to complete course and program and withdrawing voluntarily (Lee & Choi, 2011) Persistence: continuation of studies despite obstacles (Street, 2010) Retention: ability to retain e-learners until completion of course/program	Dropout: motivation to learn, technological competence, and course/program workload	USA	Online courses and programs, community college, North Carolina (USA)	Online	Courses
Burgos, Campanario, Peña, Lara, Lizcano, & Martínez (2018)	2018	E-learning, student dropout prediction, educational data mining, logistic regression model, temporal data, student dropout prevention, tutoring action plan	Peer-reviewed article	Dropout (of course) (N/P)	Dropout: student activity grades in crucial periods during course	SPAIN	Fully online, 5 courses, BS in Computer Engineering program, Madrid Open University (UDIMA) (Spain)	Fully online	Courses
Burmester, Metscher, & Smith (2014)	2014	N/P	Peer-reviewed article	Attrition: "A reduction in numbers usually as a result of resignation, retirement, or death" – dictionary definition Dropout, Completion, Persistence (N/P)	Attrition: student persistence, perception, technology limitations, and poor student typing skills	USA	Online undergraduate and graduate programs at Embry-Riddle Aeronautical University (ERAU) (USA)	Online	Courses
Calvert (2014)	2014	Predictive analytics; student success; retention; probabilities of success; logistic regression; distance education; learning analytics	Peer-reviewed article	Success (in relation to the student's study/qualification aim) (N/P) Retention (N/P)	Success: 30 student and module variables (e.g. number of modules/credits, occupational status etc.)	UK	Open access online courses, Open University UK (UK)	Fully online	Courses
Cambruzzi, Rigo, & Barbosa (2015)	2015	Learning Analytics, distance education, virtual learning environments	Peer-reviewed article	Dropout/withdrawal: from module or course or institution or higher education	Dropout: complex causes - personal, social and institutional factors; student interaction	BRAZIL	Online modules (Mathematics for Administration and Mathematics for Computing), on-campus university, Unisinos (Brazil)	Online	Courses
Chavez-Toivanen (2017)	2017	N/P	Doctoral dissertation	Completion: time it takes for a student to earn a post-secondary degree Persistence: student's completion of courses currently enrolled in and the immediate enrollment in courses for the subsequent semester	Persistence: being part of a minority; taking online classes	USA	Fully online/on-campus, degree or certificate programs, two rural community colleges, New Mexico (USA)	Fully online f2f	Programs
Chiyaka, Sithole, Manyanga, Mccarthy, & Bucklein (2016)	2016	N/P	Peer-reviewed article	Retention: percentage of first time bachelor's (or equivalent) degree-seeking undergraduates from previous academic year who enroll again in the following academic year (in the same institution) Success, Dropout (N/P)	Retention: institutional characteristics (student-faculty ratio, graduation rate, acceptance rate, enrollment rate, institutional aid rate, default rate, and institution type)	USA	Fully online colleges, mostly undergraduate programs (USA)	Fully online	Universities



Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Burgess (2017)	Online students, various programs (N=298)	To investigate the barriers to successful completion of courses and programs	Dropout	Factors	Qualitative	Descriptive	Online questionnaire	Motivation to learn and course/program workload were more influential as barriers than technological competence; also family/work obligations and time management/procrastination	Online orientation before enrollment
Burgos, Campanario, Peña, Lara, Lizcano, & Martínez (2018)	Online students data (N=104)	To build a predictive model based on data mining, and to design and test a preventative tutoring action plan	Dropout	Models Intervention	Quantitative	Statistical	Academic database	Predictive model and tutoring plan Dropout rate was 25%; after intervention, it was reduced by 14%. Employment circumstances caused most dropouts (despite the intervention)	A tutoring action plan was designed as a dropout prevention mechanism, based on the predictive model for dropout (involving calls, emails, messages to potential dropouts)
Burmester, Metscher, & Smith (2014)	Online undergraduate and graduate students (N=157)	To identify potential contributing factors leading to high attrition rates by surveying current and past online students	Attrition	Factors	Quantitative	Survey	Survey	Student employment responsibilities were the biggest distracters; also use of the internet and computer for non-academic sites. Procrastination and time management were the main barriers to persistence	Implement a mentorship program comprised of advisors and professors Improved new student program that includes a recorded orientation video and increased advising during the acceptance process and 1st year of attendance
Calvert (2014)	Online undergraduate students records, 5 academic years (N=60,000-100,000 each year)	To generate a model of the probabilities of success and retention at different milestones	Retention	Models	Quantitative	Case study	Academic database	30 student and module factors for retention; weighting varies across milestones and time	Strategic curriculum planning; tailoring timely support to individual needs
Cambuzzi, Rigo, & Barbosa (2015)	Online undergraduate students (N= 2,491)	To implement a Learning Analytics (LA) system to dropout prediction that could also support and integrate pedagogical actions to reverse identified dropout tendencies	Dropout	Models Intervention	Quantitative	Data mining	Academic database (LA system)	A LA system based on Multitrail architecture was developed to support data manipulation, pedagogical actions, and dropout prediction. Mean rate for dropout prediction was 83.6%, prediction for non-dropout behavior was confirmed in 87.3%. Pedagogic actions were undertaken with high-risk students. Dropout rates diminished in the two modules (from 32% to 9% and from 19% to 12%)	Use LA system as early diagnosis; broaden the scope of mapping data related to dropout factors, integrating all university sectors; monitor resulting pedagogical actions taken
Chavez-Toivanen (2017)	Minority (racially/ethnically), first-time, full-time, first semester college students enrolled in at least one online course (N=228) and not enrolled in online courses (N=510)	To determine whether there is a relationship between taking online courses in the first semester and the progression toward degree completion for minority student populations	Persistence	Factors	Quantitative	Causal-comparative, inferential statistics	Academic database	There were no statistically significant differences in GPA, persistence, or degree completion for rural minority students who did not take online classes as compared to rural minority students who did take online courses.	Faculty development (training)
Chiyaka, Sithole, Manyanga, Mccarthy, & Bucklein (2016)	Fully online colleges, USA (N=325)	To determine institutional characteristics that influence student retention among schools offering online postsecondary education	Retention	Factors	Quantitative	Statistical analyses	Multi-institutional data (Open Education Database Online, IPEDS database)	Graduation rate, default rate, and college type were significantly associated with retention rate; graduation rate was found to be strongly positively linearly related with retention rate, while default rate was strongly negatively linearly related with retention rate	Direct more effort towards collecting student entry and exit survey data to identify at-risk students Improving faculty, administrator, and staff development and continuous training Exit interviews to understand the sources of dissatisfaction Develop mechanisms to reduce the default rate Collaboration between peer private and public online colleges

Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Choi & Kim (2017)	2017	Adult education; adult learner; cyber-university; dropout; online degree program	Peer-reviewed article	Dropout (voluntary dropout or forbidden to re-enroll due to accumulated academic probation) (N/P) Persistence (N/P)	Models: Kember (1995); Park (2007); Rovai (2003). Employed Choi's (2016) model (in Choi & Park, 2018): learner factors, external factors, internal factors, outcome (GPA) factors	KOREA	Fully online, 15 online degree programs, Korean Cyber-University (Korea)	Fully online	Programs
Choi & Park (2018)	2018	Distance education, online degree program, path-analytic model, adult persistence, adult dropout	Peer-reviewed article	Dropout (N/P)	Models: Kember (1995); Park (2007); Rovai (2003). Described and tested Choi's (2016) model: learner factors, external factors, internal factors, outcome (GPA) factors	KOREA	Fully online, 15 online degree programs, Korean Cyber-University (Korea)	Fully online	Programs
Cochran, Campbell, Baker, & Leeds (2014)	2014	Student retention, online learning, distance education, student characteristics	Peer-reviewed article	Retention and Attrition (in single courses) (N/P)	Attrition/persistence: demographic, internal and external factors; focused on individual students' characteristics Discussed Tinto (1975, 1993), Bean & Metzger (1985), and Rovai (2003) models	USA	Multiple online courses, state university (USA)	Online	Courses
Croxton (2014)	2014	Social cognitive theory, interaction equivalency theory, social integration theory, interactivity	Peer-reviewed article	Persistence (N/P) Dropout (of course) (N/P)	Persistence: online social interactivity (formal and informal) Persistence: review of factors	N/AP	N/AP	N/P	N/P

Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Choi & Kim (2017)	Nontraditional adult students enrolled in online bachelor's degree programs at the Korean Cyber-University (N=3,462)	To employ Choi's conceptual model to an administrative data set to investigate meaningful factors affecting adult distance learners' decisions to drop out of online degree programs in a cyber-university	Dropout	Models	Quantitative	Statistical analyses	Administrative database	Dropout rate for the sample was 46.8% Students with low level of basic scholastic aptitude, the studying motive to go on to graduate school, more physical constraints, less learner-content interaction, frequent learner-instructor interaction, low level of satisfaction, and low GPA are more likely to drop out Learner-instructor interaction has a significant, but negative, effect on student persistence	Establish optimal strategies to help students who have lower levels of basic scholastic aptitude Devise more practical and innovative ways to help students continue their studies despite their experience of physical constraints from work, family, and/or personal issues Administrators should control the quality of every instructional activity including learner-instructor interaction Take into consideration individual differences related to all dropout factors
Choi & Park (2018)	Nontraditional students enrolled in online bachelor's degree programs at the Korean Cyber-University (N=2,129)	To empirically identify the direct and indirect relationships between major adult dropout factors (i.e., basic scholastic aptitude, physical constraints, interaction with course content, satisfaction, and GPA) and provide educational practitioners with insights that will enable them to indirectly handle uncontrollable adult dropout factors based on the empirical evidence	Dropout	Models Factors	Quantitative	Path analysis, descriptive statistics	Administrative database	Dropout rate for the sample was 45.3% The physical constraints variable has statistically significant direct and indirect relationships through interactions with course content, satisfaction, and GPA with adult students' dropout decisions, and the basic scholastic aptitude variable has an indirect relationship with dropout decisions through interactions with course content and GPA.	Establish strategies for helping adult distance students who have physical constraints, and manage the latter by controlling mediating variables, such as their interactions with course content and satisfaction with the online courses Offer brief core summaries of course content, periodic one-on-one assistance with tutors, and encouragement accompanied by engaged instructor support provide adult distance students who have low scholastic aptitudes with additional "gap bridge content" Design online courses so that adult distance students can more easily and conveniently interact with course content
Cochran, Campbell, Baker, & Leeds (2014)	Undergraduate online students (N=2,314)	To determine how individual characteristics of students may be associated with the likelihood of withdrawal from online classes	Retention	Factors	Quantitative	Statistical (logistic regression)	Academic database	Prior performance in college classes (cumulative GPA) and class standing (senior vs. non-senior) as significant student characteristics related to student retention Other factors significantly related to retention rates for students with certain characteristics or within certain majors include previous withdrawal from online courses, gender, and receipt of academic loans	Develop policies and guidelines to provide increased support for and monitoring of students (freshmen and sophomores; students with lower cumulative GPAs) Develop policies and guidelines for students with lower cumulative GPAs in programs with more analytical or technical content (e.g. business, science and math) Be cognizant of gender differences in withdrawal rates in fields that have predominant gender roles Follow-up with students when they first withdraw from an online class to mitigate future withdrawals
Croxton (2014)	N/P	To examine the role that formal social interactivity (student-student and student-instructor) in online course design plays in overall student satisfaction and persistence	Persistence	Factors Literature review	Theoretical	Literature review (N/P)	N/P	Interactivity is an important component of satisfaction and persistence for online learners, and preferences for types of online interactivity vary according to type of learner. Student-instructor interaction was also noted to be a primary variable in online student satisfaction and persistence	Developing a clearer understanding of students' demographics and learning styles and how these styles relate to interaction preferences so as instructors can tailor their instructional strategies and tasks



Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Deschascht & Goeman (2015)	2015	Adult learning; evaluation of CAL systems; blended learning; dropout; difference-in-differences	Peer-reviewed article	Dropout (course): "number of students who do not participate in the end evaluation of a course (exam), relative to the number of students enrolled" Persistence (course): exam pass rate and course pass rate	Dropout: introduction of blended learning Mentions Lee & Choi (2011) and Park & Choi (2009) models	BELGIUM	Blended, 30 courses, business undergraduate education, KU Leuven university (Belgium)	Blended	Courses
Dews-Farrar (2018)	2018	Online learning, persistence, faculty responsiveness, institutional commitment and support	Doctoral dissertation	Persistence (N/P) Attrition: "a university or college's inability to sustain enrollment of online college students before course or degree completion" Retention: "online college or university's maintenance of students enrolled in online courses through course and or degree completion"	Persistence: Keller's ARCS model of motivational design Employed seminal theories (models) of student retention and attrition (Bean & Metzner, 1985; Rovai, 2003; and others)	USA	Online Masters and PhD programs, university (USA)	Online	Masters program PhD program
Dexter (2015)	2015	N/P	Doctoral dissertation	Persistence: "enrollment in at least three consecutive academic semesters at the same institution of higher education, with a credit load of at least six credits per semester" Success: "cumulative grade point average (GPA)"	Persistence: engagement Discusses Tinto's model of retention	USA	Hybrid, 5 public universities, Northeast (USA)	Hybrid	Universities
Donnelly (2014)	2014	N/P	Doctoral dissertation	Attrition (N/P) Dropout (N/P)	Persistence model: McGivney (2009)	USA	Hybrid, community college, Boston (USA)	Hybrid	Courses
Duckett (2014)	2014	Institutional factors, personal factors, persistence, graduation	Doctoral dissertation	Attrition: "the loss of students from a program or from the institution (Soen & Davidovitch, 2008)" Persistence: "the desire and action of a student to stay within the system of higher education from the beginning of the year through degree completion" (Escobedo, 2007) Retention: "the ability of an [educational] institution to retain a student beginning from admission to graduation" (Berger & Lyon, 2007)	Persistence: personal and institutional factors	USA	Asynchronous online doctoral programs (5), universities (USA)	Online	PhD programs
Estes (2016)	2016	N/P	Chapter	Attrition: "loss of student enrollment" Retention (N/P)	Retention: faculty participation, course infrastructure Discussed Tinto's (1975, 1993) and Kember's (1989) models	N/AP	Online higher education in general	Online	OHE

Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Deschascht & Goeman (2015)	First year, adult students (N=1,883)	To test the impact of introducing a blended learning format on course persistence and performance	Dropout	Mode of delivery (blended or f2f)	Quantitative	Natural experiment Difference-in-differences design	Administrative database	Blended learning has a negative effect on course retention (increased dropout rates) and a positive effect on student performance (higher exam scores) Overall effect on course pass rates is positive	Powerful instructional design, taking into account certain risk factors and profiling at-risk learners at the start of a programme Adapted support
Dews-Farrar (2018)	Online Masters or PHD graduates (no dropouts); teachers of college level online courses (N=26)	To investigate why students persisted in online graduate degree programs, how they described their lived experiences as online learners, and the factors that enabled persistence	Persistence	Factors	Qualitative	Qualitative descriptive	Telephone interviews	Factors that enabled persistence: flexibility and convenience of online degree programs; self-confidence and competence; determination	Relevant coursework and consistent meaningful online faculty presence. Family support, support from other students, and institutional support in the form of student services and efficacious instructors
Dexter (2015)	Online and non-online undergraduate students (N=672)	To explore the relationship between level of student engagement and the rates of success and persistence	Persistence	Factors	Quantitative	Survey	Institutional data, survey (National Survey of Student Engagement, and GPA)	Online learners had a higher average GPA than non-online ones No significant difference in persistence No statistically significant relationship between Engagement Indicator scores and either GPA or persistence	Identifying other contributors to student persistence Implementation of campus early-alert systems
Donnelly (2014)	Online community college adult students who left at least one online course early (N=9)	To explore the lived experiences and feelings of participants in order to uncover reasons why some adult learners do not complete asynchronous online courses	Attrition	Factors	Quantitative	Phenomenological	Interviews	Attrition factors: conflicting priorities, increased work load	Detailed syllabus; understand how outside factors influence attrition
Duckett (2014)	Online doctoral graduates (N=8)	To explore the contributing personal and institutional factors that related to the persistence of online asynchronous doctoral learners towards degree completion	Persistence	Factors	Qualitative	Phenomenological	Online interviews	Situational and dispositional factors such as intrinsic and extrinsic motivation, spirituality, and situational factors (family support and situational challenges) were related to persistence	Develop courses that strengthen student knowledge in writing and research skills at the beginning of the doctoral program or before the dissertation stage Improving mentor training More positive interaction between the committee members and the student Encourage students to be more proactive
Estes (2016)	N/AP	To provide background on the relationship between student engagement and retention To consider course infrastructure that supports student engagement and retention To examine teaching strategies to engage and retain online students To discuss the process of faculty development to teach online	Retention	Factors Intervention	Theoretical (non-empirical)	N/AP	N/AP	N/AP	Guiding and supporting online faculty in strategies of student engagement and retention Providing ongoing faculty professional development and creating a teaching culture inclusive of informal scholarly investigations related to instructional effectiveness Provide prompt feedback, clear and accessible guidelines, and open communication Implement constructivist practices Build a sense of community Promote critical thinking Develop self-regulated learners

Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Faulconer, Griffith, Wood, Acharyya, & Roberts (2018)	2018	Grade distribution, online, Physics, withdrawal rate	Peer-reviewed article	Withdrawal (N/P) Dropout (N/P) Attrition (N/P)	Withdrawal: cognitive overload; prior performance; delivery mode (online/traditional)	USA	Hybrid. Online and video synchronous introductory Physics module, Embry-Riddle Aeronautical University (ERAU) (USA)	Hybrid	Courses
Figueira (2015)	2015	N/P	Doctoral dissertation	Attrition: "students who disenroll, withdraw, stopout, or resign from a university for any reason" Retention (N/P)	Retention: Tinto's Social Integration model (isolation, incongruence, adjustment, and difficulty)	USA	Online, f2f, and hybrid modes, large university (USA)	Online f2f hybrid	University
Franklin (2015)	2015	N/P	Peer-reviewed article	Dropout (N/P) Retention (N/P)	Retention: instructional factors; faculty engagement and characteristics; students' characteristics and satisfaction; work, life, family commitments; social and cognitive factors	N/AP	Online higher education in general	Online	OHE
Franko (2015)	2015	N/P	Doctoral dissertation	Persistence: "students who remain active from class to class and do not drop out of school; persistence is an individual indicator of student performance (Levitz et al., 1999)" Dropout: "student who voluntarily or involuntarily becomes inactive and does not graduate (Levitz et al., 1999)"	Persistence: coaching Used Self-Determination Theory Reviewed literature on persistence factors	USA	Mixed (on-campus and fully online) university, multiple undergraduate degrees, Florida (USA)	Fully online f2f	University
Fraser, Fahlman, Arscott, & Guillot (2018)	2018	Pilot testing, feasibility study, attrition, retention, model, health administration, human service, online, undergraduate, students, distance education	Peer-reviewed article	Attrition (N/P) Retention (N/P)	Retention: employed model by Berge and Huang's (2004), with personal, institutional, and circumstantial factors	CAN	Open online university, Health Administration and Human Services programs, Athabasca University (Canada)	Fully online	Programs
Gangaram (2015)	2015	N/P	Doctoral dissertation	Persistence: "the efficacy of a student to complete a course (Kemp, 2002; Libby, & Catherine, 2008)". Antonyms: attrition and dropout Dropout: "student who opts to withdraw from a course (receives a 'W' on the transcript) or does not attend and participate in course activities. Consequently, due to non-attendance, the student is subsequently dropped and receives an 'F' on the transcript (Botsch & Botsch, 2012)"	Dropout: unfamiliarity with the environment, learner preparedness, attitude, and motivation, and afforded institution and instructor support	USA	Blended and online introductory statistics course, private university (USA)	Blended online	Course

Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Faulconer, Griffith, Wood, Acharyya, & Roberts (2018)	Primarily nontraditional students, online, video synchronous, and traditional deliveries (N=1,964)	To critically compare student performance in online and traditional undergraduate introductory Physics classes	Withdrawal	Mode of delivery (online/traditional)	Quantitative	Statistical analysis	Academic database	Statistically significant differences were found for student failure rates, grade distribution, and withdrawal rates, but with very small effect sizes Online students had a significantly lower failure rate than students who took the class via synchronous video classroom. Student withdrawal rates were lowest for students who took the class in person (in-person classroom and synchronous video classroom) than online. Students that persisted in an online introductory Physics class were more likely to achieve an A than in other modes	N/P
Figueira (2015)	Faculty, various departments, online, f2f, and hybrid modes (N=30) Online and f2f students who withdrew from university in their first year (N=12)	To offer a qualitative evaluation of the faculty perspective that targets the applicability of Tinto's Model in the arena of online student retention	Retention	Models	Qualitative	Interview	Interview Focus groups	While it requires revision, Tinto's Theory of Social Integration retained a modicum of validity throughout the academic environment Financial difficulties and family issues were the most cited reasons for withdrawal	Rethink the entire notion of college student retention
Franklin (2015)	N/AP	To review the literature on factors that impact student retention To present best practices in the online classroom to engage and retain students	Retention	Intervention Factors Literature review	Theoretical (non-empirical)	N/AP	N/AP	N/AP	Best practices in the design structure of online courses: Typical first courses within a program must be designed to place emphasis on the factors that play the greatest role of success, and work to develop these skills in enrolled students Use discussion board to ask for students' biographic data, expectations, difficulties, and how many hours they plan to dedicate to course Personal phone calls from instructors Clear, sandwich feedback Keep technology to what is necessary
Franko (2015)	Newly enrolled online undergraduate students (N=1,006)	To investigate the extent to which immediacy behavior coaching services impact online student persistence and grades	Persistence	Factors Intervention	Quantitative	Quasi-experimental	Academic database	GPA and percentages for dropout were similar for coached and non-coached students No effect was found for coaching	Evaluate the proper student to coach ratio Target students early Use multiple forms of communication technologies to conduct interventions
Fraser, Fahiman, Arcsott, & Guillot (2018)	Fully online undergraduate students (N=121) who graduated (N=30) or discontinued (N=91) their studies	To determine the feasibility of using a survey questionnaire and the recruitment and data collection processes in a pilot study prior to a main descriptive study on attrition and retention	Retention	Research methods	Mixed	Comparative survey design	Online survey with open questions	Pilot study had a good response rate from individuals who discontinued their studies; online open source survey is recommended as a research instrument Provides several recommendations for improving instrument and methodology when researching attrition and dropout	N/P
Gangaram (2015)	Undergraduate students enrolled in an introductory statistics course in blended (N=122) and online course formats (N=273)	To compare students' performance and persistence in statistics in blended and online instructional delivery formats	Persistence	Mode of delivery (online/blended)	Quantitative	Quasi-experimental non-equivalent group design	Academic database	There were significant differences in student performances in various forms of assessment for the two modalities. Participants in the blended modality had higher averages in most of them. Student persistence was slightly higher in the blended course format	Mandate a self-check prior to course start, targeting students' preparedness Provide advice to learners on the more appropriate modality of delivery

Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Gardner (2016)	2016	N/P	Doctoral dissertation	Completion (of course) (N/P) Success: earned final grade	Completion/success: professional development certification program for online instructors	USA	Online courses, Midwestern community college (USA)	Online	Courses
Garratt-Reed, Roberts, & Heritage (2016)	2016	Equivalency theory, online learning, introductory psychology, group-work, student retention	Peer-reviewed article	Retention (N/P) Attrition (N/P)	Retention: Equivalency Theory; satisfaction, mode of delivery	AUS	Online and f2f introductory psychology unit, Curtin University (Australia)	Online f2f	Courses
Gaytan (2015)	2015	N/P	Peer-reviewed article	Dropout (N/P) Retention (N/P)	Expert online faculty: student self-discipline, quality of faculty and student interactions, institutional support to students, last grade received in an online course, and no transfer credit received by the student. Students [all institutional factors]: increased faculty instruction, meaningful feedback given to students, transfer credit received by students, maintaining an adequate GPA, and institutional support to students.	USA	Hybrid. Online graduation modules in Business, North Carolina A&T State University (USA)	Hybrid	Courses
Gazza & Hunker (2014)	2014	Student retention, online, education, graduate, nursing	Peer-reviewed article	Retention: "continued enrollment in an online program from admission through program completion"	Discussed models from Rovai (2003), Holley & Oliver (2010), and Moore and Fetzner (2009) Several other factors	N/AP	Online graduate nursing education programs (literature on)	Online	Programs
Giannaris (2016)	2016	N/P	Doctoral dissertation	Retention: "ability or the act of colleges and universities of keeping students through graduation (Reason, 2009)" Persistence (N/P) Attrition (N/P)	Retention: Tinto's theory on student retention; reviews several factors - time management, self-regulation theory, emotional intelligence, learning styles Persistence: reviews several (internal, external, cultural) factors	USA	Online doctoral programs, American universities (USA)	Online	PhD programs
Glazer & Murphy (2015)	2015	N/P	Peer-reviewed article	Persistence: "successful completion of courses and continued enrollment" Success (N/P)	Persistence: pathway to a better life; the reflective learner; synchronizing learning, earning, and living; and the match with an academic life	USA	Online Master's program in Psychology, Capella University (USA)	Online	Masters program
Glazier (2016)	2016	Online education; online retention; student success; rapport	Peer-reviewed article	Retention (N/P) Attrition: "proportion of a given class that earns a D, an F, or withdraws (from course)" Success: course grades and retention rates	Withdrawal: student characteristics, institutional shortcomings, course design, student-instructor rapport	USA	Online undergraduate course, Introduction to Political Science, University of Arkansas at Little Rock (USA)	Online	Course

Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Gardner (2016)	Online instructors (N=32)	To examine whether the best practice of a professional development certification program for faculty who teach in the online environment contributes to increased student completion and student success rates	Completion	Factors	Quantitative	Non-experimental case study Descriptive statistics	Academic database	Marginally and statistically significant differences in mean student completion and success rates. The greatest increase in mean student completion was observed the semester instructors participated in the program, while the greatest increase in mean student success rates was observed after instructors completed the professional development certification program	Investment of adequate resources of time, money, and personnel to develop professional development certification programs for all instructors
Garratt-Reed, Roberts, & Heritage (2016)	Online (N=56) and f2f (N=810) undergraduate psychology students (N=866)	To compare student grades and satisfaction, as well as retention rates, in online and face-to-face versions of an introductory psychology unit	Retention	Mode of delivery (online and f2f)	Quantitative	Quasi-experimental	Academic database	Student grades did not significantly differ between modes of delivery, except for a group-work based assessment where online students performed more poorly. Student satisfaction was generally high in both modes of the unit, with group-work the key source of dissatisfaction in the online unit. Retention rates were significantly lower in the online unit	N/P
Gaytan (2015)	Online senior students majoring in Business (N=15) Expert online faculty (N=15)	To compare faculty and student perceptions regarding factors that affect student retention and derive recommendations	Dropout	Factors Recommendations	Qualitative	Grounded study method	Interviews	[see Dropout factors]. Students and faculty had different perceptions of the factors, agreeing in relation to the importance of institutional support and GPA	More instruction and feedback from professors Online orientation/module regarding self-discipline and time management skills previous to first enrolment Increase transfer credit More efficient online student support services Training online faculty more efficient online student support services training online faculty
Gazza & Hunker (2014)	Articles that address models, research, and best practices supported in nursing and higher education, 2006-2014 (N=23)	Review of literature designed to identify strategies to improve student retention in online graduate nursing education programs	Retention	Factors Literature review	Theoretical (non-empirical)	Review of literature	Publications	Student retention in online programs is a multidimensional problem requiring a multifaceted approach	Ensuring social presence and program and course quality Attentiveness to individual student characteristics (Large list of recommendations compiled from the literature)
Giannaris (2016)	Doctoral students who attend American distance education colleges and whose native language is not English (N=10)	To explore how online nonnative English-language (NNEL) doctoral students attending American colleges overcome barriers in order to persist in college graduate online programs	Retention Persistence	Factors	Qualitative	Case study	Interviews Reflective essays Online surveys	Retention: several factors (inspirational factors, ethics, family, cultural beliefs, religion, personality, etc.) Barriers to persistence: several factors (time management, procrastination)	Reviews several theories on how to decrease attrition and increase retention Academic and social integration Revise master's degree programs in order to better support the students in their writing abilities Provide tutoring programs at the beginning of master's and doctoral programs Hire instructional designers Create bilingual graduate programs
Glazer & Murphy (2015)	Students in a master's program (N=N/P)	N/P	Persistence	Factors intervention	Quantitative	Statistical analysis	Academic database	Persistence to the end of the First Course and program persistence increased Decrease in the percentage of failing grades Completing an orientation seminar increases probability of success in First Course	Focus on the first-year experience Redesign of the Orientation Seminar and the addition of support resources and services in the learning management system or "courseroom."
Glazier (2016)	Students in online classes with rapport building teaching strategies (N=143) and in classes without them (N=322)	To test whether improving rapport with online students leads to improvements in student success	Retention	Factors Intervention	Quantitative	Survey Statistical analysis	Survey Academic database	Significantly lower attrition and significantly higher grades in the rapport-building courses High-rapport relationship with the instructor was a key factor in student success	Rapport building strategies (video updates, personal e-mails, and personalized electronic comments on assignments)



Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
González (2015)	2015	Online learning, online education, intrinsic motivation, extrinsic motivation, amotivation, retention	Peer-reviewed article	Retention: "intention to continue taking online courses"	Retention: motivation; mode of delivery (fully online programs or hybrid) Theory: self-determination theory	USA	Fully online or blended, online courses, Florida National University (USA)	Fully online blended	Courses
Grau-Valldosera & Minguillón (2014)	2014	Dropout; early dropout; higher education; online university; distance education; learning analytics	Peer-reviewed article	Dropout: "proportion of students who have taken a break for N or more semesters out of the total number of students enrolled on the programme during the period in question" (e.g., Computer Engineering, 5 semesters; Psychology, 3 semesters) Several other definitions of dropout (extracted from Lee & Choi, 2011) Break: not enrolling for one or more semesters	Dropout: "clash between the student (becoming a student again for adult learners with different expectations and personal situation) and the institution (methodology, support, etc.)"	SPAIN	Fully online, 16 undergraduate programmes, Universitat Oberta de Catalunya (Spain)	Fully online	Programs
Grau-Valldosera, Minguillón, & Blasco-Moreno (2018)	2018	Distance education; online distance learning; dropout; retention; continuance intention; enrollment	Peer-reviewed article	Dropout: long-term, program definition Retention (N/P) Continuance intention to continue studies after one or more periods of non-enrollment Break: period of non-enrollment	Discusses Lee & Choi (2011) student, environment, and course-program factors	SPAIN	Fully online, Universitat Oberta de Catalunya (Spain)	Fully online	Courses
Greenland & Moore (2014)	2014	Attrition; retention; open access; student management; online marketing education	Peer-reviewed article	Attrition/withdrawal (from course) (N/P) Retention (N/P)	N/P	AUS	8 online courses, Marketing program, Swinburne University of Technology (Australia)	Online	Courses

Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
González (2015)	Undergraduate students taking online courses (N=788): fully online (N=210) and on-campus (N=577)	To assess the impact of intrinsic motivation, extrinsic motivation, and amotivation on retention for online students and on-campus students taking online courses	Retention	Factors Mode of delivery	Quantitative	Survey	Survey Academic Motivation Scale	Amotivation and intention to continue taking online courses (retention) were statistically different between fully online and blended learners Intrinsic and extrinsic motivation had a positive impact on retention for both groups Amotivation had a significant negative influence on retention	Continuing analysis of traditional students who combine on-campus and online courses Instructors should put special emphasis on converting the pessimism of on-campus students taking online classes into a willingness to continue, using the online platform to learn through more interaction
Grau-Valdósera & Minguillón (2014)	Fully online undergraduate students (N=62,450)	To define dropout in online higher education at programme level, following an empirical process based on an in-depth analysis of enrollment data	Dropout	Theoretical Measures	Quantitative	Statistical	Academic database	Dropout rate (not finishing degree) of 57.6% over 26 semesters Pure empirical definition, at a programme level, of students who drop out of an online higher education context with non-mandatory enrollment There are differences regarding the number of consecutive semesters that define dropout depending on whether the programme requires previous experience or not Significant differences in the dropout rate between specific programmes, and a higher level of dropout in the first semesters	Early dropout detection allows institutions to take corrective measures Reinforcing mentoring strategies and promoting closer relationships between the student and the institution by means of a personalized channel (i.e., a mentor) Continuously analyze dropout semester after semester, in order to build reasonable models
Grau-Valdósera, Minguillón, & Blasco-Moreno (2018)	Fully online students that did not enroll in their second semester (N= 380)	To analyze the intention to continue of those students who have not enrolled in the second semester is analyzed, adopting a long-term program perspective	Dropout Stop-out Continuance	Factors Factors Model	Quantitative	Survey	Survey Academic database	Models of continuance intention and effective re-enrollment are essentially different Continuance intention is more rational, even logical, and is mainly based on the level of satisfaction or dissatisfaction with the educational experience Effective re-enrollment is more practical or pragmatic, with more importance given to the effects of student dimension variables, e.g., motivations for studying, previous university experience, or environmental variables, such as having a job Continuance intention was higher for women and for students whose motivation for enrollment related to workplace goals Time and personal costs were the most important factors for non-enrollment	Direct intervention in course-program variables and the personalization of the learning experience based on the relevant environmental or student variables, such as previous university experience, gender, having kids or the level of extrinsic motivation Knowledge of the initial characteristics of students, especially e-learning readiness and initial support in first-time enrollment should support personalization
Greenland & Moore (2014)	Enrolment and attrition rates of online graduate students (N varied from 674 to 2030) Online graduate students who withdrew (ongoing qualitative research) (N=50)	To explore student enrolment and retention rates to see if any observed patterns can be used to inform student management and/or an institutional retention strategy To investigate student motives for withdrawal (ongoing research)	Attrition	Measures Factors (ongoing research)	Quantitative Qualitative (ongoing research)	Statistical analysis Interview (ongoing research)	Academic database Telephone interviews (ongoing research)	Attrition rate of 20% Reasons for withdrawal (ongoing research): work commitments, personal reasons (health, family commitments), learner technology problems, student ability, and time management	Retention strategies should be designed according to the stage students are at in their studies Prioritisation and development of more effective enrolment and performance data reporting capabilities



Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Gregori, Martínez, & Moyano-Fernández (2018)	2018	Distance learning, dropout rate, information and communication technologies in education	Peer-reviewed article	Dropout: no re-enrollment in the following year	N/P	SPAIN	Online Master's Degree in Computational Mathematics at Universitat Jaume I in Castellón (Spain)	Online	Masters program
Hachey, Wladis, & Conway (2014)	2014	Online learning, G.P.A., prior online experience, retention, community college	Peer-reviewed article	Retention/Persistence: to complete a course Attrition/Dropout (N/P)	Retention: prior online course outcomes, GPA	USA	Fully online courses, community college (USA)	Fully online	Courses
Hannah (2017)	2017	N/P	Doctoral dissertation	Retention: "the extent to which learners remain within a higher education institution, and complete a program of study in a predetermined time-period (Hewitt & Rose-Adams, 2012)" Attrition: "a decrease in the number of students in a cohort that results from a failure to enroll every fall semester within a specific timeframe (Haydarov, Moxley, & Anderson, 2012)"	Retention: learning styles; motivation; instructional design; adult readiness; faculty	USA	4 online courses, hybrid university (USA)	Online	Courses
Harris (2015)	2015	N/P	Doctoral dissertation	Retention: "percentage of students that attempt to complete a course and remain enrolled until the completed semester" Success: "achieving a D or higher as a final grade in a course"	Success: course design Retention: mentions models by Tinto (1993), Bean and Metzner (1985), and Rovai (2003)	USA	Online undergraduate courses, Mississippi Virtual Community College (USA)	Online	Courses
Hart (2014)	2014	N/P	Peer-reviewed article	Persistence: N/P Attrition: "departure from college"	Persistence: social connectedness, perceived stress and support, self-motivation, and goal attachment Persistence: discusses models by Kember (1989) and Park (2009)	USA	Online nursing programs, two midwestern universities (USA)	Online	Programs

Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Gregori, Martínez, & Moyano-Fernández (2018)	N/P	To design and analyze the implementation of a number of guidelines that allow us to effectively unify a high-quality teaching methodology and the use of new technologies in distance learning, focusing on the analysis of the dropout rate to establish patterns of behavior at all levels that allow us to decrease this indicator	Dropout	Interventions	Quantitative	Statistical	Academic database	Dropout rate of 22% Reduction of approximately 25% after measures were implemented	Several guidelines: 1. Encourage distance learning students to attend the first class of the course 2. Keep the course page in the Virtual Classroom up to date and send out news and announcements regularly 3. Encourage virtual office hours 4. Encourage frequent (but not overloaded) continuous assessment 5. Provide written reports of oral assessment tests (if applicable) that guarantee the fairness of the process 6. The Master's Thesis will be defended face-to-face at the institution, whenever feasible. If students are unable to attend, they will defend their thesis by videoconference 7. Be flexible. Maintain a sympathetic attitude and
Hachey, Wladis, & Conway (2014)	Online undergraduate students (N=962)	To investigate the interaction of prior online experience and G.P.A. in order to help community colleges target support services by identifying students at greater risk of failure and dropout in online learning	Retention	Factors	Quantitative	Statistical	Academic database	Prior online course experience is a very significant predictor of successful completion of subsequent online courses, even more so than G.P.A. For students with no prior online course experience, G.P.A. was a good predictor of future online course outcomes; but for students with previous online course experience prior online course outcomes was a more significant predictor of future online course grades and retention than G.P.A.	Target students with no prior online experience who have G.P.A.'s at the lower end of the spectrum and students, regardless of G.P.A., who have had a prior unsuccessful online course experience Online orientation with diagnostic intervention Assess the students through interviews to identify specific areas for support and provide individualized counseling
Hannah (2017)	Nontraditional undergraduate students enrolled in at least one online class (N=86)	To investigate the types of activities assigned in the Learning Management System (LMS) and the relationship between student satisfaction, engagement, and retention	Retention	Factors	Quantitative	Quasi-experimental	Survey Questionnaire	There was no association between course enrollment and retention or satisfaction Adding engaging activities to the online environment did not affect the overall retention	Develop all online classes by adding more engaging activities Add tutoring services for online students
Harris (2015)	Instructors, division chairs and dean of instruction (evaluators of instrument) (N=19)	To (a) review evaluation standards capable of rating instructional quality of an online course, (b) validate the evaluation standards to be included in the evaluation instrument, and (c) determine if relationships exist between faculty evaluation scores and student success and retention in online courses	Retention	Factors Instruments	Quantitative	Nonexperimental, correlational design	Survey	New instrument to define evaluation standards for online courses (Online Faculty Course Evaluation Instrument) Positive weak relationships were found: (a) correlation between course student-retention and the Assessment and Feedback Item #1, "course assessments are distributed equally and appropriately throughout the semester" (b) correlation between course student success rates and the overall Course Information scores (c) correlation between course student-success rates and Assessment and Feedback Items #1, "course assessments are distributed equally and appropriately throughout the semester", and (d) correlation between course student-success rates and Assessment and	Appropriate professional development for faculty and evaluators, including explanation of specific requirements and provide samples of courses rated Superior
Hart (2014)	Online nursing students (N=103)	To develop a psychometric instrument to measure the ability of nursing students to persist in online courses	Persistence	Instrument Factors	Quantitative	Factor analysis	Survey	Instrument for measuring persistence: Persistence Scale for Online Education in Nursing The persistent student can be characterized as enjoying discussion, confident of passing, and rarely upset by unexpected events. Nonpersistent students do not enjoy discussion and do not believe completing a challenging course will help them achieve goals.	N/P

Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Heald (2018)	2018	Online learning, synchronous support, asynchronous learning, synchronous learning, student retention, constructivist online learning	Doctoral dissertation	Retention: "number of enrolled students who complete a course and receive course credit (Koehnke, 2013)" Successful completion: "completing a course with a final grade of A, B, C, or D (Rust, 2006)"	Retention: student (synchronous) support Discusses many other factors (e.g. motivation, coaching, student participation)	USA	Early childhood education courses, 13 with synchronous support and 13 without, fully online university (USA)	Fully online	Courses
Heidrich, Victória Barbosa, Cambuzzi, Rigo, Martins, & dos Santos (2018)	2018	Learner diagnosis, learning style, learning trail, diagnosis support	Peer-reviewed article	Dropout (N/P)	Dropout: learning styles	BRAZIL	Four online undergraduate courses, brick-and-mortar university, Unisinos (Brazil)	Online	Courses
Hilton III, Fischer, Wiley, & William (2016)	2016	Open educational resources (OER), computers in education, textbooks, financing education	Peer-reviewed article	Course throughput: "aggregate of three variables – drop rates, withdrawal rates, and C or better rates" Dropout/Withdrawal (from courses): (N/P)	Throughput: using Open Education Resources (OER)	USA	Online, f2f, and hybrid/blended undergraduate courses, Associate of Science degree, Tidewater Community College (USA)	Online f2f blended	Program
Huggins (2016)	2016	N/P	Master's thesis	Attrition: "a student starts, but does not continue in a course"; a "decrease in the number of students participating in course activities or a degree program (Angelino, Williams, & Natvig, 2007)" Persistence: "a students' continuation in a course, with or without academic success, without withdrawing from the course"	Attrition: being a non-traditional learner (minority groups, students with English as a second language, immigrant learners, learners with physical or psychological disabilities, adult learners) Literature review on persistence factors ("support") and barriers	CAN	Online and f2f college, online courses, Northern College, northern Ontario (Canada)	Online	Courses
Huntington-Klein, Cowan, & Goldhaber (2017)	2017	Community college, online education, distance learning, quasi experiment	Peer-reviewed article	Persistence (in course or program) (N/P)	Persistence: selection into courses; taking online courses	USA	Online and f2f courses, 35 community colleges, Washington State (USA)	Online f2f	Universities
Inkelaar & Simpson (2015)	2015	Distance education; graduation; retention; dropout; motivational emails; cost/benefits of retention activities	Peer-reviewed article	Dropout (N/P) Retention: entering/sitting/passing at least one exam	Dropout: indebtedness, depression, lack of time	UK	Online Laws programme, University of London International Programmes (UK)	Online	Program
James, Swan, & Daston (2016)	2016	N/P	Peer-reviewed article	Retention: student enrolled in any course 12 to 18 months after first course start date Success (N/P) Completion (N/P)	Retention: delivery mode; students' age	USA	5 primarily onground community colleges, 5 primarily onground universities, and 4 primarily online institutions, USA	Online f2f	Universities

Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Heald (2018)	Fully online undergraduate students (N=420)	To explore whether synchronous student support sessions impact student retention in an online early childhood education course	Retention	Factors Intervention	Quantitative	Ex post facto comparative statistical analysis	Academic database	Implementing synchronous student support sessions did not significantly impact student retention	Instructors need to provide targeted and differentiated support, and offer guidance through feedback Provide synchronous virtual support sessions and provide training for faculty
Heidrich, Victória Barbosa, Cambuzzi, Rigo, Martins, & dos Santos (2018)	Online undergraduate students (N=202)	To explore empirically the potential usage of learning style in order to diagnose dropout in online courses	Dropout	Factors Instrument	Quantitative	Survey	Survey Academic database	Sequential/Global learning style dimension is more capable of explaining dropout than the other dimensions	N/P
Hilton III, Fischer, Wiley, & William (2016)	Undergraduate students (N=30,000)	To expand on the research done by Wiley et al. (2016) and examine course throughput rates across the four semesters of the pilot program at Tidewater Community College	Throughput	Factors Mode of delivery (f2f or online/hybrid)	Quantitative	Case study	Academic database	Students who use OER perform significantly better on the course throughput rate than their peers who use traditional textbooks, in both face-to-face and online courses that use OER	OER are a promising avenue for reducing the costs of higher education without compromising academic success
Huggins (2016)	At-risk online adult learners (N=10)	To explore what barriers and supports exist in the online environment of at-risk online learners	Attrition Persistence	Factors	Qualitative	Phenomenological	Interviews	Supports (to persistence): flexibility, technology, Accessibility Services, family, peers, content delivery and instructors Barriers: technology, lack of instructor interaction and presence, accessibility services, content, and content delivery	Several, including enhanced training for instructors, hiring and retaining quality instructional designers, mandatory student orientation courses, community support, multi-modal delivery of content
Huntington-Klein, Cowan, & Goldhaber (2017)	Online and f2f higher education students (N=1,203,254)	To estimate the effect of taking an online course, rather than a f2f version of the same course, on the probability of taking a follow-up course in the same field and on the probability of graduating	Persistence	Factors	Quantitative	Quasi-experimental	Academic database	Taking an online course has a negative effect on the probability of taking another course in the same field and on the probability of earning a degree Older students, women, Whites, the English-proficient, the fulltime employed, those with higher levels of academic aptitude, and the economically disadvantaged are more likely than others to graduate	Implementation of online courses should be done carefully
Inkelaar & Simpson (2015)	First year undergraduate online students (N=3,374)	To see if an inexpensive intervention [motivational emails] might reduce the distance education deficit [difference between graduation rates in conventional and distance education institutions]	Retention	Intervention	Quantitative	Experimental	Academic database	Graduation rates for f2f and online International Programmes were 61.5 and 15.7%, respectively Proactive motivational support in the form of 'motivational emails' found an increase in retention of 2.3%	Use of 'proactive motivational support' through messages delivered through email Motivational emails could be made more effective through the use of interactivity, nudging and priming; and also via Twitter and SMS Combine proactive motivational activities with more personal and individual support
James, Swan, & Daston (2016)	Undergraduate students (N=656,258)	To compare effects of delivery mode (solely online, solely onground, or blended courses) on retention and completion	Retention	Measure Factors	Quantitative	Statistical analysis	Academic database	No differences in retention between delivery mode groups were found in onground universities Older online students had higher retention rates	N/P

Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Johnson, A. B. (2017)	2017	N/P	Doctoral dissertation	Perseverance: "a student's ability to remain focused and engaged in work despite distractions, setbacks, or obstacles" (Nagaoka et al., 2013, p. 47)" Completion (N/P)	Persistence: delayed college enrollment, no high school diploma, part-time college enrollment, financially independent, have dependents, single parent status, and full-time work while in college (Molina & Morse, 2015) Mentioned other attrition models (e.g. Bean and Metzner, 1985)	USA	Fully online courses, military installation and Drexel University (USA)	Fully online	Courses
Johnson, C. (2015)	2015	N/P	Doctoral dissertation	Persistence: advancement from the first year of registration until completion without a continued break in enrollment (Barnett, 2011) Attrition: decrease in volume of learners stemming from reductions in student retention (NCES, 2008) Retention: used Tinto's (1975) definition	Persistence factors: dissertation preparation, program culture, individual factors, and faculty-student relations. Greatest stressor: time	USA	Online doctoral programs, private online university (Walden University), Minneapolis (USA)	Online	Phd programs
Kilburn, Kilburn, & Cates (2014)	2014	N/P	Peer-reviewed article	Retention (N/P)	Retention: system availability, privacy, perceived value and loyalty	USA	Blended, undergraduate or Master's degrees, "brick-and-click" university (USA)	Blended	Programs Masters programs
Knestrick, Wilkinson, Pellathy, Lange-Kessler, Katz, & Compton (2016)	2016	Attrition, graduate nursing programs, nursing education, online distance education, nurse practitioner programs, retention	Peer-reviewed article	Retention: "continued enrollment in an online program from admission through program completion" Attrition: "leave of absence or withdrawal"	Attrition: student factors (educational preparation, motivational and persistence attributes, and student academic self-concept); situational factors (family and employer support and changes in life circumstances); educational system factors (quality and difficulty of instructional materials and provision of tutorial support)	USA	Hybrid, online nurse practitioner programs, large mid-Atlantic university (USA)	Hybrid	Programs
Laing & Laing (2015)	2015	Online education; attrition; social presence; alienation; engagement; learning communities	Peer-reviewed article	Attrition (N/P)	Attrition: physical separation, reducing the sense of community, feelings of alienation, isolation and lack of personal attention Mentions Tinto's model	N/AP	Online higher education	Online	OHE

Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Johnson, A. B. (2017)	Active duty soldiers who were enrolled in or had recently completed an online learning program (N=8)	To identify the factors that affect the academic perseverance of active duty soldiers who were enrolled in or had recently completed an online learning program	Perseverance	Factors	Qualitative	Phenomenological case study design	Semi-structured interviews Scale (Short Grit Scale)	(1) military-connected students may experience time management, inter-role conflicts between work, family, and school that could affect their academic perseverance in online learning programs; (2) military resources and incentives for higher education reported may positively affect academic perseverance; (3) military service obligations reported may negatively affect perseverance; (4) educational experiences in childhood and personal factors in adulthood may affect academic perseverance; (5) grit impact factors may influence military-connected students' work ethic and level of achievement in online learning programs	Several recommendations: e.g. conduct periodic survey evaluations of students and distribute findings to faculty; develop training seminars for faculty regarding the differences between military-connected students and traditional students; develop flexible policies (e.g. delay course assignments, extend deadlines) for students
Johnson, C. (2015)	Online doctoral students (N=31)	To identify students persistence factors and perceptions of program completion	Persistence	Factors Instrument Intervention	Mixed	Convergent	Scale (Doctoral Completion and Persistence) Interview	All persistence factors were found to be important.	Developed a professional development project to increase persistence.
Kilburn, Kilburn, & Cates (2014)	Students taking at least one online course (N=136)	To examine perceived value (system availability and privacy) as a determinant of loyalty and student retention	Retention	Factors	Quantitative	Survey	Self-report online survey	Student perception of privacy has a non-significant linkage to perceived value Students may not be overly concerned with online privacy when assessing the value of their online higher education program. Significant linkages were found from system availability as a determinant of perceived value, as well as from perceived value and the students' resulting loyalty	N/P
Knestrick, Wilkinson, Pellathy, Lange-Kessler, Katz, & Compton (2016)	First year online nurse practitioner students (N=847)	To examine the student factors (undergraduate GPA, science GPA, number of science credits, and statistics credits), situational factors (age), and educational system (full-time vs part-time status) as predictors of attrition based on W (which might be voluntary or involuntary) and LOA rates within the first 2 terms of program entry	Attrition Attrition Retention	Factors Models Factors	Quantitative	Descriptive, statistical	Academic database	Developed an attrition predictor model. Attrition can be predicted with good accuracy on the basis of relatively few predictor variables (undergraduate GPA, specialty program, full- or part-time status in the previous term, and student age)	Identification of predictor variables early in the program
Laing & Laing (2015)	N/AP	To develop a conceptual framework that considers the role that the sense of isolation and alienation play in contributing to attrition in online courses in the higher education sector	Attrition	Models	Theoretical (non-empirical)	N/AP	N/AP	Conceptual framework for attrition - based on a social constructivist perspective, focusing on sense of isolation and alienation as main factors; and emphasizing learning communities, social interaction and presence, course design, orientation and socialization to enhance student retention and satisfaction	Create social relationships which assist in the development of a strong sense of online community Inclusion of a socialization period in the design of an online course Develop learning community through teacher actively engaging in the development of social presence



Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Lakhal & Bazinet (2015)	2015	N/P	Conference presentation	Dropout (N/P) Persistence (N/P)	Dropout: student factors, course and program factors, social presence factors and environmental factors; technological factors Mentions many models (e.g. Kember, 1989; Park, 2007; Rovai, 2003)	N/AP	Online higher education	Online	OHE
Lee, Lee, & Kim (2018)	2018	On-line education; rigid contents quality; flexible contents quality; learner satisfaction; learner retention; instructor involvement	Peer-reviewed article	Retention (N/P)	Retention: instructor role Information System success model for e-learning (system quality, content quality, test quality, activity quality, and instructor involvement affect learner satisfaction and retention)	KOREA	Blended, prep-course for a Hospitality and Tourism major, K-University (Korea)	Blended	Course
Lehan, Hussey, & Shriner (2018)	2018	Distance education; online graduate students; learning center; academic coaching; persistence; retention	Peer-reviewed article	Persistence: "continued pursuit of a student in a degree program leading toward completion of the program and operationalized as remaining continuously active in the program for the 6- to 9-month (based on the date of the meeting with the academic coach) study period" Retention: N/P Dropout (from course): N/P	Persistence: academic coaching Discussed several other factors and the persistence model by Park and Choi (2009)	USA	Fully online. Graduate and undergraduate courses, Northcentral University (USA)	Fully online	Courses
Levy & Ramim (2017)	2017	Skills in e-learning courses, instructors' perspectives of students' skills, e-learning skills gap, benchmarking index for e-learning skills	Conference presentation	Persistence (N/P) Success: "complete the e-learning course with good grade"	Persistence: students' skills (learning, independent, and research skills)	USA, EUROPE, ISRAEL	Online Engineering and Computing Courses (USA, Europe, Israel)	Online	Courses
Lim (2016)	2016	Completion; delay; online learning; procrastination; retention; self-paced	Peer-reviewed article	Withdrawal: "when a student specifically requested to withdraw from the course" Retention (N/P)	Withdrawal: academic procrastination and delay patterns (self-regulation)	USA	Mixed. Self-paced online courses, online and on-campus undergraduate degrees, four private religious universities (USA)	Online f2f	Courses

Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Lakhal & Bazinet (2015)	Empirical papers in peer-reviewed journals (N=15)	To contribute toward filling a knowledge gap by reviewing papers on technological factors that could explain academic student persistence in higher education	Dropout	Literature review Factors	Theoretical (non-empirical)	Literature review	Literature	Very few studies considered technological factors as a determinant of persistence Technology-related variables and computer self-efficacy were significant in predicting persistence Anxiety about using technology and access to technology were not significant	N/P
Lee, Lee, & Kim (2018)	Undergraduate online students (N=204)	(1) to investigate the impacts of success factors (rigid and flexible contents qualities) on learner satisfaction; (2) to identify the moderating effect of instructor involvement in these relationships; (3) to assess the influence of learner satisfaction on learner retention	Retention	Factors	Quantitative	Survey	Questionnaire	Instructor involvement had a moderating effect on flexible contents qualities (test and activity); further, the moderating effect of instructor is captured as high involvement in tests and low involvement in activities. Confirmed the relationship between learning-environment qualities, learner satisfaction, and instructor involvement. Learner satisfaction was found to be a strong predictor of learner retention	Cooperative engagement and proper collaboration of the two agents of teaching—technology and instructor. The system developer's invisible role in dealing the hybrid contents should be seriously considered for improving the learning environment's qualities, especially in designing rigid contents
Lehan, Hussey, & Shriner (2018)	Fully online graduate students (mostly doctoral students) who received coaching (N=160) and who did not (N=160)	To investigate the relationship between the receipt of academic coaching at an online learning center and persistence 6 to 9 months later in online graduate students	Persistence	Factors	Quantitative	Causal-comparative	Academic database	Visiting the learning center increased the odds of persistence 2.66 times GPA and months since enrolment were consistently associated with persistence	Development of manualized approaches to academic coaching Track the reasons why students seek academic coaching (at both the content and the process levels) and address them early and often
Levy & Ramim (2017)	Online instructors (N=46)	To develop a hierarchical E-Learning Skills Index (ELSI) to measure instructors' identified skills that students should have in order to become successful	Persistence	Factors	Quantitative	Survey	Survey	Developing a E-Learning Skills Index Within the first category of Learning Skills, knowledge acquisition was reported to be the most important skill, while notes taking was the least important. In the category of Independent Skills, critical thinking was reported to be the most important, and socialization with other students the least important The third category of Research Skills, had relatively equal distribution among four out of the five skills, which included information gathering, information aggregation, academic writing, and information processing/analysis	Finding that skill gap between what instructors expect students to have and what they report that their students demonstrate, compared with what skills students indicate they should have, and what they indicate they have in e-learning courses appear to be critically important, as it can help ensuring that students finish courses successfully
Lim (2016)	Students enrolled in various online courses (N=214)	To examine procrastination and delay patterns and correlation with grades and completion	Withdrawal	Factors Measures	Quantitative	Correlational analysis	Academic database	Average length of time between assignment submissions predicts final letter grade and withdrawal.	Students' consistency and regular work on a self-paced class may be the best strategy for success. Institutions should implement strategies to teach students self-regulating behaviors



Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Lowe-Madkins (2016)	2016	N/P	Doctoral dissertation	Retention (N/P) Dropout (N/P)	Retention: social presence and sense of community Discusses several retention/attrition models (e.g. Bean, 1990; Tinto, 1997)	USA	6 online undergraduate courses, consortium of 7 community colleges in Chicago (USA)	Online	Courses
Lucey (2018)	2018	N/P	Doctoral dissertation	Persistence: "[R]elates to the act of continuing toward an educational goal" (Martinez, 2003, p. 3)" Attrition: "[R]efers to a decrease in the number of learners or students engaged in some course of study. This course of study might be a degree plan, or it might simply be a standalone online course. Attrition takes place when a learner leaves the course of study, for any reason" (Martinez, 2003, p. 2-3)" Retention: "[R]efers to the number of learners or students who progress from one part of an educational program to the next. In higher education, this is normally measured as enrollment from academic year to academic year" (Martinez, 2003, p. 3)"	Persistence: motivation Discusses several models (Tinto, 1975; Bean & Metzner, 1985; Kember, 1989; Rovai, 2003; Park, 2007)	USA	Online undergraduate courses, large public university in the Mid-Atlantic (USA)	Online	Courses
Macy (2015)	2015	N/P	Doctoral dissertation	Retention: "the student returning the next academic year for classes"	Retention: delivery mode; ACT score, first generation, gender, and GPA Discusses Tinto (1997) model	USA	Fully online and f2f courses, Psychology and Police programs, East Kentucky University (USA)	Fully online f2f	Courses
Mahmodi & Ebrahimzade (2015)	2015	E-learning; instructional interaction; synchronous communication; asynchronous communication; persistence	Peer-reviewed article	Persistence: "students' commitment to a specific institution, completing the online training courses" Dropout (of courses) (N/P)	Dropout: interaction with the instructor and other students, satisfaction with online courses; mentions model by Tinto (1987) Persistence: environment-related, learner-related and institution-related barriers	IRAN	Online undergraduate courses, three colleges (Iran)	Online	Courses

Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Lowe-Madkins (2016)	Students enrolled in online courses (N=33) Online faculty members (N=6)	To determine if the element of social presence in online learning has an impact on student satisfaction and retention	Retention	Factors	Mixed	Explanatory design	Survey Interview	Students, for the most part, were satisfied with their online learning experience. Faculty members noted that although online discussion was one form of connectivity, it was not enough to keep the students engaged; in addition to online discussions, the inclusion of online groups and synchronous sessions could increase social presence.	In order for faculty to reach the optimal level in online learning, resources must be available, which include faculty training, online resources for course delivery that promote social presence, and current technology that can support the bandwidth for online course delivery. Encourage critical thinking through feedback, encourage student engagement through course design and online advising/tutoring.
Lukey (2018)	Non-traditional adult students who completed (N=7) or dropped out (N=3) of online courses (N=10)	To investigate the role of motivation in the persistence of adults enrolled in online higher education	Persistence	Factors	Qualitative	Phenomenological	Open-ended, in-depth interviews	Motivation was a critical component in the persistence of adult online learners. A number of factors were identified as key facilitators to persistence: course-related factors (relevance, flexibility and applicability), instructor-related factors (feedback, quality), and student-related factors (interest in course topic, commitment to completion, extrinsic motivation, economic factors). Barriers to persistence: course-related (lack of interaction, workload, misfit between class and learning style), instructor-related (communication), student-related (time management).	Give thoughtful consideration to student motivation and place it at the forefront throughout the design and delivery phases of online courses, implementing a variety of motivational strategies.
Macy (2015)	Non-traditional students (N=8,154)	To examine the effects that web-based courses effect on retention of nontraditional students	Retention	Mode of delivery (online and f2f) Factors	Quantitative	Causal comparative	Academic database	Retention rates of students who participated in online courses were higher than their in-person counterparts; females had a higher rate of retention; average retention was 45%. Freshman had the lowest retention rates, whereas online juniors had the highest.	Freshmen should take smaller class loads Building learning communities through online tools
Mahmodi & Ebrahimzade (2015)	Persistent and non-persistent undergraduate e-students (N=744)	To examine the relationship between instructional interaction and student persistence and determine the barriers to persistence in e-learning	Persistence	Factors	Quantitative	Survey	Questionnaire	Confirmed the relationship between the instructors' and the students' application of two interaction methods including the discussion forum and email (asynchronous method), as well as the relationship between the frequency of instructional interaction and the student persistence in e-learning. Family and job commitments, loss of instructional motivation and economic problems constitute the most important barriers to the student persistence in e-learning.	Providing favorable condition in e-learning, facilitating online learning interactions

Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Marshall (2017)	2017	N/P	Doctoral dissertation	Retention: "number of online students who complete online classes (Bawa, 2016)" Success: "online learners who display persistence throughout their online course by completing assignments as described in the course syllabus (Burns, 2013)" Persistence: enrollment in at least 1 online class in subsequent semester	Retention/Persistence: online orientation; first-year experience	USA	Online courses, 2-year technical college in South Carolina (USA)	Online	Courses
Maye (2015)	2015	N/P	Doctoral dissertation	Dropout: N/P Attrition: "inability of the student to continue the course through the end of the academic term and occurs when students either informally or formally withdraw from the course (Angelino & Natvig, 2009)" Retention: "as defined by Fowler & Luna (2009), is the 'efforts and strategies used to anticipate and identify student needs' (para. 37)"	Dropout: technology challenges Also discusses success factors (development of a student-faculty relationship, applying real world applications)	USA	Online courses, large online university, Northeast (USA)	Online	Courses
McClelland (2014)	2014	Withdrawal, higher education, online study, situational, dispositional, institutional, technological, epistemological	Doctoral dissertation	Withdrawal: "requesting removal from the course of study prior to completion of the enrolment period, or not engaging in the course of study and being removed from it by the education institution" Persistence: "remaining, and engaged, in the course of study to completion of the enrolment period"	Persistence/Withdrawal: review of literature and construction of model on withdrawal factors (situational, dispositional, institutional, epistemological, and technological factors)	AUS NZ	Fully online, foundation level programs, SIT2LRN, Southern Institute of Technology (New Zealand)	Fully online	Programs
Miner (2014)	2014	N/P	Doctoral dissertation	Retention (N/P)	Retention: Quality Matters certificate; Community of Inquiry factors (social presence, cognitive presence, and teaching presence)	USA	Fully online, 35 certified online courses, Florida International University Online (USA)	Fully online	Courses
Mitchell (2015)	2015	N/P	Doctoral dissertation	Persistence: "intentions to register for the following semester"; "the rate students at a postsecondary institution plan to continue their studies at a postsecondary institution (Tinto, 2012a)"	Persistence: sense of community Discusses other factors: GPA, gender, hours enrolled, social presence, etc.	USA	Online undergraduate courses. Mostly on-campus, large community college (USA)	Online	Courses

Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Marshall (2017)	First-time online undergraduate students (N=433)	To determine if there are significant differences in retention, academic success, and persistence between first time online students who have participated in an online orientation and those who did not participate and if there was a significant difference in retention, academic success, and persistence by gender	Persistence Retention	Factors	Quantitative	Statistical analysis	Academic database (online orientation session)	High level of statistical significance in male and female first-time online students with academic success as well as overall persistence in students who successfully completed online orientation with a grade of 80 or better No difference was found regarding gender	New online students participate in online orientation prior to the start of online class Online students who have taken at least one online course and whose final grade was below a grade of "C" should participate in online orientation prior to the start of online classes Online orientation should be customized based on the college's population of online students
Maye (2015)	First-time non-traditional online undergraduate students who dropped out of their courses due to technology challenges (N=7)	To explore how undergraduate students' specific technology challenges led to their decision to drop out of their online course	Dropout	Factors	Qualitative	Multiple case study	Open-ended interviews	Online undergraduate students have technology challenges in online learning environments thus leading them to course drop out. Technology challenges were attributed to lack of training, instructor involvement, and access to updated technology	Institutions need to provide sufficient training for students and faculty to learn technology tools Students and faculty need effective guidance and technical support to optimize their use of technology tools and be comfortable using them
McClelland (2014)	Non-traditional, withdrawn online students (N=117)	To investigate the influence of situational, dispositional, institutional, technological, and epistemological factors on student withdrawal	Withdrawal	Factors Models	Quantitative	Descriptive cross-sectional design	Survey	Neither technological nor epistemological factors influenced the withdrawal decision 47% of respondents identifying a dispositional factor as the main reason for their withdrawal; time management was the main one, together with managing conflicting commitments Institutional factors included poor communication	Working with facilitators and course designers to improve communication pathways and connection, or engagement, opportunities within courses Provision of time management tips and techniques, or consideration of assignment timing by an institution
Miner (2014)	Online undergraduate students (N=49)	To determine if implementing Quality Matters in an online course leads to improved student satisfaction, an indirect measure of effective learning	Retention	Factors	Quantitative	Survey	Questionnaire (Community of Inquiry) Academic database	No significant differences were found in student satisfaction, grades, or retention between before and after QM certified online courses student success measures such as satisfaction, grades or retention may not be predicated on Quality Matters certification of online courses, the Community of Inquiry framework may not be an adequate tool to measure the effect of Quality Matters certification on student satisfaction, and factors impacting student success are much too varied and complex to use one instrument to ascertain an effect	More support in the form of instructional design, course development, and teaching assistance Quality Matters rubric, with its focus on design, and faculty peer-reviewers, with their professional experience, can provide guidance to accomplish changes
Mitchell (2015)	Students enrolled in at least one distance course (N=68)	To determine if a relationship exists between sense of community, course performance, and college persistence in distance learning courses at a community college, and which activities in these courses help contribute to sense of community	Persistence	Factors	Mixed	Correlational design	Survey including open-ended questions	Sense of community has an impact on course performance, but not on college persistence Student-instructor and student-student interactions are contributing factors that foster sense of community	Increase opportunities for interaction (through e.g. course design, instructor feedback and caring, synchronous sessions, group work, discussion boards) so as to increase sense of community Employ techniques for course design: chunking, discussion board creation and management, gradebook management, and open-access dialogue

Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Moore, C. & Greenland (2017)	2017	Student retention; policy; student drop-out; online learning; non-traditional students	Peer-reviewed article	Attrition (N/P) Retention (N/P) Dropout (N/P)	Dropout: time pressures; discusses several other factors in the literature	AUS	Open access online courses, Open Universities Australia (OUA) (Australia)	Online	Courses
Moore, D. (2014)	2014	N/P	Doctoral dissertation	Attrition: "student withdrawing from an institution of higher education or failing to re-enroll in the following term (Berger, Ramirez & Lyons, 2012)" Completion: "successful culmination of an educational program into graduation from an institution of higher education (Tinto, 2012)" Persistence: "continual participation of a student in an educational program within an institution of higher education (Berger, Ramirez & Lyons, 2012)" Retention: "ability of an institution of higher education to retain a student from admission through graduation (Berger, Ramirez & Lyons, 2012; Tinto, 2012)"	Attrition: cultural, learning style, and technological barriers Reviews literature on attrition factors	USA	Online undergraduate programs, brick-and-mortar college, New England College (USA)	Online	Programs
Murphy & Stewart (2017)	2017	On-campus, online, course, completion, repeating, policies	Peer-reviewed article	Completion (of course) (N/P) Withdrawal (of course) (N/P)	Discusses several student characteristics associated with completion/withdrawal	USA	Blended (hybrid) learning. Blended physics (STEM) course, on-campus research university (USA)	Blended	Course
Nadasen (2016)	2016	Higher education, online learning, innovation, retention, course success	Doctoral dissertation	Retention: "can refer to retention of a student within a course until completion of the course, or it can reflect student persistence over several semesters" Success: different definitions - at the institutional level (retention and graduation rates), at the program level (retention and program completion), and at the course level (completion of courses) Completion: finishing a course Attrition: "the opposite of retention, referring to the loss of students from an academic program in which they were enrolled"	Retention: innovations, faculty interaction and student engagement Reviews 3 models on retention, attrition, and persistence (Tinto, 1975; Bean & Metzner, 1985; Rovai, 2003)	N/AP	Online higher education	Online	OHE
Nuesell (2016)	2016	N/P	Doctoral dissertation	Attrition: "When a student discontinues enrollment at a postsecondary institution and fails to reenroll in subsequent consecutive semesters (Seidman, 2005)" Completion: "earned degree within the six-year period of the study" Persistence: "student who is able to remain enrolled or completes an academic course of study despite obstacles or adverse circumstances (Hart, 2012)" Dropout: student "did not successfully graduate or remain enrolled within the six-year period of the study" Stopout: "leaving an institution for any period of time and returning prior to the six-year period of the study"	Persistence: mode of delivery (enrollment in online courses); online programming Discussed Tinto's, Bean & Metzner, and Kember's models	USA	Postsecondary education institutions (N=1,360) (USA)	Online f2f	Universities

Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Moore, C. & Greenland (2017)	Online student dropouts (N=226)	To identify the main driver of online student attrition in an Australian open-access education context (phase 1); to evaluate institutional programme protocol to assess the extent to which related policies accommodate the main attrition driver (phase 2); to expose policy dimensions that do not match online student needs and to then recommend modifications for improving study flexibility and retention	Dropout	Factors	Qualitative	N/P	In-depth interviews (phase 1) Institutional data (phase 2)	Employment (work commitments) accounted for 35.8% of drop-outs and was by far the most frequently given main reason, followed by enrolment related factors and family commitments, health, and study time management The main consequence was that these working students were unable to complete their assignments on time and/or sit the exam, eventually failing to return and complete their studies Half of OUA providers' assessment policies acknowledged employment issues as extenuating circumstances (grounds for granting assignment extensions and concessions)	Adjust online assessment policies and make them more flexible to accommodate students' employment challenges Design assessments that align more closely with workplace challenges, providing greater choice of assessment options, and offering flexible assignment submission deadlines Communicate to students exactly what, if any, flexibility is offered in relation to their employment
Moore, D. (2014)	African-American online dropout students (N=6)	To identify any existing barriers to program completion among the African-American student population	Attrition	Factors	Qualitative	Phenomenological	Semi-structured interviews	Four main reasons for dropping out: (a) lack of integration/interaction; (b) personal issues; (c) discomfort with technology; and (d) age	(a) inclusive course development (employ collaborative learning, synchronous learning, and social connectivity); (b) faculty training (in synchronous learning tools and value of social connectivity); and (c) student support (as technology assistance, psychology counseling, and social groups - create opportunities to socialize)
Murphy & Stewart (2017)	On-campus undergrad students (N=3032) Undergrad students enrolled in hybrid course (N=940)	To compare data for on-campus and online course completion and withdrawal patterns; to profile student characteristics associated with completion and withdrawal	Completion Withdrawal	Measures Factors	Quantitative	Survey	Survey Academic database	Online students were less successful (11%) and withdrew more, especially repeating students	Early instructional interventions; online reenrollment restriction for repeat enrolment students
Nadasen (2016)	Evidence-based articles (N=23)	To examine the nature and extent of the relationship between innovations (incremental and disruptive) and factors associated with student success (faculty interaction and student engagement) in online learning	Retention Success	Literature review Factors	Mixed	Systematic review (Evidence-based research synthesis)	Literature (evidence-based)	Created an integrated student success model Incremental innovations showed positive results towards student success in 74% of the cases. There were too few studies on disruptive innovations (18%) to draw conclusions, and these studies showed mixed results institution-level innovations and student engagement were found to be the most effective and directly linked to student success Disruptive innovations may require a greater investment of time and resources in order to be successful. Many institutions that used a comprehensive approach to student success saw an increase in course success or retention.	Several recommendations re. innovations and success: Define desired outcomes of innovations; Evaluate existing innovations in the field to determine their effectiveness Determine all areas of student success that need to be targeted and identify strategies to address all areas Establish goals and resources Develop a plan with a solid research design and measurable outcomes Evaluate outcomes.
Nuesell (2016)	Online and on-campus non-traditional (N=2,043) and traditional (N=3,746) students (N=5,789)	To determine whether enrollment in online courses had an impact on degree attainment and persistence for nontraditional students	Completion Persistence	Mode of delivery Factors	Quantitative	Statistical (non-experimental)	Governmental data	The composite nontraditional student group who attempted to complete all courses through online education was less likely to persist or attain a degree Moderately nontraditional students had a higher probability of persisting or attaining a degree when enrolled in a limited number of online courses	Understand the diversity of the nontraditional population and the potential role (based on sharing evidenced-based research) of online programming in their educational attainment Focus on analysis of student demographic data prior to enrollment, and use this data for the student advising process Regular and ongoing training and support in technology and instructional methods Develop policies and practices that are responsive to the varying nontraditional virtual student



Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Pattison (2017)	2017	Social presence, asynchronous learning, Community of Inquiry, online learning, online education, educational technology, distance learning, computer-mediated learning, instructional technology	Doctoral dissertation	Persistence: "students who are still enrolled at the end date of a course, and have not been dropped from the course due to lack of attendance or have requested to be dropped from the course" Success: "achievement [i.e., academic performance], satisfaction, and persistence"	Persistence: faculty social presence	USA	Online graduate education course, midsized southwestern university (USA)	Online	Course
Pinchbeck & Heaney (2017)	2017	Distance learning; student retention; student success; resubmission	Peer-reviewed article	Retention (N/P) Dropout (N/P)	Retention: resubmission (for students who fail a module)	UK	Fully online, level 1 sport and fitness module, UK Open University (UK)	Fully online	Course
Poll, Widen, & Weller (2014)	2014	Online education, online retention, online engagement, best practices for online instruction	Peer-reviewed article	Retention (N/P): "There is no consensus on how to define retention"	Retention: engagement; mentions several factors and models (Tinto, 1975, 1993; Braxton, 2000; Angelino & Natvig, 2009)	N/AP	Online higher education	Online	OHE
Rashid, Jahan, Islam, & Ratna (2015)	2015	DCSA Program; dropout trend; Push-Pull Theory, intrinsic and extrinsic factors, and ODL	Peer-reviewed article	Dropout (N/P) Completion (of program) (N/P)	N/P	BANGL	Fully online, Computer Science Application program, Bangladesh Open University (Bangladesh)	Fully online	Program
Robichaud (2016)	2016	N/P	Peer-reviewed article	Retention (N/P) Attrition (N/P)	Retention: orientation programs (and others) Attrition: mentions many factors, e.g. misconception about time commitment involved in online learning, difficulty of the courses, work and family commitments, unpreparedness; and models (Tinto's, Bean & Metzner's, Rovai's, Lee & Choi's)	N/AP	Online courses, community colleges	Online	Courses

Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Pattison (2017)	Faculty members and their classrooms (N=20) Online graduate students (N=600)	To investigate to what extent the social presence of online faculty was related to graduate students' academic performance, satisfaction, and persistence in the course	Persistence Success	Factors	Quantitative	Correlational	Academic database Online discussion forums	No statistically significant bivariate correlations between the nine social presence variables and each of the three student success variables The only strategy that has the potential to significantly improve all three measures of student success may be the use of allusions to the group or classroom Certain aspects of faculty social presence (addressing student by name) may be associated with lower student performance	Several social presence instructional strategies: training online faculty and service staff in the use of social presence and its eight cues; using social media; making personal calls to students; using digital stories and music. Instructors and course designers should employ Classroom Assessment Techniques (CATs) to gauge learning and promote student engagement; equalize instructor involvement; create incentives for students to participate in threaded discussions; use a variety of discussion prompts; and provide well-structured small-group assignments that require teamwork to complete
Pinchbeck & Heaney (2017)	Online students who failed to pass the end of module assessment (N=65) Tutor who implemented the intervention (N=1)	To investigate the value of implementing a resubmission intervention to improve the quantity and quality of student resubmissions on a level 1 distance learning module.	Retention	Factors Intervention	Quantitative	Case study	Academic database Online forum	Resubmission and pass rates (retention) were higher where the intervention was used suggesting that a resubmission intervention can increase the quality and quantity of submissions	Proactive support can provide benefits for level 1 resubmission students in an open distance learning environment
Poll, Widen, & Weller (2014)	N/AP	To review the literature on higher education retention and some best practices related to online teaching and learning	Retention	Best practices Literature review	Theoretical (non-empirical)	N/AP	N/P	Strategies provided for both synchronous and asynchronous formats: 1. Build eCommunity 2. Clarify online course expectations and objectives 3. Identify and employ the best online tools for interaction 4. Promote the exchange of ideas and information in the online classroom 5. Provide timely, relevant, and actionable feedback 6. Create a student-centered environment	Student-to-student interaction and faculty-to-student interaction are essential in an online course and should be facilitated through the strategies provided [in Findings]
Rashid, Jahan, Islam, & Ratna (2015)	Online program students (N=90)	To explore the underlying factors of enrollment, completion and dropout in the DCSA program and to provide some guidelines for improvement	Dropout Completion	Factors Measures	Mixed	Descriptive, evaluative	In-depth interviews Academic database	Students' enrollment and completion trends are not satisfactory level (24.63% program completion rate). Dropout factors identified are mostly extrinsic or institution related (support service and program); intrinsic personal factors (work load, financial constraints) also appeared. The factors that need to improve are current instructional strategy, timely delivery of learning materials and course related information	Several recommendations, e.g.: Strong and cooperative student-support services Program materials should be delivered at the beginning of the program Laboratory facilities, number and duration of practical classes, and tutorial sessions should be increased Improve direct interaction between BOU faculties Appoint skilled teachers as tutors Strong coordination between BOU academics, tutors and administrative staff
Robichaud (2016)	N/AP	N/P	Retention	Intervention	Theoretical (non-empirical)	N/AP	N/AP	[see Strategies]	Provides several strategies from the literature (orientation, providing academic advising throughout the semester, offering computer training, etc.) Orientation should include several of these strategies Proposes orientation model based on Roval's (2003) persistence model, involving actively trying to prepare students for the unique nature of online learning, orienting students to the LMS, and giving students an adequate idea of the expectations



Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Rockinson-Szapkiw, Spaulding, & Spaulding (2016)	2016	Doctoral persistence, online, social integration, academic integration, faculty	Peer-reviewed article	Dropout/Attrition: withdrawal from program enrollment after the first 2 semesters of candidacy Persistence: enrollment and completion of the dissertation proposal course for two semesters following the dissertation prospectus class	Online doctoral persistence quantitative model with institutional (financial support; program, curriculum, and instruction; and support services) and integration variables (academic, social, economic, and familial integration), excluded personal variables	USA	Online/hybrid Doctor of Education program, southern university (USA)	Online hybrid	PhD program
Rodríguez-Ardura & Meseguer-Artola (2016a)	2016	Interactivity, imagery, flow, spatial presence, co-presence	Peer-reviewed article	E-learning continuance: enrolling in at least one course at the university in the next period	Continuance: interactivity, imagery, presence and flow	SPAIN	Fully online, undergraduate and post-graduate university programmes, Open University of Catalunya (Spain)	Fully online	Programs Masters programs
Rodríguez-Ardura & Meseguer-Artola (2016b)	2016	E-learning; higher education; flow; presence; didactic resource; instructor attitude	Peer-reviewed article	Continuance (N/P) Retention (N/P)	Continuance: presence and flow, perceptions about didactic resource quality and instructor attitude Reviews other models of e-learning continuance intention (Chiu & Wang, 2008; Joo et al., 2011; Lee, 2010; Lin, 2011; Roca & Gagné, 2008)	SPAIN	Fully online, undergraduate and post-graduate university programmes, Open University of Catalunya (Spain)	Fully online	Programs Masters programs
Russo-Gleicher (2014)	2014	N/P	Peer-reviewed article	Attrition: "when a learner leaves the course of study for any reason (Martinez, 2003)" Persistence: "the act of continuing toward an educational goal (Martinez, 2003)" Retention: N/P	N/P	USA	Online courses, large community college in the Northeast (USA)	Online	Courses

Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Rockinson-Szapkiw, Spaulding, & Spaulding (2016)	Online Doctor of Education candidates (N=148)	To build a quantitative model to investigate how institutional factors and integration factors may predict online EdD student persistence during candidacy	Persistence	Models	Quantitative	Predictive, correlation design	Survey Academic database	Created a quantitative persistence model Model predicts persistence in the candidacy stage ( $p < .001$ ); all variables apart from social integration, financial support, and economic integration were significant predictors. No data on dropout rate.	Invest in support personnel and online resources, Community of Practice and social media pages; assign one mentor throughout the program; provide online family orientation
Rodríguez-Ardura & Meseguer-Artola (2016a)	Online undergraduate and postgraduate students (N=2,530)	To examine the influence of interactivity on affective and behavioural e-learners' responses. To analyse the interaction between underlying processes (imagery, spatial presence, co-presence, flow) unleashed by interactivity. To build a comprehensive conceptual model of the direct and indirect effects of interactivity, including actual continuance behaviour. To find empirical support for the causal paths in the model	Continuance	Factors Models	Quantitative	Survey	Questionnaire Academic database	Proposes and validates a model of the direct and indirect effects of interactivity on continuance Interactivity influences the e-learners' responses through the intervening effects of imagery, spatial and co-presence, and flow Imagery processes influence spatial and co-presence feelings, and flow Behavioural continuance intention is determined by both attitude and co-presence, and prompts actual e-learning continuance ( $\beta = .05, p = .00$ )	Ensure that didactic strategies and initiatives are offered with exceptional levels of interactivity from the e-learner's standpoint. By providing didactic content, educative resources and communication systems that are flexible and customisable, and which allow e-learners to manage their communications with peers and faculty, education institutions can enhance e-learners' sense of interactivity in the education environment. This, in turn, increases their willingness to continue with e-learning
Rodríguez-Ardura & Meseguer-Artola (2016b)	Online undergraduate and postgraduate students (N=2,530)	To examine the role of two central elements (didactic resource quality and instructor attitude) of the virtual education environment, presence feelings, and flow states in e-learning users' experiences, and their contribution to the formation of users' decisions to continue using an e-learning environment	Continuance	Factors Models	Quantitative	Survey	Survey Academic database	Proposes and validates a conceptual model of e-learning continuance intention Didactic resources and instructor attitudes indirectly impact on user's intention towards continued e-learning Perceived ease of use, perceived usefulness, and presence directly influence behavioural continuance intention	Instructors and staff responsible for designing and managing e-learning programmes should ensure that didactic resources and instructor attitudes are displayed with high levels of quality, from the user's perspective Stimulate a student-centred culture among instructors Kit out e-learning programmes with current, adapted content Provide a clear, comprehensible, flexible, and pertinent virtual education environment Increase users' interest in learning, and make available those elements that engage e-learners in tasks that let them enjoy the experience of learning Facilitate initiatives that enable users to feel they are in a true education
Russo-Gleicher (2014)	Online faculty (N=16)	To provide qualitative insights into addressing the issue of student retention in online classes in higher education	Retention	Recommendations	Qualitative	Grounded theory	Semi-structured, in-depth interviews	Participants discussed that student retention in online courses could be increased by making changes to the screening process for potential online students, improving the student orientation for online courses, the college administration providing additional support to faculty who do online teaching, and online faculty being more responsible to students	Administrators should be aware that changes made in any of these areas [see Findings] may improve student retention in online classes

Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Sánchez-Elvira Paniagua & Simpson (2018)	2018	Student support; distance learning; online learning; motivation; dropout; EMPOWER project	Peer-reviewed article	Dropout: (N/P) Success: (N/P)	Dropout: lack of student support Retention: "retention formula" (Seidman, 2015): $S = AC + Eid + (E + C) PaM$ , where S = success, AC = appropriate course choice, Eid = early identification of vulnerable students, (E + C) PaM = early and continuous proactive motivation support	N/AP	Open, online and blended-learning environments	Online blended	OHE
Sanz, Virseda, García, & Arias (2018)	2018	Blended learning, innovation, satisfaction, ICT	Peer-reviewed article	Dropout (of course or university) (N/P)	Dropout: full-time employment, family obligations, satisfaction	SPAIN	Blended, 2 Finance courses, Economics and Business Administration degree, National Distance University (UNED) (Spain)	Blended	Courses
Scharf (2015)	2015	N/P	Doctoral dissertation	Attrition: "the percentage of students who discontinue their present classroom course (Kyger, 2008)"	Attrition/Dropout: transactional distance. Reviews literature on dropout factors	USA	Mixed. 5 core courses of a postgraduate program, major national university (USA)	Online f2f	Masters program
Seabra, Henriques, Cardoso, Barros, & Goulão (2018)	2018	E-learning, permanence, higher education, sustainability education	Peer-reviewed article	Permanence: "students' continuing participation in a course until its completion" Dropout: "definitive desistence of a student at any stage of the course (Abbad et al. 2006)"	Permanence: Fiuza and Sarriera's (2013) classification of factors of permanence in higher education e-learning courses: (1) personal factors; (2) academic factors; and (3) contextual factors. Reviews several other permanence/dropout factors	PORT	Online, Education undergraduate degree, open public university, Universidade Aberta (UAb) (Portugal)	Online	Program

Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Sánchez-Elvira Paniagua & Simpson (2018)	N/AP	To summarise the work done in the EMPOWER Project to offer different tools and resources, and help institutions and academics in their understanding of what underlies student engagement and motivation versus student dropout	Dropout	Interventions Factors	Theoretical (non-empirical)	N/AP	N/AP	The article presents the EMPOWER project, concentrating on its support area. The project was elaborated by the European Association of Distance Teaching Universities (EADTU) - open universities in Europe and its experts, and offers numerous tools and expertise on student support so as to ameliorate dropout rates.	Course design: greater flexibility in both study materials and assessment Student support: academic (developing a student's cognitive and learning skills) and non-academic (developing a student's organisational and affective skills) Numerous strategies from EMPOWER Project, e.g. open and free webinars and videos; development of institutional support programmes for prospective and new students; use of learning analytics to improve student's performance; synchronous video-tutoring; optimisation of online students' information and orientation strategies, etc.
Sanz, Virseda, García, & Arias (2018)	Blended undergraduate students participating in a blended learning teaching experience (N=28)	To discuss the objectives, methodology and results of the "Red de Enriquecimiento metodológico y aprendizaje colaborativo en Finanzas" [network for methodological enhancement and collaborative learning in finance]	Dropout	Intervention	Quantitative	Survey	Survey Student self-assessments Academic database	Self-assessment and professor monitoring are key issues in students' initial perception and ultimate satisfaction as well as the most effective tools for preventing dropout. Project participants had a lower dropout rate and higher grades than non-participants (92.9 % of the participants took the final exam, compared to 54.7 % of course enrollees as a whole)	Visual thinking tools to reduce study times and improve performance should be explored and combined with social networking and the mobile apps Provide self-assessment, incentives, continuous professor monitoring, and streamed online tutorials
Scharf (2015)	Postgraduate students (N=60) who took virtual (N=30) or traditional classroom core classes (N=30)	To compare student outcomes (student performance, satisfaction, and attrition rates) from a synchronous live virtual classroom to outcomes from an equivalent traditional classroom	Attrition	Modes of delivery (traditional and online) Factors	Mixed	Quasi-experimental	Survey Academic database	No significant differences were found in student performance or attrition rate (which was low) There were some differences in student satisfaction of traditional classroom venue versus live virtual classroom (less satisfied), but that satisfaction is not translated into performance differences or differences in attrition rate	University should address the outcome of student satisfaction Measured program of improvements and implementation of technology add-ons Technical support must be broad-based
Seabra, Henriques, Cardoso, Barros, & Goulão (2018)	Non-traditional undergraduate students (N=78)	To present a framework of the concept of permanence in higher education, particularly in e-learning contexts and concerning adult populations; and an empirical research concerning the academic factors related to good permanence outcomes	Permanence	Factors Model	Mixed	Survey	Questionnaire	Flexibility was the main factor for permanence, followed by satisfaction, belonging, and perspectives for professional progression Barriers: time management and lack of fundamental knowledge	Flexibility concerning time and space of learning are key aspects to the students' choice of this modality and institution, and are therefore aspects to protect as much as possible More support from teachers Find alternative ways of increasing student participation and involvement Distance based initiatives, such as online meetings and small scale local initiatives

Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Shaw, Burrus, & Ferguson (2016)	2016	N/P	Peer-reviewed article	Attrition: (N/P) Dropout: (N/P) Retention: (N/P)	Retention: additional academic support; SmartMeasure factors (student self-motivation, time management skills, self-discipline, reading rates, reading recall, persistence, availability of time, ability to use technology tools, typing speed, and typing accuracy)	USA	Online, primarily graduate, institution (USA)	Online	Programs
Shea & Bidjerano (2014)	2014	Distance education, online learning, degree attainment, propensity score analysis	Peer-reviewed article	Completion: of degree (certificate, associate, or bachelor's) Dropout: (N/P)	Retention: uses model by Falcone (2011) and mentions other models (Tinto, 1998; Bean & Metzner, 1985)	USA	Mixed. Undergraduate programs, community colleges (USA)	Online f2f	Programs
Shea & Bidjerano (2016)	2016	N/P	Peer-reviewed article	Attainment/Completion: of degree (certificate, associate, or bachelor's)	Dropout: delayed enrollment, financial independence, work while enrolled, no high school diploma, part time enrollment, single parent status and no dependents	USA	Mixed, associate degrees, community colleges (USA)	Online f2f	Programs
Shea & Bidjerano (2018)	2018	N/P	Peer-reviewed article	Completion/Attainment: graduating (attaining an educational credential)	Completion: online course load and institutional quality	USA	Mixed. Associate degree programs, 30 community colleges of the State University of New York (USA)	Online f2f	Programs

Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Shaw, Burrus, & Ferguson (2016)	Online students enrolled in degree programs (N=2,400) At-risk students (N=N/P)	To examine predictors for online higher education student attrition To determine if additional academic support to at-risk students promoted retention	Attrition Retention	Factors Intervention	Quantitative	Statistical analysis Experimental	Test (SmarterMeasure Learning Readiness Indicator) Academic database	Verbal and physical learning styles and personal attributes such as procrastination, increase the likelihood for attrition, while clear reasons for pursuing a degree and typing skills decrease the likelihood for attrition The experimental group (which received an outreach and additional support) had an 11% greater level of retention than the control group The control group had more dropped courses, more failing grades and course withdrawals, and tended to have more students who were two or more assignments behind the course due dates. The experimental group showed greater persistence, fewer failing grades and course withdrawals, and submitted more on-time assignments	Several potential interventions, e.g.: Assist the student in specifying educational goals and the rationale for enrolling Provide resources for and remediation to students who do not possess fundamental readiness skills Develop a mentoring skill set to best support student progress A quality student-faculty relationship and healthy communication should be fostered provided with regular feedback
Shea & Bidjerano (2014)	First-year students enrolled in community colleges (N=4,600)	To determine whether US students enrolled in distance education courses during their first year of study at a community college tend to complete a degree (certificate, associate, or bachelor's) at significantly lower rates than those who were not enrolled in such courses or programs	Completion Persistence	Measures Mode of delivery (traditional or online) Models	Quantitative	Statistical	Governmental database	Presents a new model of persistence, including dimensions of technology-enabled institutional adaptation Students who take some of their early courses online or at a distance are somewhat less prepared but have a significantly better chance of attaining a community college credential than do their classroom-only counterparts Students online learning appears to represent a boost to degree completion	Ongoing investment in online learning Invest in technology enabled institutional adaptation
Shea & Bidjerano (2016)	Students enrolled in community colleges (N=4,400)	To examine national data on three outcomes (attainment of first associate degree, transfer, and dropout) for community college students with and without online education experiences	Completion Dropout	Mode of delivery (traditional or online) Measures	Quantitative	Descriptive statistical analysis	Governmental database	For both online and classroom-only students, the risk for transfer and dropping out outweigh the chances of degree attainment in the first two years. In year 3, the chances of attaining an associate degree and dropping out equalize for the online students but remain relatively low compared to the risk of dropping out. In the same year, the proportion of classroom-only students graduating is substantially lower than the proportions of transfers and dropouts. Chances for transfer declines in years 5 and 6 compared to chances of dropping out or attaining a degree Dropout rates in a 6-year period were 31.76% (students who took online courses) and 36.73% (students who didn't) Significantly more students	Continued investment in and experimentation with online education
Shea & Bidjerano (2018)	Community college students who registered in online coursework (n=45,557)	To investigate the "tipping point" at which the proportion of online course enrollment leads to impaired degree completion	Completion	Factors Mode of delivery (online or f2f)	Quantitative	Statistical	Academic database	Community college students who take more than 40% of their courses online begin to lose the benefits of enhanced degree completion conferred through a mix of online and face-to-face enrollment. Moderating variable: institution's overall graduation rate. Students who enrolled at more effective institutions with the highest graduation rates can mix up to 60% of online coursework with classroom study as opposed to the average of 40% at all institutions and only 10% at the least effective institutions	Most community college students should be advised to enroll in face-to-face courses primarily and supplement these courses with online courses at a ratio of three face-to-face courses to two online courses for full time students Students enrolled in institutions that are generally more effective in graduating students may be advised to take a higher ratio of online to classroom courses Students who qualify for remedial education need not be advised away from taking online courses

Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Shesky (2014)	2014	N/P	Doctoral dissertation	Retention: N/P Stop-out: temporary withdrawal from class attendance but returning to school within one year of the class attendance breach	Retention: demographic factors; reviews several theories Dropout: stop-out behavior	USA	Fully online Master's programs, fully online university (USA)	Fully online	Masters programs
Slade & Prinsloo (2015)	2015	Learning analytics, student support, retention, distance learning, curriculum support	Conference presentation	Retention (N/P) Attrition (N/P)	Retention: student support	UK	Fully online, UK Open University (UK)	Fully online	University
Snyder (2014)	2014	N/P	Doctoral dissertation	Persistence (N/P) Completion (N/P) Progressive student enrollment: "a student's continuous progress toward a degree or certificate, even if the student's education is temporarily interrupted" (Boston & Ice, 2011)	Retention: student engagement and support, course design, learning environment Reviewed literature on persistence and employed Tinto's student integration model and the community of inquiry (CoI) model (Garrison et al., 2000)	USA	Mixed, graduate programs, small rural community college (USA)	Online f2f	Programs
Sorensen & Donovan (2017)	2017	Online learning; higher education; for-profit colleges and universities; student retention; adult learners; undergraduate	Peer-reviewed article	Retention (N/P) Dropout (N/P)	Dropout: personal or family emergencies, needing a break from school, financial burdens from needing to retake course, changes in personal financial situation, and lack of internet access Reviews some other dropout factors	USA	Online. Undergraduate programs, College of Education, for-profit online university (USA)	Online	Programs



Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Shefsky (2014)	Online Master's students (N=5,993)	To learn about the associations, correlations, and impact personal student demographics have upon those who participated in stopping-out behavior To develop an online at-risk stop-out student profile or model	Retention Stop-out	Factors Models	Quantitative	Statistical (parametric)	Academic database	Development of a demographic characteristic at-risk student stop-out model Three demographic independent variables showed statistically significant associations and correlations with the attrition behavior of stopping-out: gender, program of study, and graduate status	N/P
Slade & Prinsloo (2015)	N/P	To describe work undertaken at the Open University in the UK to investigate how a learning analytics approach allows the University to provide timely and appropriate student support in a cost-effective manner	Retention	Interventions	Quantitative	Case study	N/P	Developed a Model for Integrated Learning and Learner Support (MILLS) employing Student Support Teams Developed a series of projects using learning analytics to review curriculum design and improve student retention (e.g. predictive modelling: for likelihood of progression or withdrawal; intervention and evaluation: to make and evaluate evidence-based interventions) No data on student retention provided	MILLS framework: 8 module (M) and 4 qualification (Q) focused Universal Interventions (e.g. " Post-registration, pre-module start", " Study Intentions"). Use learning analytics to target specific categories of students, changing a module or qualification's assessment strategy, etc. to assess Further staff development in learning analytics
Snyder (2014)	Students who had completed at least two online courses (N=10)	To explore students' perceptions of online learning at a small rural community college to understand what factors impacted their persistence in coursework	Persistence	Factors	Qualitative	Case study	Semi-structured interviews	Factors that contributed to online success: teaching, cognitive, and social presences; online course content and faculty interaction Factors that contributed to dis-enrollment or created significant challenges: not being aware of support services, online course design, lack of instructor's feedback	Incorporate the community of inquiry (CoI) model in curricular planning Implement a white paper project that will be disseminated to the campus community with the purpose of initiating a collaborative process to identify pedagogical practices and policy changes to improve retention rates
Sorensen & Donovan (2017)	Online undergraduate students who dropped out without providing a specific reason (N=396)	To provide further insight into why students may decide to drop out of online programs	Retention	Factors	Mixed	Non-experimental, exploratory	University database Online survey, interviews, and classroom walk-throughs	Main reasons for dropout (usually a combination of factors): too busy with work and/or family; lack of faculty support; difficult course material; financial reasons; lack of instructor interaction; Some students misjudge their ability to balance multiple priorities or are unaware of the time commitment needed; It cannot be assumed that students drop out of online for-profit universities because they struggle academically; The likelihood of students dropping out due to poor academic performance may be higher earlier in a program (i.e. took fewer courses). However, students who drop out further along in the program (i.e. took more courses) may drop out due to factors other than poor academic performance	Make sure college advisors have manageable student loads and are knowledgeable about all academic programs. Make sure instructors are not only content experts but have a passion for teaching and are student-centric. Offer additional time management and organization coaching for students with multiple priorities and/or create programs that allow for more flexible self-pacing Design retention interventions that address factors other than academic performance Ensure a higher level of support for students earlier in their programs and identify students at risk of dropping out early so intervention efforts can be put into place



Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Stoessel, Ihme, Barbarino, Fisseler, & Stürmer (2014)	2014	Diversity inclusion, higher education, attrition, sociodemographic groups, academic goals	Peer-reviewed article	Dropout (N/P) Attrition (N/P)	Dropout: being non-traditional, student membership in sociodemographic groups, goal orientations, and the corresponding interactions Also discusses students' predisposing characteristics, critical events, and institutional factors	GER	Blended, public distance university, FernUniversität (Germany)	Blended	University
Stone (2017)	2017	N/P	Governmental project report	Success (N/P) Retention (N/P) Persistence (N/P)	Attrition/Persistence: time factors; face-to-face teaching; technology difficulties; sense of isolation; and others	AUS UK	Hybrid and open universities. Largely online undergraduate education, 16 higher education institutions (15 in Australia plus the UK Open University (Australia and UK)	Fully online hybrid	Universities
Stone & O'Shea (2018)	2018	N/P	Peer-reviewed article	Persistence (N/P) Retention (N/P) Attrition: (N/P)	Attrition: being first-in-family student; being time-poor, female, and having multiple responsibilities	AUS UK	Online courses, universities in Australia and the OUUK (Australia and UK)	Online	Universities
Strebe (2016)	2016	N/P	Doctoral dissertation	Attrition: "reduction of learners at a college or university, due to the learners dropping out of courses or the degree program (Hart, 2012)" Completion: "completing the course with a letter grade of D or higher"; unsuccessful completion: "grade of F or drop/withdraw" Retention: "measurement of learner progress until the completion of a credential (Hongwei, 2015)"	Completion: 10 variables (college division, academic grade, semester, prior remediation courses, prior online courses, gender, financial assistance, hours attempted, GPA, and age) Literature review on success and retention	USA	Hybrid. Online courses, associate degree, technical diploma, and short-term certificate education, Niceville Technical College, Wisconsin (USA)	Hybrid	Courses

Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Stoessel, Ihme, Barbarino, Fisseler, & Stürmer (2014)	University graduates (n=1,872) and dropouts (n=2,727); (N = 4,599)	To investigate whether and to what extent nontraditional students are particularly at risk for attrition (vs. graduating) from distance education programs	Dropout	Factors	Quantitative	Survey	Cross-sectional institutional surveys	Higher risks to drop out from university for female, migrant, and fully-employed students, but lower risks for older and parent students. A higher importance of career development or personal development goals related to a lower risk for attrition. Among some student groups the likelihood to graduate (or to drop out) significantly depends on students' goal orientations	Establish formal or professional services (e.g., counseling or specific virtual support networks) to assist their students in coping with their group-specific challenges, e.g. peer-pairing programs in which students are matched to other students on the basis of their needs, interests or group memberships
Stone (2017)	Members of academic and professional staff (N=151)	To seek the combined wisdom of education practitioners, both academic and professional, about ways to improve outcomes for online undergraduate students	Retention	Factors Strategies	Qualitative	N/P	Interviews	1. A strategic whole-of-institution approach is required; it needs to include an institution-wide understanding of the nature and diversity of the online student cohort as well as the development and implementation of quality standards for online education, which undergo continuous quality improvement. 2. Early intervention with students to connect, prepare and engage is essential, particularly in terms of providing realistic expectations and encouraging and facilitating academic preparation. 3. 'Teacher-presence' plays a vital role in building a sense of belonging to the learning community and in improving student retention; however the time-consuming nature of developing and maintaining extensive networks of teachers	Development of a set of 10 National Guidelines for Improving Student Outcomes in Online Learning: 1. Know who the students are (online and on-campus cohorts) 2. Develop, implement and regularly review institution-wide quality standards for delivery of online education 3. Intervene early to address student expectations, build skills and engagement 4. Explicitly value and support the vital role of 'teacher-presence' 5. Design for online delivery 6. Engage and support through content and delivery 7. Build collaboration across campus to offer holistic, integrated and embedded
Stone & O'Shea (2018)	Study 1: staff members, 15 Australian universities, and OUUK (N=151) Study 2: Mature-age, first-in-family online students, Australian universities (N=75)	Study 1: To find out why individuals decided to enroll and how they managed the complexities of their life and study as online students Study 2: To explore how first-in-family learners transitioned into, and engaged with, the university environment	Persistence	Factors Recommendations	Qualitative	N/P	Interviews Survey	Factors that influenced persistence: understanding and valuing the nature of the online student cohort; communication and personal contact; designing and delivering for online; timely, proactive, embedded support	Series of strategies based on the factors found (buddy programs, volunteer peer mentor programs, link study to workplace) plus creating a sense of belonging
Strebe (2016)	Learners enrolled in online courses (N=13,199)	To test the empirical relationship between 11 variables (ten independent and one dependent) which are believed to relate to successful completion of online college courses	Completion	Factors	Quantitative	Statistical analysis	Academic database	College division: Health Care division had higher completion rates Academic grade: online freshmen are the group most unlikely to be successful Semester: fall was the semester when learners are most unlikely to successfully complete an online course Prior remediation courses: learners who did not take them were more likely to be successful Prior online courses: learners who had taken them were more likely to be successful in a future online course Gender: females were more likely to be successful Financial assistance: learners who did not receive it were more likely to be successful Hours attempted: successful learners enrolled in less credits	N/P

Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Struble (2014)	2014	Adult learner, online education, retention, hybrid, blended, social learning	Doctoral dissertation	Attrition: "a decrease in the number of students engaged in coursework. It is often used interchangeable with drop-rate (Ali & Leeds, 2009)" Dropout: "abandonment of a course of study or degree program" Persistence: "act of continuity in higher education, namely, on-time completion of degree (Martinez, 2003)" Retention: "number of students who progress from one semester of a college program to the next. This assumes the successful completion of the course (...)" (Ali & Leeds, 2009)"	Retention: mode of delivery (hybrid) Reviews and employs Tinto's models of attrition and retention	USA	Fully online or hybrid courses, undergraduate program, large non-profit southeastern university (USA)	Fully online hybrid	Courses
Sullivan (2016)	2016	N/P	Doctoral dissertation	Persistence: "number of days a withdrawn student remained in the course including the date of withdrawal"	Persistence: student readiness for e-learning and metacognition (learning management, time management, participation etc.) Reviews other persistence factors	USA	Blended entry-level course (Public Speaking), mid-sized southern university (USA)	Blended	Course
Sutton (2014)	2014	Higher education administration, online student retention, collaborative research, assessment strategies, doctoral student completion rates	Peer-reviewed article	Completion (N/P) Retention (N/P)	Completion: social integration, financial and employment status, sociocultural factors, assessment Retention: open enrollment	USA	Online doctoral program, online for-profit university (USA)	Online	PhD program
Swan (2016)	2016	N/P	Conference presentation	Withdrawal (from courses): (N/P) Completion: (N/P) Retention: (N/P)	Retention: delivery modes	USA	Online, onground, or blended courses, 14 Predictive Analytics Reporting (PAR) institutions (USA)	Online blended f2f	Courses

Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Struble (2014)	Adult online/hybrid undergraduate learners (N=34,368) Adult hybrid undergraduate learners (N=95)	To examine Tinto's (1975) model of retention theory in regards to social learning through hybrid coursework, comparing the participation of adult online learners who enrolled in an undergraduate blended online and on-campus hybrid course to those who solely took undergraduate online courses	Retention	Mode of delivery (online and hybrid) Measures	Quantitative	Causal-comparative design Correlational design	Academic database	Hybrid students retained at a higher percentage Fully online students retained at 49.3%; hybrid ones 77.9% No statistically significant relationship between the increased number of hybrid courses taken and student retention	Engage older online students in hybrid coursework as a means to enhance their confidence and involvement through social learning and reduce attrition Implement more hybrid courses, as enrollment in at least one hybrid course contributes to greater student retention
Sullivan (2016)	Young blended course students (N=64)	To identify a practical way of helping students with limited academic experience taking online courses stay on task, manage time effectively, and ultimately achieve early success in the e-learning environment	Persistence	Intervention	Quantitative	Posttest only control group design	Academic database Post-Reminder Questionnaire	No significant differences in participation, persistence, and performance in the groups receiving reminders (Email and Text) and the Control Group (no reminders) Most participants reported the reminders helped them in some way in the course	Instruction design: robust analysis of the content, context, and learners provides fundamental design information Get to know the learners and their traits Identify fresh, innovative strategies to engage younger, less experienced students in a way that is interesting and relevant for them Instructional support strategies should be designed to assist students in the most basic learning management skills considering time and task organization, prioritization, monitoring, and planning
Sutton (2014)	N/P	To share lessons learned regarding factors that significantly increased student online course completion rates at one online for-profit university	Retention	Factors Intervention	Qualitative	Developmental research design	Researcher's observations Review of courses	Administrative changes at the researcher's university led to retention efforts that have positively affected student retention Analytical writing assessments had predictive value for doctoral student retention Results of the implementation of the changes at university included a 39% increase in retention of first year doctoral candidates	Increasing interactivity and depth of discussion Using authentic assessments and provided insights into which factors course designers applied to online courses, including the encouragement of student voice and of their narratives
Swan (2016)	Undergraduate students (N=656,258)	To compare both course completion and retention among students enrolled in solely online, solely onground, or both online and onground courses (ever online) across five quite dissimilar primarily onground community colleges	Retention	Mode of delivery (online or onground or blended)	Quantitative	Statistical	Academic Database	Taking online courses does not necessarily negatively impact student success. Students taking some courses online and some onground progress more quickly and are retained at a slightly higher rate than students taking solely onground or solely onground courses Patterns of retention were the same regardless of gender or age Older community college students taking only online courses were retained at higher rates than younger students taking only online courses. Similarly, older students taking only online courses or taking some online and some onground courses at primarily online institutions were retained at higher rates than younger students in the same categories. No differential effects of delivery modes were found for any	Taking online courses is not harmful for most students, and may in fact be beneficial when online courses are blended with onground courses

Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Sweeney (2017)	2017	N/P	Doctoral dissertation	Completion (of degree): (N/P)	Completion: motivation, self-fulfillment, career advancement, knowledge, personal growth	USA	Fully online doctoral programs, fully online institutions (USA)	Fully online	PhD programs
Tan & Shao (2015)	2015	Student dropout, e-learning, prediction, machine learning	Peer-reviewed article	Dropout: "one who fails to sit for final exams for two consecutive semesters"	Dropout: personal characteristics and academic performance, study centre, major, study level etc. Discusses dropout models (Tinto's, Bean & Metzner's, and Rovai's)	CHINA	Fully online, Open University of China (China)	Fully online	University
Thistoll & Yates (2016)	2016	Course completion; distance education; motivation; student engagement; student retention	Peer-reviewed article	Completion (N/P) Retention (N/P)	Completion: engagement Attrition: social interaction, institutional issues, time and support for studies, and motivation; discusses Tinto's model	AUS NZ	Fully online, Open Polytechnic of New Zealand (New Zealand)	Fully online	University
Thomas, Herbert, & Teras (2014)	2014	N/P	Peer-reviewed article	Retention: (N/P)	Retention: sense of belonging	AUS NZ	Online or blended universities, undergraduate courses (Australia)	Online blended	Courses

Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Sweeney (2017)	Online adult doctoral learners who completed a doctoral degree (N=16)	To understand what motivates online doctoral learners to complete their degrees	Completion	Factors	Qualitative	Exploratory, phenomenological	Semi-structured interviews	Personal growth and knowledge were the primary motivational influences to persist to degree completion Motivation was connected to goal attainment and personal responsibility - establishing a goal, committing to it, and completing it; to a desire to attain an accomplishment that was unprecedented in their family, and the latter's support. The dissertation phase of the doctoral process presented the main challenge to completion	Provide cohort and peer support
Tan & Shao (2015)	Online students (N=62,375)	To build a dropout prediction model using the machine learning method	Dropout	Models	Quantitative	Statistical analysis	Academic database	Construction of a binary classification model that categorizes students into two classes, the dropout class and the retention class Dropout rate was 16.7% All of the three machine learning methods [Artificial Neural Network (ANN), Decision Tree (DT) and Bayesian Networks (BNs)] were effective for student dropout prediction, but DT presented a better performance	N/P
Thisstoll & Yates (2016)	(Study 1) Faculty (N=10) (Study 2) First time distance students (N=34)	To gain a greater understanding of the factors that contribute to course completion in distance study at OPNZ To investigate staff conceptions of factors contributing to course completions and to students' first course experience	Completion Attrition	Factors Models	(Study 1) Qualitative (Study 2) Mixed	(Study 1) Exploratory (Study 2) Survey	(Study 1) Semi-structured interviews (Study 2) Survey and interview	Presents a simple model of student engagement and a model of attrition points Key student-centric enablers and barriers to engagement were identified: mentoring, supporting and monitoring, connecting, and motivating students; institutional enablers and barriers to student engagement were staff and systems Both staff and students considered helpful tutors and clear learning materials essential; as is student motivation, which is enhanced if courses are relevant and achievable. Reasons for non-completion: inappropriate course advice and competing life demands, poor course choice, and ability to study by distance Staff participants believed student engagement can improve with appropriate	Provide more effective materials and resources, interaction with tutors and peers, and a student-centered, empathetic approach Ensure a close match between the learner and course level, content, and outcomes, by giving potential students comprehensive course planning advice (especially regarding first course), and calculate a realistic workload Foster engagement and success in students' first course Focus on tailored individual support
Thomas, Herbert, & Teras (2014)	Online or blended nontraditional university students (N=21) Online academic teaching staff (N=46)	To report on a research about how sense of belonging was understood and experienced by students, and the strategies used by academics to foster belonging in online learning	Retention	Factors	Qualitative	Exploratory	Semi-structured interviews Focus groups	Students and academics highly value efforts to create a sense of belonging. Where academics were able to foster a sense of community, collaboration, and personal engagement in learning, students were disinclined to withdraw	Foster a sense of belonging and offer multiple and varied opportunities to interact, especially in the first year Provide multiple layers for engagement and participation, embedding a range of community-building strategies for a truly inclusive online course

Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Tower, Walker, Wilson, Watson, & Tronoff (2015)	2015	N/P	Peer-reviewed article	Attrition: (N/P) Retention: (N/P)	Attrition: attendance at orientation; accessing the subject blended learning site by week 2 of semester; attendance at on-campus tutorials in the first 2 weeks of semester; first assessment submission; passing first assessment item; achieving a final pass grade for the subject Reviews several other factors	AUS NZ	Blended, three core subjects, Bachelor of Nursing, universities in Queensland (Australia)	Blended	Courses
Traver, Volchok, Bidjerano, & Shea (2014)	2014	Community of Inquiry, community college, course completion, retention, attrition, blended courses	Peer-reviewed article	Attrition: (N/P) Completion (of courses): (N/P) Retention: (N/P)	Retention: Community of Inquiry (Col) framework (teaching, social, learning, and cognitive presences)	USA	Blended. 17 blended courses, Queensborough Community College (USA)	Blended	Courses
Travers (2016)	2016	N/P	Peer-reviewed article	Retention: (N/P)	Retention: reviews several factors (e.g. student characteristics, technical difficulties, time management issues, lack of support), and also those connected to rural distance learners (underpreparedness, lower socioeconomic class, being older, first-in-family, and time-obligated students)	USA	Blended. Community colleges (USA)	Blended	Universities
Tucker (2014)	2014	N/P	Doctoral dissertation	Success: (N/P)	Success: conditions within (convenience and flexibility, color-blind environment, faculty and institutional support, sense of belonging) and beyond the online environment (traditional social support, academic self-efficacy, educational resilience)	USA	Online. Online predominantly White college in the southwestern (USA)	Online	University



Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Tower, Walker, Wilson, Watson, & Tronoff (2015)	First semester, blended nursing students (N=226)	To report on a two-part pilot study aimed at engaging, supporting and retaining a cohort of non-traditional Bachelor of Nursing (BN) students in Queensland, Australia	Retention Attrition	Factors Intervention	Mixed	Prospective	Academic database	Presents interventions for each attrition factor (or marker): orientation sessions and emails, telephone calls and support, and individual academic guidance Retention increased by 3% Students who submitted and passed their first assessment item were significantly more likely to pass a subject overall Students who collectively attended orientation, accessed the blended learning resources, attended early semester tutorials and submitted and passed their first assessment items were significantly more likely to pass Full-time study load was a predictor of failure of at least one subject	Early, low stakes assessment, scaffolded to ensure students' continued academic success; also ongoing and continuous assessment Develop supportive activities (orientation and mentorship programs and literacy skills workshops) that engage learners and enable them to 'fit in' For non-traditional students, include activities that focus on professional identity, study skills and academic achievement
Traver, Volchok, Bidjerano, & Shea (2014)	Blended undergraduate students, pretest (N=282), posttest (N=201)	To explore the nature and development of students' perceptions of the Col presences and correlate them with a measure of their course completion	Completion	Factors	Quantitative	Pre/posttest Col survey design	Col survey	No significant differences between course completers and non-completers on any Col indicators or demographic/status variables were found	Consider how community college students' prior exposure to online coursework facilitates their current experiences in online courses Instructors/institutions should think critically about which community college courses to offer online, as well as what prerequisite knowledge and skills might best serve the students enrolled in those offerings
Travers (2016)	N/AP	To present a review of retention in community colleges and suggestions to support retention in online courses	Retention	Factors Recommendations	Theoretical (non-empirical)	N/AP	Review of literature	[see Strategies]	Several suggestions for online courses, e.g.: Enhance a suite of integrated supports for students and faculty Recognize and Adapt to the Influences of External Factors on Students Adjust Instructional Methods and Modify Academic Support Systems Several suggestions for community colleges, e.g.: Precourse assessments or surveys to support faculty in developing interventions Informal introductions for discovering student interests and academic goals instructors need to be properly trained in strategies in supporting both young and adult students Implementation of informed instructional strategies
Tucker (2014)	Online, undergraduate male students of color (N=24); for interviews, (N=9)	To examine the self-reported narratives, beliefs, and experiences of African American, American Indian, Asian American, and Latino males in the online environment to gain an understanding of conditions needed within and beyond the online environment where academic success can happen	Success	Factors	Qualitative	Case studies	Survey Interview Academic database Observations	Eight conditions and three initiatives were identified to promote academic success: Conditions within the online environment - convenience/flexibility, a color-blind environment, web-based interaction, faculty support and immediate interaction, and institutional support. Conditions beyond the online environment - traditional social support, academic self-efficacy, and educational resilience. Orientation, mentorship, and social networking are identified as initiatives	Present students with proper advising and the information they need to succeed Provide interactions and immediacy and a mentorship program Betterment of websites and financial aid processes Build an egalitarian online learning environment that values and accommodates cultural differences



Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Vadell (2016)	2016	N/P	Doctoral dissertation	Retention: "the progressive reenrollment in college, whether continuous from one term to the next or temporarily interrupted and then resumed" (Pascarella & Terenzini, 2005, p. 374)"	Retention: academic coaching and mentoring Reviewed retention theories (Tinto's, Bean & Metzner's, and Kember's) and sociological learning theories	USA	Online courses, College of Arts and Sciences, urban university, Pennsylvania (USA)	Online	Courses
Vakoufari, Christina, & Mavroidis (2014)	2014	N/P	Peer-reviewed article	Dropout (N/P)	Dropout: self-esteem, loneliness, social presence, academic performance, and satisfaction	GREECE	Blended. Undergraduate and postgraduate courses, Hellenic Open University (HOU) (Greece)	Blended	Courses
Van Hunnik (2015)	2015	Remote laboratory, online laboratory, higher education, online education, digital education, retention, graduation, online faculty, online students	Peer-reviewed article	Retention: (N/P) Completion: attaining a degree (graduating)	Retention: self-discipline, motivation, having a clear goal, network support, engagement Dropout: personal obligations, frustration with technical difficulties	N/AP	Online laboratory courses, online science programs	Online	Courses
Verdinelli & Kutner (2015)	2015	Persistence, disability, online education, accessibility, stigma	Peer-reviewed article	Persistence: "a student's postsecondary educational performance in order to reach academic goals and attain graduation (Hart, 2012; Tinto, 1993)"	Persistence: discusses several factors (e.g. time management, self-efficacy, personal growth, self-motivation) and models (Tinto's, Bean & Metzner's, Rovaf's)	USA	Fully online and blended. Online programs, 14 universities (USA)	Fully online blended	Programs

Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Vadell (2016)	Non-traditional, undergraduate distance education students (N=4)	To explore how undergraduate, distance education students experienced academic coaching provided by a private coaching company and how they perceived it to influence their retention	Retention	Factors	Qualitative	Phenomenological	Interviews Academic database	Each interviewee felt that academic coaching was critical for their retention, expediting and positively influencing student self-efficacy, and providing students with a relationship through impactful connection in an otherwise isolated learning environment	Incorporate academic coaching as a retention tool Communication to explore and perhaps adjust student expectations to a more realistic level at the beginning of the distance education Increase the amount of social interaction Design courses strategically, adding faculty support through online mentors Provide technical support 24/7
Vakoufari, Christina, & Mavroidis (2014)	Online undergraduate and postgraduate students (N=80)	To empirically examine the relation of self-esteem and loneliness with social presence, academic performance, satisfaction with the course and intention for academic drop out, in a blended distance learning environment	Dropout	Factors	Quantitative	Correlational survey	Survey (Scales) Questionnaire	Negative correlation between self-esteem and intention for academic drop out, while there is a positive correlation between self-esteem and satisfaction derived from the course No correlation between self-esteem and academic performance, and between loneliness and the other variables No statistically significant differences between the examined variables in relation to the demographic features (gender, age, etc.)	Student self-esteem and satisfaction should be seriously taken into consideration by course designers and tutors Train the tutors so that they can develop the appropriate communication skills Tutor-student communication should involve issues of emotional and psychological support Assigning group written assignments to students to reduce the feeling of loneliness and increase students' perception of social presence
Van Hunnik (2015)	N/AP	To describe practices to increase and maintain student retention, increase student engagement and graduation rates for college running laboratory science courses	Retention	Recommendations	Theoretical (non-empirical)	N/AP	Review of literature	[see Strategies]	Numerous strategies for retention, e.g.: Message board and support 24/7 Concise instruction and clear timeframe for completion (of task) Increase quality of online lab materials Setting up remote labs with real equipment
Verdinelli & Kutner (2015)	Adult, online graduate students with disabilities (N=35)	To understand the reasons that lead graduate students with disabilities to enroll in online programs and to identify factors that promote persistence in these programs	Persistence	Factors	Qualitative	Grounded theory	Interview	There was interplay between selecting an online program of study and having a disability. The online environment provided a shield to defy stigmatization and stereotypes, manage disability needs, and gain greater control over the learning process. Built a Persistence model for students with disabilities enrolled in online graduate programs with the following persistence factors: resiliency, self-determination, motivation, and goal commitment (internal factors); external sources of support, positive (flexibility, equal foot) and negative (perceived isolation, communication issues) online environment factors (external factors).	N/P

Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Vogel, Hochberg, Hackstein, Bockschecker, Bastiaens, & Baumöl (2018)	2018	N/P	Conference presentation	Dropout: (N/P)	Dropout: reviews literature for dropout factors in their personal, institution-educational, institution-organizational, and social aspects (e.g. health, motivation, demographics, financial issues, self-efficacy etc.)	GER	Fully online open university, FernUniversität (Germany)	Fully online	University
Winger (2016)	2016	University students, undergraduate students, online learning, retention, success, learning analytics, predictive analytics, demographic factors, internal factors, external factors, connections, communication, mental and physical health, wellness, instructional conditions, instructional design, technology, grades, professors, faculty members, student affairs	Doctoral dissertation	Retention: (N/P) Success: (N/P)	Retention: review of literature on demographic (age, work status, and family situation), internal (wellness, work status, and communication style), and external factors (course designs, delivery formats)	USA	Mixed. Undergraduate programs, Midwestern research university (USA)	Online f2f	Programs
Wladis, Conway, & Hachey (2015)	2015	Online learning; course type; retention	Peer-reviewed article	Retention: (N/P) Completion (of courses): to complete a course with a 'C' grade or higher Attrition: (N/P)	Retention: course-level characteristics (e.g. elective versus distributional versus major requirements; difficulty level; STEM status), student characteristics (academic preparation, demographics)	USA	Mixed. 21 undergraduate courses, large urban community college (USA)	Online f2f	Courses
Wladis, Conway, & Hachey (2016)	2016	N/P	Peer-reviewed article	Persistence: (N/P) Dropout: (N/P)	Dropout/Completion: reviews student characteristics (lower GPA, gender, motivation etc.)	USA	Mixed. 18 colleges, City University of New York (USA)	Online f2f	University

Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Vogel, Hochberg, Hackstein, Bockshecker, Bastiaens, & Baumöl (2018)	N/P	To develop an approach on how to reduce the number of dropouts by combining characteristics of students from FernUniversität in Hagen with results on dropout	Dropout	Factors Literature review	Mixed	Content analysis Literature review	Academic database Literature	Produced a model for dropout Produced profiles (personas) of abandoning students: the "Professional Worker", the "Working Single Parent", the "School Leaver", and the "Pensioner", based on important reasons for dropout: Prior knowledge, Lack of success, Interest, Self-efficacy, Employment during Studies and Organizational conditions	Provide students a flexible learning environment that adapts their needs on structure, dialogue, and autonomy Discusses several strategies designed for each dropout student profile (e.g. proactive support for Working Single Parent; support as information of the subject and future career opportunities for the School Leaver) Discusses several strategies related to university support employing ICT via 3 approaches: technical approach, social approach and structure approach (e.g., employment of immersive technologies, social media, open interface, and learning analytics/intelligent agents)
Winger (2016)	Undergraduate students who had taken one or more online courses (interviews) (N=14) Undergraduate students who dropped out, transferred or stopped-out (surveys) (N=43)	To examine factors that affect university student retention and success, with particular consideration for students who have taken online courses during their undergraduate career	Retention	Factors	Qualitative	Phenomenography	Semi-structured interview Survey	Demographic, internal, and external factors interact to affect university student retention and success (both in online and face-to-face) Students who dropped out or transferred away did not report online courses as reasons for their departures. Reasons involved family obligations, work and financial issues, mental and physical health, social pressures, communication with instructors and other students, and course load	a) students conducting learning styles analyses before enrolling in online courses, b) students with mental health issues staying connected to support services, particularly during online courses, c) instructors thoughtfully and effectively implementing online interactivity tools, and d) instructors facilitating meaningful connections in online settings through all available methods (e.g., email, discussion boards, synchronous meetings)
Wladis, Conway, & Hachey (2015)	F2f (n=1,329) and online (n=1,001) students (N=2,330)	To assess the extent to which course-level factors may be used to predict online versus face-to-face course outcomes	Completion	Mode of delivery (online and f2f) Measures	Quantitative	Multi-level modeling	Academic database	Successful course completion rates were 58.6% for online courses and 65.3% for face-to-face courses Elective courses, and to a lesser extent distributional course requirements, were significantly more likely to have a larger gap in successful course completion rates online versus face-to-face, when compared with major course requirements. Upper level courses had better course completion rates overall, but a larger gap in online versus face-to-face course outcomes than lower level courses.	Targeting particular courses (at highest risk of dropout and failure online) with supplementary support such as tutors, mentors, advisers or extra-technical support
Wladis, Conway, & Hachey (2016)	F2f and online undergraduate students (N=9,663)	To explore the relationship among student characteristics, online course-taking and course and college persistence	Persistence	Factors Mode of delivery (online and f2f)	Quantitative	Multi-level modeling	Survey	Native-born students were at greater risk online than foreign-born students, relative to their face-to-face outcomes. Having a child under 6 years of age also interacted with the online medium to predict lower rates of successful course completion online than would be expected based on face-to-face outcomes. In addition, while students enrolled in online courses were more likely to drop out of college, online course outcomes had no direct effect on college persistence; rather other characteristics seemed to make students simultaneously both more likely to enroll online and to drop out of college	Colleges wanting to target interventions to students at highest risk in the online environment may want to focus on supporting student parents (perhaps by providing financial support and/or assistance accessing childcare), and native-born students in areas where foreign-born students are heavily represented Target lower-income students for academic support

Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Wladis, Hachey, & Conway (2015)	2015	Online learning, course retention, career, elective, STEM	Peer-reviewed article	Completion (of courses): to complete a course with a 'C' grade or higher Retention: (N/P) Dropout: (N/P)	Retention: course-level factors (e.g. level, career vs. liberal arts, elective vs. distributional vs. major requirement)	USA	Mixed. STEM courses, large urban community college (USA)	Online f2f	Courses
Woodley & Simpson (2014)	2014	N/P	Chapter	Dropout (of modules or university): (N/P) Retention: N/P	Dropout: life circumstances; motivation; technology; and others. "Reasons for dropping are many and various"	UK	Mainly United Kingdom Open University (UKOU) context	Fully online	OHE
Wright (2015)	2015	N/P	Doctoral dissertation	Attrition: "A phenomenon in which learners register for a program but withdraw prior to completion (Martinez, 2003)" Retention: "number of students who persist and continue at their universities until and through the time that they graduate" Success: "measure of student achievement, measured by the grade earned upon completion of the course; a favorable or desirable outcome for the student (Cuseo, Fecas, & Thompson, 2010)"	Attrition: composited model that combined elements of Tinto's persistence model with Bean and Metzner's student attrition model	USA	Online higher education courses, public research university, southeast (USA)	Online	Courses

Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Wladis, Hachey, & Conway (2015)	F2f and online STEM course students (N=3,599)	To examine the effect of course-level factors on predicting outcomes in online versus f2f courses To examine to what extent any differences in successful completion rates by course can be explained by the characteristics of the students in online STEM courses	Completion	Factors Mode of delivery (f2f or online)	Quantitative	Statistical	Academic database	While career and elective STEM courses had significantly higher success rates face-to-face than liberal arts and major requirement STEM courses respectively, career STEM courses had a significantly higher success rate online Differences in course outcomes by course characteristics were not significant. This suggests that while certain types of STEM courses can be identified as higher or lower risk in the online environment, this appears not to be because of the courses themselves, but rather because of the particular characteristics of the students who choose to take these courses online	Target students in specific courses which are at higher risk in the online environment; this may allow institutions to leverage interventions by focusing them on the STEM courses at greatest risk of lower online success rates, where the students who are at highest risk of online dropout seem to be concentrated.
Woodley & Simpson (2014)	N/AP	To present a dialogue between two educational researchers about student dropout	Dropout	Factors Measures Recommendations	Theoretical (non-empirical)	N/AP	Literature	UKOU's graduation rate is 22%, while in international distance education it is around 10% - and they may be decreasing. "Dropping out is the norm and the graduate is the 'deviant'". Presents UKOU's predicted probability of success system based on student entry characteristics "The best predictor of student retention is motivation." "The way a distance education course is structured, its workload, its assessment strategies and its style of writing, must all affect its retention rate."	Increase in fees seem to inspire higher completion Provide students a self-assessed success diagnostic test that also tells them how they could increase those chances—e.g., by taking a different module, improving his entry qualifications, etc. "Make it harder to get in. Not through selection but with brutal honesty about what the students will be getting into and make them think carefully about it. Make it harder to get out" Retention services need to clarify and build on motivation and address motivation-reducing issues Give students course choice advice and pre-module phone calls
Wright (2015)	Adult learners enrolled in an online course (N=152)	To examine the lack of success by and high attrition rates of adult learners enrolled in online higher education courses	Attrition Success	Factors Intervention	Qualitative	Case study	Survey Interview	Factors such as work-related issues, lack of time management, and personal issues contributed to students' unsuccessful completion Level of online readiness affects GPA, retention, time-to-degree completion, and overall online success Success depended on time management skills, motivation and dedication, technological skills, and communication skills Created a preorientation workshop intervention	Create a preorientation workshop designed to assist adult learners prior to taking their first online course by assessing student readiness levels for online learning and identifying deficiencies in skills required to be successful

Authors	Year	Keywords	Type of publication	Dropout (or related) concept/definition	Dropout factors/Models	Country	Type of OHE/Online course structure/subject	Type of OHE	Level of Education
Yang, Baldwin, & Snelson (2017)	2017	Persistence; online program completion; student attrition; student retention; online program management	Peer-reviewed article	Dropout (from courses or programs): N/P Persistence: "successfully finishing all course requirements and continuing on to program completion (Hart, 2012)"	Persistence: reviews several program (e.g. quality of program, institutional support) and personal (e.g. satisfaction, sense of belonging, motivation) factors	USA	Fully online Master of Education Technology program, Department of Educational Technology, urban university (USA)	Fully online	Masters program
York (2014)	2014	N/P	Doctoral dissertation	Attrition: "Occurs when a student leaves the college or university he or she is enrolled in voluntarily or involuntarily"	Attrition: employs Tinto's (1975), Spady's (1970), Bean and Metzner's (1983) models and reviews several others	USA	Fully online, public, non-profit university, Twin Pines University (USA)	Fully online	University
Yukselturk, Ozekes, & Türel (2014)	2014	Educational data mining, student dropout prediction, k-nearest neighbour, decision tree, Naive Bayes, neural network	Peer-reviewed article	Dropout (from course or program): N/P	Dropout: gender, age, educational level, previous online experience, occupation, self-efficacy, readiness, prior knowledge, locus of control	TURK	Online. Online Information Technologies Certificate Program, government university (Turkey)	Online	Program
Zimmerman & Johnson (2017)	2017	Statistics education, online education; retention	Peer-reviewed article	Attrition: dropped or withdrew from the course or finished the semester with a grade of F Completion: completed the course with a grade of D or higher	Attrition: student-level factors (e.g. anxiety, negative expectations, attitudes towards statistics, intended time-commitment)	USA	Fully online, undergraduate-level introductory statistics course, large, multi-campus university (USA)	Fully online	Course



Authors	Sample population (type and n)	Research purposes	Domains	Themes	Methodological approach	Method	Data collection	Findings/Results	Strategies to overcome
Yang, Baldwin, & Snelson (2017)	Fully online Master's students (N=52)	To investigate persistence factors that contributed to students' successful completion	Persistence	Factors	Qualitative	Grounded theory	Reflection video (assignment)	Both personal and program attributes contributed to students' successful completion of a fully online program. Main individual attributes include interest in or career goals related to technology, time and effort invested, and perceived utility of learning. Main program attributes include relevancy of courses to individual or professional needs, satisfaction with courses and program, and ties between coursework and job promotion.	Prioritizing different attributes and strategizing resources (for professional development, technical support for faculty, and paid course updates or redesign) Constant and ongoing evaluation of online teaching, teaching methods, instructors' competencies, and best practices
York (2014)	Fully online university students (N=19), advisors (N=3), faculty members (N=19), and institutional leaders (N=4)	To discover the factors and experiences that impact attrition in Distance Learning Only Educational Environments (DLOEEs) and to develop an instrument to assess them	Attrition	Factors Instruments	Mixed	Sequential exploratory	Focus groups Survey	Created the Factors Impacting Student Attrition (FISA) survey 13 factors and more than 60 sub-factors that impact student attrition were identified and organized onto a longitudinal timeline: prior to enrollment, enrollment, while enrolled and outcomes. The 13 factors are: (1) personal characteristics, (2) personal attributes, (3) prior experiences, (4) internal motivations, (5) external motivations, (6) institutional choice, (7) institutional interactions, (8) academic experiences, (9) peer interactions; (10) faculty interactions, (11) institutional integration; and (12) external experiences; and (13) outcomes Among the most important factors were: previous collegiate experiences, internal and external motivations, misperceptions	N/P
Yukselturk, Ozekes, & Türel (2014)	Online undergraduate students (N=189)	To examine the prediction of dropouts through data mining approaches in an online program	Dropout	Instruments Measures	Quantitative	Descriptive statistics	Survey (5 scales)	Data mining approaches had high sensitivity (87%-74%) in predicting dropout Online technologies self-efficacy, online learning readiness, and previous online experience were found as the most important factors in predicting the dropouts	With the help of data mining techniques, orient students to the kind of skills and abilities they will need to function well in online programs, personalize and adapt learning content and instruction to meet individual needs, and improve and optimize the use of institutional support structures
Zimmerman & Johnson (2017)	Online undergraduate introductory statistics students (N=353)	(1) Do students who successfully complete the course differ from those who do not successfully complete the course in terms of their attitudes, anxieties, expectations, and performance in the early weeks of the course? (2) What variables can be used to best predict successful course completion?	Attrition Completion	Factors Models	Quantitative	Survey	Survey Scales	Completion rate was 70%, with 17.3% dropout. There were no significant differences between students who did and did not successfully complete the course in terms of anxiety, attitudes, or expected time commitment; students who completed the course had higher scores on the GOALS, higher expected grades, and higher scores on the first quiz of the semester Students' attitudes towards statistics teachers and scores on the first quiz of the semester could be used to predict whether students would successfully complete the course Constructed a model for predicting successful course completion	Intervention targeting anxiety during quizzes and exams emphasizing test-taking strategies and general anxiety reduction Instructors could provide students with materials to review before the course begins Instructors should reach out to students who score poorly on the measure of demonstrated knowledge during the first week of the course, and to the ones with low grade expectations



## APPENDIX 4

### INTERVIEW PROTOCOLS

#### A4.1. INTERVIEW PROTOCOL - PERSISTERS (Students)

##### Persistencia, Abandono y el Factor Tiempo en la Educación Superior Totalmente Online: Un Estudio Cualitativo con Estudiantes de Primer Año

##### GUION DE ENTREVISTAS 1 (PERSISTENTES)

**Objetivo de la entrevista:** Conocer en profundidad la experiencia subjetiva del *tiempo* por parte del alumnado de nueva incorporación a programas de grado (ESPRIA) a la UOC en (Septiembre) 2017.1: cómo han gestionado el tiempo, qué presiones por falta de tiempo han percibido, y qué relaciones ven con su persistencia, suceso o abandono.

**Durada prevista:** entre 50-70 minutos

#### 1. Entrada

1.1. Presentación del entrevistador.

1.2. Explicación del *objetivo* y durada de la entrevista: explorar la experiencia de las personas con la entrada en la universidad y en su primer año; en especial, su experiencia con el *tiempo*, de manera general – como lo gestionan, como gestionan sus responsabilidades en casa, familia, trabajo con los estudios – y como eso afecta los estudios.

1.3. Consentimiento informado para grabación (audio o audio/vídeo [Skype]).

1.4. Explicación y firma de consentimiento y cesión de derechos de imagen.

#### 2. Entrevista

2.1. Puesta en marcha del sistema de grabación de audio/video

2.2. Entrevista siguiendo el guion

2.3. Cierre de la entrevista y agradecimiento

2.4. Cierre del proceso de grabación de audio/video

#### Datos de la entrevista

<b>Data</b>	
<b>Hora</b>	
<b>Lugar</b>	
<b>Entrevistador</b>	
<b>Entrevistado</b>	

**INTRODUCCIÓN:** “Empezaste tus estudios en la UOC en Septiembre de 2017, ha pasado un año y te has matriculado 3 semestres seguidos, entonces tienes una experiencia tal... vamos a tener una entrevista sobre tu *incorporación* con enfoque en tu primer semestre del 2017”.

#### 1a parte: Preguntas introductorias para conocer la persona entrevistada

1.1. En que programa estás en la UOC?

- 1.2. Dedicación actual a tiempo completo o parcial?
- 1.3. En el curso pasado, cuantas asignaturas has hecho y créditos; y en este curso?
- 1.4. Te ha ido bien en los distintos semestres?
- 1.5. Has tenido experiencia universitaria previa? Era a distancia?
- 1.6 En el momento en que empezaste el curso: Edad, genero, si trabajabas (cuántas horas/semana), si tenía familia/hijos
- 1.7. Por que has empezado a estudiar (tenía relación con tu trabajo, etc.)? Y por que en la UOC?

### **2a parte: Descripción de una semana típica y como la gestionan**

- 2.1. Puedes describirme una semana típica durante el *primer semestre* en la UOC para ti?
- 2.2. Cómo has compaginado los estudios con tu vida personal, familiar y laboral?
- 2.3. Y a lo largo del curso pasado, la semana típica ha ido cambiando? Y durante este curso? De qué manera te organizas para aprovechar el tiempo que dedicas a los estudios?

### **3a parte: Exploración de los temas más específicos**

**PROMPT:** Cómo has llevado/te las has apañado/organizado/lidiado con los estudios online, y qué dificultades has tenido?

- 3.1. Cuánto **tiempo** pensabas que ibas a **dedicar** a los estudios durante el primer semestre, **antes** de empezarlos?
- 3.2. Esa **expectativa** se cumplió o no? Los estudios han sido más difíciles, o más laboriosos (costaron más trabajo y tiempo) de lo que anticipabas? La **tecnología** ha influenciado de alguna manera?
- 3.3. Cómo ves/valoras tus **habilidades de gestión del tiempo** y preparación para estudiar? Explicame mejor qué **estrategias** has utilizado para compaginar todo en tu primer curso.
- 3.4. Has sentido mucha **presión** o agobio por falta de tiempo en el primer semestre? Has tenido experiencia de **conflicto** entre responsabilidades familiares, de trabajo, personales, y de los estudios?
- 3.5 Qué **motivación** tenías para continuar con los estudios durante los semestres anteriores? Qué te motivaba a seguir adelante?
- 3.6. Muchas veces la gente sabe que tiene que dedicar su tiempo a una tarea, pero no lo hace y lo deja para después. Eso se llama **procrastinar**. Te ves reflejado en eso, te ha pasado alguna vez en tus estudios en la UOC? Se ha convertido en un problema? Por que? Cuáles sus causas, en tu opinión? Contadme un poco sobre eso. Crees que tenía alguna relación con tu motivación?
- 3.7. Cómo toda esa situación – la presión del tiempo, la procrastinación, etc. - te ha afectado? (Me refiero a la **salud**, sensación de **estrés**, ansiedad)
- 3.8. Has considerado **abandonar** o hacer una parada por un tiempo (coger un break)?
- 3.9. Mirando hacia la **graduación**, cuántos años crees que te llevará? Cómo lo ves, este plan? Qué estrategias estás pensando para cumplir con este plan y aprovechar bien el tiempo?
- 3.10. Qué tipos de **soporte** has tenido para perseverar en los estudios en los contextos personal o familiar, laboral, y de estudios? ... Y cuáles te habría gustado tener?

### **4ª parte (salida): Posibles estrategias/intervenciones institucionales**

**PROMPT:** *Como crees que la universidad podría haberte ayudado a llevar mejor los estudios durante el primer año?* (Con las diferentes figuras que tenemos, profesor, tutor, universidad en general).

- 4.1. A depender de la respuesta, plantear diferentes **soluciones** para optimizar el tiempo (3 líneas de ESPRIA):

flexibilidad de la evaluación continuada,  
ajuste de la carga (creditaje),  
coordinación de los calendarios de entrega de las distintas asignaturas.

## A4.2. INTERVIEW PROTOCOL - DROPOUTS (Students)

### GUION DE ENTREVISTAS 2 (ABANDONADORES)

**Objetivo de la entrevista:** Conocer en profundidad la experiencia subjetiva del *tiempo* por parte del alumnado de nueva incorporación a programas de grado (ESPRIA) a la UOC en (Septiembre) 2017.1: cómo han gestionado el tiempo, qué presiones por falta de tiempo han percibido, y qué relaciones ven con su persistencia, suceso o abandono.

**Durada prevista:** entre 50-70 minutos

#### 1. Entrada

- 1.1. Presentación del entrevistador.
- 1.2. Explicación del *objetivo* y durada de la entrevista: explorar la experiencia de las personas con la entrada en la universidad y en su primer año; en especial, su experiencia con el *tiempo*, de manera general – como lo gestionan, como gestionan sus responsabilidades en casa, familia, trabajo con los estudios – y como eso afecta los estudios.
- 1.3. Consentimiento informado para grabación (audio o audio/vídeo [Skype]).
- 1.4. Explicación y firma de consentimiento y cesión de derechos de imagen.

#### 2. Entrevista

- 2.1. Puesta en marcha del sistema de grabación de audio/video
- 2.2. Entrevista siguiendo el guion
- 2.3. Cierre de la entrevista y agradecimiento
- 2.4. Cierre del proceso de grabación de audio/video

#### Dados de la entrevista

<b>Data</b>	
<b>Hora</b>	
<b>Lugar</b>	
<b>Entrevistador</b>	
<b>Entrevistado</b>	

**INTRODUCCIÓN:** “Empezaste tus estudios en la UOC en Septiembre de 2017, pero no terminaste el curso, verdad?, entonces tienes una experiencia tal... vamos a tener una entrevista sobre tu *incorporación* con enfoque en tu primer semestre del 2017”.

#### 1a parte: Preguntas introductorias para conocer la persona entrevistada

- 1.1. En que programa estabas en la UOC?
  - 1.2. Dedicación a tiempo completo o parcial?
  - 1.3. En el curso pasado, cuantas asignaturas has hecho y créditos?
  - 1.4. Te ha ido bien el primer semestre?
  - 1.5. Has tenido experiencia universitaria previa? Era a distancia?
  - 1.6 En el momento en que empezaste el curso: Edad, genero, si trabajabas (cuántas horas/semana), si tenía familia/hijos
  - 1.7. Por que empezaste a estudiar (tenía relación con tu trabajo, etc.)? Y por que en la UOC?
- (Pregunta exploratoria para los abandonadores)**
- 1.7. Por qué decidiste no hacer la rematrícula? Cuándo lo decidiste, y por que razones? Tenían que ver con el tiempo? Y por qué abandonar? [o sea, no rematricularse por dos semestres]

## **2a parte: Descripción de una semana típica y como la gestionan**

- 2.1. Puedes describirme una semana típica durante el *primer semestre* en la UOC para ti?
- 2.2. Cómo has compaginado los estudios con tu vida personal, familiar y laboral?

## **3a parte: Exploración de los temas más específicos**

**PROMPT:** *Cómo has llevado/te has apañado/organizado/lidiado con los estudios online, y qué dificultades has tenido?*

- 3.1. Cuánto **tiempo** pensabas que ibas a **dedicar** a los estudios durante el semestre, **antes** de empezarlos?
- 3.2. Esa **expectativa** era correcta o no? Los estudios han sido más difíciles, o más laboriosos (costaron más trabajo y tiempo) de lo que anticipabas? La **tecnología** ha influenciado de alguna manera?
- 3.3. Cómo ves/valoras tus **habilidades de gestión del tiempo** y preparación para los estudios? Explícame mejor qué **estrategias** has utilizado para compaginar todo.
- 3.4. Has sentido mucha **presión** o agobio por falta de tiempo en el primer semestre? Has tenido experiencia de **conflicto** entre tu responsabilidades familiares, de trabajo, personales, y de los estudios?
- 3.5. Qué **motivación** tenías para continuar con los estudios? Qué te motivaba a seguir adelante? Como abandonaste, te has desmotivado? Por qué?
- 3.6. Muchas veces la gente sabe que tiene que dedicar su tiempo a una tarea, pero no lo hace y lo deja para después. Eso se llama **procrastinar**. Te ves reflejado en eso, te ha pasado alguna vez en tus estudios en la UOC? Se ha convertido en un problema? Por que? Cuáles sus causas, en tu opinión? Contadme un poco sobre eso. Crees que tenía alguna relación con tu motivación?
- 3.7. Cómo toda esa situación – la presión del tiempo, la procrastinación, etc. - te ha afectado? (Me refiero a la **salud**, sensación de **estrés**, ansiedad)
- 3.8. Cómo ves el **tiempo** que te faltaba para **graduarte**? Ha influenciado en tu decisión de no hacer la matrícula?
- 3.9. Qué tipos de **soporte** has tenido para perseverar en los estudios en los contextos personal o familiar, laboral, y de estudios? ... Y cuáles te habría gustado tener?
- 3.10. Te has planteado **retomar** tus estudios, y cuándo? Por qué?

## **4ª parte (Salida): Posibles estrategias/intervenciones institucionales**

**PROMPT:** *Como crees que la universidad podría haberte ayudado a llevar mejor los estudios durante el primer año? (Con las diferentes figuras que tenemos, profesor, tutor, universidad en general).*

- 4.1. A depender de la respuesta, plantear diferentes **soluciones** (3 líneas de ESPRIA):
  - flexibilidad de la evaluación continuada,
  - ajuste de la carga (creditaje),
  - coordinación de los calendarios de entrega de las distintas asignaturas.

## A4.3. INTERVIEW PROTOCOL – STOPOUTS (Students)

### GUION DE ENTREVISTAS 3 (STOPOUTS)

**Objetivo de la entrevista:** Conocer en profundidad la experiencia subjetiva del *tiempo* por parte del alumnado de nueva incorporación a programas de grado (ESPRIA) a la UOC en (Septiembre) 2017.1: cómo han gestionado el tiempo, qué presiones por falta de tiempo han percibido, y qué relaciones ven con su persistencia, suceso o abandono.

**Durada prevista:** entre 50-70 minutos

#### 1. Entrada

- 1.1. Presentación del entrevistador.
- 1.2. Explicación del *objetivo* y durada de la entrevista: explorar la experiencia de las personas con la entrada en la universidad y en su primer año; en especial, su experiencia con el *tiempo*, de manera general – como lo gestionan, como gestionan sus responsabilidades en casa, familia, trabajo con los estudios – y como eso afecta los estudios.
- 1.3. Consentimiento informado para grabación (audio o audio/vídeo [Skype]).
- 1.4. Explicación y firma de consentimiento y cesión de derechos de imagen.

#### 2. Entrevista

- 2.1. Puesta en marcha del sistema de grabación de audio/vídeo
- 2.2. Entrevista siguiendo el guion
- 2.3. Cierre de la entrevista y agradecimiento
- 2.4. Cierre del proceso de grabación de audio/vídeo

#### Datos de la entrevista

<b>Data</b>	
<b>Hora</b>	
<b>Lugar</b>	
<b>Entrevistador</b>	
<b>Entrevistado</b>	

**INTRODUCCIÓN:** “Empezaste tus estudios en la UOC en Septiembre de 2017, pero te has tomado un break, verdad?, has hecho una pausa, pero te rematriculaste en 2018... entonces tienes una experiencia tal... vamos a tener una entrevista sobre tu *incorporación* con enfoque en tu primer semestre del 2017”.

#### 1a parte: Preguntas introductorias para conocer la persona entrevistada

- 1.1. En que programa estás en la UOC?
- 1.2. Dedicación a tiempo completo o parcial?
- 1.3. En tu primer semestre, cuantas asignaturas hiciste y créditos?
- 1.4. Cómo te ha ido?
- 1.5. Has tenido experiencia universitaria previa? Era a distancia?
- 1.6 En el momento en que empezaste el curso: Edad, genero, si trabajabas (cuántas horas/semana), si tenía familia/hijos
- 1.7. Por que empezaste a estudiar (tenía relación con tu trabajo, etc.)? Y por que en la UOC?

#### (Pregunta exploratoria para los stopouts)

1.8. Por qué decidiste no hacer la rematrícula, o sea, tomarte un break, por un semestre? Cuándo lo decidiste, y por que razones? Tenían que ver con el tiempo?

## **2a parte: Descripción de una semana típica y como la gestionan**

2.1. Puedes describirme una semana típica durante tu semestre en la UOC?

2.2. Cómo has intentado compaginar los estudios con tu vida personal, familiar y laboral?

2.3. De que manera te organizabas para aprovechar el tiempo que dedicas a los estudios?

## **3a parte: Exploración de los temas más específicos**

**PROMPT:** *Cómo has llevado/te las has apañado/organizado/lidiado con los estudios online, y qué dificultades has tenido?*

3.1. Cuánto **tiempo** pensabas que ibas a **dedicar** a los estudios durante el semestre, **antes** de empezarlos?

3.2. Esa **expectativa** era correcta o no? Los estudios han sido más difíciles, o más laboriosos (costaron más trabajo y tiempo) de lo que anticipabas? La **tecnología** ha influenciado de alguna manera?

3.3. Cómo ves/valoras tus **habilidades de gestión del tiempo** y preparación para los estudios? Explícame mejor qué **estrategias** has utilizado para compaginar todo.

3.4. Has sentido mucha **presión** o agobio por falta de tiempo en el primer semestre? Has tenido experiencia de **conflicto** entre tu responsabilidades familiares, de trabajo, personales, y de los estudios?

3.5. Qué **motivación** tenías para continuar con los estudios? Qué te motivó a seguir adelante después de un break?

3.6. Muchas veces la gente sabe que tiene que dedicar su tiempo a una tarea, pero no lo hace y lo deja para después. Eso se llama **procrastinar**. Te ves reflejado en eso, te ha pasado alguna vez en tus estudios en la UOC? Se ha convertido en un problema? Por que? Cuáles sus causas, en tu opinión? Contadme un poco sobre eso. Crees que tenía alguna relación con tu motivación?

3.7. Cómo toda esa situación – la presión del tiempo, la procrastinación, etc. - te ha afectado? (Me refiero a la **salud**, sensación de **estrés**, ansiedad)

3.8. Cómo ves el **tiempo** que te faltaba para **graduarte**? Ha influenciado en tu decisión de no hacer la rematrícula, en tu segundo semestre? Y ahora, en este curso?

3.10. Qué tipos de **soporte** has tenido para perseverar en los estudios en los contextos personal o familiar, laboral, y de estudios? ... Y cuáles te habría gustado tener?

## **4ª parte (salida): Posibles estrategias/intervenciones institucionales**

**PROMPT:** **Como crees que la universidad podría haberte ayudado a llevar mejor los estudios durante el primer año?** (Con las diferentes figuras que tenemos, profesor, tutor, universidad en general).

4.1. A depender de la respuesta, plantear diferentes **soluciones** (3 líneas de ESPRIA):  
flexibilidad de la evaluación continuada,  
ajuste de la carga (creditaje),  
coordinación de los calendarios de entrega de las distintas asignaturas.

## A4.4. INTERVIEW PROTOCOL - COORDINATING PROFESSORS

Codi del document sonor: PXX\_Num-codi-assignatura

Exemple: P03-72.015

Durada prevista: entre 40-60 minuts

### Dades de l'entrevista

<b>Data</b>	
<b>Hora</b>	
<b>Lloc</b>	
<b>Entrevistador</b>	
<b>Entrevistat</b>	

### Dades de assignatura

<b>Programa formatiu</b>		
<b>Nivell</b>	Grau	
<b>Codi</b>		
<b>Nom</b>		
<b>Semestre</b>		
<b>Crèdits</b>		
<b>Tipologia</b>	Obligatòria/Optativa	
<b>On s'insereix dins del pla d'estudis</b>	Lloc Inicial-Mitjà-Final Forma part d'una especialització interna del grau?	
<b>Principal finalitat de l'assignatura</b>		
<b>Nombre de PACs i quin sentit té la seva ordenació</b>		
<b>Model d'avaluació</b>	Només AC, AC + EX, AC + PS/EX, AC + Pr + Ex, etc.	
<b>Tipus de continguts predominants</b>	Conceptuals/procedimentals/Valors Teòrics-conceptuals / Aplicats-professionals	

### Guió de les preguntes

<b>Les raons de l'abandonament - què passa i com</b>		
<b>Les raons - quina hipòtesi tens tu dels abandonaments a la teva assignatura?</b>		
<b>Quan es dona l'abandonament?</b>		
<b>Com intentar enganxar i motivar més als estudiants d'avaluació continuada?</b>		
<b>Com evitar l'abandonament</b>		

d'avaluació continuada? Mesures de flexibilitat? Problemes de flexibilitzar?		
Mesura ESPRIA - La decisió del PRA ha estat...		
Les raons que han portat a aquesta decisió són ...		
Va considerar també ...	Plantejar una <b>PAC0</b> , obligatòria però no avaluable	
(Sí/No)	Fer alguna acció d'avaluació diagnòstica ( <b>avaluació inicial</b> dels estudiants)	
<b>Sí: Per què finalment no ho va tenir en compte?</b>	<b>Flexibilitzar el temps de lliurament</b> de les primeres PAC	
	Fent un <b>seguiment més individualitzat</b> en les primeres setmanes	
<b>No: Creu que podria aplicar-se a la seva assignatura? Per què sí/no?</b>	<b>Motivar més</b> als estudiants (p.e., oferint <b>diversitat de tipus de recursos</b> )	
	Incloure <b>diferents tipologies d'activitats</b> .	
	Proposar <b>diferents nivells de realització de les PAC</b>	
	Plantejar activitats menys complexes i en paral·lel <b>fer servir tests d'autoavaluació</b> .	
	Oferir un <b>feed-back més personalitzat i de més qualitat</b>	
	Plantejar <b>PACs acumulatives-recuperadores</b> (una PAC posterior permet recuperar una PAC anterior)	
	Oferir la possibilitat de <b>recuperar una PAC no presentada</b>	



## Bibliography

- Abbad, G., Carvalho, R. S., & Zerbini, T. (2006). Evasão em curso via internet: Explorando variáveis explicativas. *RAE-Eletronica*, 5(2). <http://doi.org/10.1590/S1676-56482006000200008>
- Adams, F. (2017). *The impact of declining student persistence in distance learning on American college completion goals*. [Doctoral dissertation, Nova Southeastern University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/2021741783>
- Adedoyin, O. B., & Soykan, E. (2020). Covid-19 pandemic and online learning: The challenges and opportunities. *Interactive learning environments*. <https://doi.org/10.1080/10494820.2020.1813180>
- Aggeli, A., & Vassala, P. (2009). Women in distance learning: Second chance or third shift? In U. Bernath, A. Szücs, A. Tait, & M. Vidal (Eds.), *Distance and e-learning in transition: Learning innovation, technology and social challenges* (pp. 457–472). Wiley-ISTE.
- Ali, A., & Smith, D. (2015). Comparing social isolation effects on students attrition in online versus face-to-face courses in computer literacy. *Issues in Informing Science & Information Technology*, 12, 11–20. <http://doi.org/10.28945/2258>
- Ali, R., & Leeds, E. M. (2009). The impact of face-to-face orientation on online retention: A pilot study. *Online Journal of Distance Learning Administration*, 12(4), 1-11. <https://eric.ed.gov/?id=EJ869281>
- Aljohani, O. (2016). A comprehensive review of the major studies and theoretical models of student retention in higher education. *Higher Education Studies*, 6(2), 1-18. <http://doi.org/10.5539/hes.v6n2p1>
- Allen, J. S. (2017). *Online faculty behaviors that impact student persistence* [Doctoral dissertation, San Diego State University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1983929966>
- Andrews, T., & Tynan, B. (2014). Successful online distance learners: An exploration of learner characteristics and patterns in online learning. In *Challenges for Research into Open & Distance Learning, EDEN RW8 Conference Proceedings, Oxford* (pp. 9-18). [http://www.eden-online.org/wp-content/uploads/2016/05/RW\\_2014\\_Oxford\\_Proceedings\\_NAP.pdf](http://www.eden-online.org/wp-content/uploads/2016/05/RW_2014_Oxford_Proceedings_NAP.pdf)
- Angelino, L. M., & Natvig, D. (2009). A conceptual model for engagement of the online learner. *Journal of Educators Online*, 6(1). <http://www.thejeo.com/Archives/Volume6Number1/Angelinoetalpaper.pdf>
- Angelino, L. M., Williams, F. K., & Natvig, D. (2007). Strategies to engage online students and reduce attrition rates. *Journal of Educators Online*, 4(2). <https://eric.ed.gov/?id=EJ907749>
- Arce, M. E., Crespo, B., & Míguez-Álvarez, C. (2015). Higher education drop-out in Spain—Particular case of universities in Galicia. *International Education Studies*, 8, 247–264. <http://doi.org/10.5539/ies.v8n5p247>

- Arifin, M. H. (2016). Exploring self-motivation in contributing student persistence in the Indonesia Open University. In *9th Annual International Conference of Education, Research and Innovation (ICERI)*. <http://doi.org/10.21125/iceri.2016.1104>
- Arifin, M. H. (2018). The role of student support services in enhancing student persistence in the Open University context: Lesson from Indonesia Open University. *Turkish Online Journal of Distance Education*, *19*(3), 156–168. <https://doi.org/10.17718/tojde.445116>
- Arksey, H. & O'Malley, L. (2005). Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology*, *8*(1), 19-32. <http://doi.org/10.1080/1364557032000119616>
- Armellini, A., & Aiyegbayo, O. (2009). Learning design and assessment with e-tivities. *British Journal of Educational Technology*, *41*(6), 922–935. <https://doi.org/10.1111/j.1467-8535.2009.01013.x>
- Armstrong, R., Hall, B.J., Doyle, J., & Waters, E. (2011). Cochrane Update. 'Scoping the scope' of a Cochrane review. *J Public Health (Oxf)*, *33*(1), 147-50. <http://doi.org/10.1093/pubmed/fdr015>
- Armstrong, S. N., Early, J. O., Burcin, M. M., Bolin, K., Holland, N., & No, S. (2018). New media tools impact on online, health science students' academic persistence and support: Lessons learned from two pilot studies. *TechTrends*, *62*(3), 266–275. <http://doi.org/10.1007/s11528-018-0261-1>
- Aromataris, E. M. Z. (2017). *Joanna Briggs Institute Reviewer's manual* [Internet]. Joanna Briggs Institute, Australia. <https://reviewersmanual.joannabriggs.org/>
- Ashby, A. (2004). Monitoring student retention in the Open University: Definition, measurement, interpretation and action. *Open Learning*, *19*(1), 65–77. <https://doi.org/10.1080/0268051042000177854>
- Astin, A. (1975) *Preventing students from dropping out*. Jossey-Bass.
- Badia, A., & Chumpitaz-Campos, L. (2018). Teachers learn about student learning assessment through a teacher education process. *Studies in Educational Evaluation*, *58*. <https://doi.org/10.1016/j.stueduc.2018.05.004>
- Badia, A., Garcia, C., & Meneses, J. (2019). Emotions in response to teaching online: Exploring the factors influencing teachers in a fully online university. *Innovations in Education and Teaching International*, *56*(4), 446-457. <https://doi.org/10.1080/14703297.2018.1546608>
- Baloo, K. (2018). In-depth profiles of the expectations of undergraduate students commencing university: A Q methodological analysis. *Studies in Higher Education*, *43*(12), 2251-2262. <https://doi.org/10.1080/03075079.2017.1320373>
- Banks, K. L. (2017). *Identifying online graduate learners' perceived barriers to their academic success: A modified Delphi study* [Doctoral dissertation, Northcentral University]. ProQuest Dissertations Publishing. <https://search.proquest.com/pagepdf/1960606550>
- Banks, K. L. (2018). Identifying online graduate learners' perceived barriers to their academic success: A modified Delphi study. In A. B. Scheg & M. Shaw (Eds.), *Fostering effective student communication in online graduate courses* (pp. 193-223). IGI Global.

- Barberà, E., & Clarà, M. (2012). Time in e-Learning research: A qualitative review of the empirical consideration of time in research into e-Learning. *International Scholarly Research Network ISRN Education*, Article ID 640802. <https://doi.org/10.5402/2012/640802>
- Barberà, E., Gros, B., & Kirschner, P.A. (2012). Temporal issues in e-learning research: A literature review. *British Journal of Educational Technology*, 43(2), E53-E55. <https://doi.org/10.1111/j.1467-8535.2011.01255.x>
- Barberà, E., & Reimann, P. (Eds.) (2014). *Assessment and evaluation of time factors in online teaching and learning*. Information Science Reference.
- Barnett, A. E. (2011). Validation experience and persistence among community college students. *The Review of Higher Education*, 34, 193-230. <http://doi.org/10.1353/rhe.2010.0019>
- Bawa, P. (2016). Retention in online courses: Exploring issues and solutions - a literature review. *SAGE Open*, 6(1). <https://doi.org/10.1177/2158244015621777>
- Baxter, J. A. (2012). Who am I and what keeps me going? Profiling the distance learning student in higher education. *International Review of Research in Open and Distributed Learning*, 13(4), 107–129. <https://doi.org/10.19173/irrodl.v13i4.1283>
- Bean, J., & Metzner, B. (1985). A conceptual model of non-traditional undergraduate student attrition. *Review of Educational Research*, 55(4), 485-540. <http://doi.org/10.3102/00346543055004485>
- Becker, J. D. & Schad, M. (2022). Understanding the lived experiences of online learners: Towards a framework for phenomenological research on distance education. *Online Learning*, 26(2), 296-322. <http://doi.org/10.24059/olj.v26i2.2642>
- Beer, C., & Lawson, C. (2017). The problem of student attrition in higher education: An alternative perspective. *Journal of Further and Higher Education*, 41(6), 773-784. <https://doi.org/10.1080/0309877X.2016.1177171>
- Behr, A., Giese, M., Teguin Kamdjou, H. D., & Theune, K. (2020). Dropping out of university: A literature review. *Review of Education*, 8(2), 614–652. <https://doi.org/10.1002/rev3.3202>
- Bennett, S., Agostinho, S., Lockyer, L., & Harper, B. (2009). Researching learning design in open, distance, and flexible learning: Investigating approaches to supporting design processes and practices. *Distance Education*, 30, 175–177. <https://doi.org/10.1080/01587910903023173>
- Bergamin, P. B., Ziska, S., Werlen, E., & Siegenthaler, E. (2012). The relationship between flexible and self-regulated learning in open and distance universities. *International Review of Research in Open and Distributed Learning*, 13(2), 101–123. <https://doi.org/10.19173/irrodl.v13i2.1124>
- Berge, Z. L., & Huang, Y. P. (2004). A model for sustainable student retention: A holistic perspective on the student dropout problem with special attention to e-Learning. *DEOSNEWS*, 13(5). <http://doi.org/10.1.1.129.1495>
- Berger, J.B., Ramirez, G.B., & Lyon, S. (2012). Past to present: A historical look at retention. In A. Seidman, (Ed.), *College student retention: Formula for student success* (pp. 7-34). Rowman & Littlefield.

- Bernardo, A. B., Castro-Lopez, A., & Mujica, A. D. (2022). Editorial: Higher education dropout after COVID-19: New strategies to optimize success. *Frontiers in Psychology, 13*. <https://doi.org/10.3389/fpsyg.2022.880295>
- Bettinger, E., Doss, C., Loeb, S., Rogers, A., & Taylor, E. (2017). The effects of class size in online college courses: Experimental evidence. *Economics of Education Review, 58*, 68–85. <http://doi.org/10.1016/j.econedurev.2017.03.006>
- Bianchi-Laubsch, D. A. (2014). *An examination of the relationship between online learning course delivery method, sense of community, and learner retention* [Doctoral dissertation, Northcentral University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1530298357>
- Bissonette, D. (2017). The promise and perils of asynchronous learning: How faculty, students, and administrators can collaboratively increase retention and satisfaction in the online classroom. *Journal of Pedagogic Development, 7*(3), 13–23. <http://uobrep.openrepository.com/uobrep/handle/10547/622376>
- Blackmon, S. J., & Major, C. (2012). Student experiences in online courses: A qualitative research synthesis. *Quarterly Review of Distance Education, 13*(2), 77–85.
- Bolliger, D. U., & Martin, F. (2018). Instructor and student perceptions of online student engagement strategies. *Distance Education, 39*(4), 568–583. <https://doi.org/10.1080/01587919.2018.1520041>
- Bornschlegl, M., & Cashman, D. (2018). Improving distance student retention through satisfaction and authentic experiences. *International Journal of Online Pedagogy and Course Design, 8*(3), 60–77. <http://doi.org/10.4018/IJOPCD.2018070105>
- Boton, E. C., & Gregory, S. (2015). Minimizing attrition in online degree courses. *Journal of Educators Online, 12*(1), 62–90. <http://doi.org/10.4018/jthi.2009062503>
- Botsch, R. E., & Botsch, C. S. (2012). Audiences and outcomes in online and traditional American government classes revisited. *PS: Political Science and Politics, 45*(3), 493–500. <http://doi.org/10.1017/S104909651200042X>
- Bozkurt, A., Karakaya, K., Turk, M., Karakaya, Ö., & Castellanos-Reyes, D. (2022). The impact of COVID-19 on education: A meta-narrative review. *TechTrends*. <https://doi.org/10.1007/s11528-022-00759-0>
- Bravo-Agapito, J., Romero, S. J., & Pamplona, S. (2021). Early prediction of undergraduate student's academic performance in completely online learning: A five-year study. *Computers in Human Behavior, 115*, 106595. <https://doi.org/10.1016/j.chb.2020.106595>
- Brigham, D. E. (1992). Factors affecting the development of distance education courses. *Distance Education, 13*, 169–192. <https://doi.org/10.1080/0158791920130203>
- Brindley, J. E. (2014). Learner support in online distance education: Essential and evolving. In O. Zawacki-Richter & A. Terry (Eds.), *Online distance education. Towards a research agenda* (pp. 287–310). AU Press.
- Broadbent, J., & Poon, W. (2015). Self-regulated learning strategies & academic achievement in online higher education learning environments: A systematic review. *Internet and Higher Education, 27*, 1–13. <https://doi.org/10.1016/j.iheduc.2015.04.007>

- Brock, K. R. (2014). *Identifying the factors that predict degree completion for entirely online community college students* [Doctoral dissertation, Capella University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1513243695>
- Brown, J. T., Kush, J. M., & Volk, F. A. (2022). Centering the marginalized: The impact of the pandemic on online student retention. *Journal of Student Financial Aid*, 51(1), Article 3. <https://doi.org/10.55504/0884-9153.1777>
- Brown, M., Hughes, H., Keppell, M., Hard, N., & Smith, L. (2015). Stories from students in their first semester of distance learning. *International Review of Research in Open and Distributed Learning*, 16(4). <https://doi.org/10.19173/irrodl.v16i4.1647>
- Bryman, A. (2016). *Social research methods*. Oxford University Press.
- Buck, S. (2016). In their own voices: Study habits of distance education students. *Journal of Library & Information Services in Distance Learning*, 10(3–4), 137–173. <https://doi.org/10.1080/1533290X.2016.1206781>
- Budash, D. E. (2015). *Understanding persistence in an online Master's degree program: A single case study of learners and faculty* [Doctoral dissertation, Northcentral University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1669915980>
- Bunn, J. (2004). Student persistence in a LIS distance education program. *Australian Academic Research Libraries*, 35(3), 253–269. <https://doi.org/10.1080/00048623.2004.10755275>
- Burgess, E. O. (2017). *Attrition and dropouts in the e-learning environment: Improving student success and retention* [Doctoral dissertation, Northcentral University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1908972802>
- Burgos, C., Campanario, M. L., Peña, D. de la, Lara, J. A., Lizcano, D., & Martínez, M. A. (2018). Data mining for modeling students' performance: A tutoring action plan to prevent academic dropout. *Computers and Electrical Engineering*, 66, 541–556. <http://doi.org/10.1016/j.compeleceng.2017.03.005>
- Burmester, L. M., Metscher, D. S., & Smith, M. L. (2014). Analysis of contributing factors to high attrition rates in online educational programs. *International Journal of Professional Aviation Training & Testing Research*, 6(1), 1–17. <http://doi.org/10.1.1.1007.8651>
- Burns, M. (2013). Staying or leaving? Designing for persistence in an online educator training programme in Indonesia. *Open Learning*, 28(2), 141–152. <http://doi.org/10.1080/02680513.2013.851023>
- Butcher, J., & Rose-Adams, J. (2015). Part-time learners in open and distance learning: Revisiting the critical importance of choice, flexibility and employability. *Open Learning*, 30(2), 127–137. <https://doi.org/10.1080/02680513.2015.1055719>
- Calvert, C. E. (2014). Developing a model and applications for probabilities of student success: A case study of predictive analytics. *Open Learning*, 29(2), 160–173. <http://doi.org/10.1080/02680513.2014.931805>
- Cambuzzi, W., Rigo, S. J., & Barbosa, J. L. V. (2015). Dropout prediction and reduction in distance education courses with the learning analytics multitrail approach. *Journal of Universal Computer Science*, 21(1), 23–47. <http://doi.org/10.3217/jucs-021-01-0023>



- Campbell, K., & McAdam, F. (2022). Designing and delivering an online transition programme: A practical application of Zepke and Leach's ten proposals for action. *Widening Participation and Lifelong Learning*, 24(2), 107-125. <https://doi.org/10.5456/WPLL.24.2.107>
- Carney-Crompton, S., & Tan, J. (2002). Support systems, psychological functioning, and academic performance of nontraditional female students. *Adult Education Quarterly*, 52(2), 140-154. <https://doi.org/10.1177/0741713602052002005>
- Carnoy, M., Rabling, B. J., Castaño-Muñoz, J., Montoliu, J. M. D., & Sancho-Vinuesa, T. (2012). Does on-line distance higher education pay off for adult learners? The case of the Open University of Catalonia. *Higher Education Quarterly*, 66(3), 248–271. <https://doi.org/10.1111/j.1468-2273.2012.00520.x>
- Carroll, D. (2008). *Factors affecting the retention and progression of postgraduate Business distance education students* [Master's dissertation, University of Southern Queensland]. USQ Repository. <https://eprints.usq.edu.au/4922/>
- Castells, M. (2000). *The information age: economy, society and culture*. Blackwell.
- Castles, J. (2004). Persistence and the adult learner: Factors affecting persistence in Open University students. *Active Learning in Higher Education*, 5(2), 166–179. <http://doi.org/10.1177/146978740404381>
- Cerezo, R., Esteban, M., Sánchez-Santillán, M., & Núñez, J. C. (2017). Procrastinating behavior in computer-based learning environments to predict performance: A case study in Moodle. *Frontiers in Psychology*, 8. <https://doi.org/10.3389/fpsyg.2017.01403>
- Chavez-Toivanen, M. (2017). *The effect of online learning on degree completion for minority students* [Doctoral dissertation, New Mexico State University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/2001149949>
- Chiyaka, E. T., Sithole, A., Manyanga, F., McCarthy, P., & Bucklein, B. K. (2016). Institutional characteristics and student retention: What integrated postsecondary education data reveals about online learning. *Online Journal of Distance Learning Administration*, XIX(2), 1–10. <https://eric.ed.gov/?id=EJ1106655>
- Choi, H. J. (2016, November). *Theoretical framework for adult dropout in a cyber university*. Paper presented at Online Learning Consortium (OLC) Accelerate 2016, Orlando, FL.
- Choi, H. J., & Kim, B. U. (2018). Factors affecting adult student dropout rates in the Korean cyber-university degree programs. *The Journal of Continuing Higher Education*, 66(1), 1-12. <https://doi.org/10.1080/07377363.2017.1400357>
- Choi, H. J., & Park, J.-H. (2018). Testing a path-analytic model of adult dropout in online degree programs. *Computers & Education*, 116, 130-138. <https://doi.org/10.1016/j.compedu.2017.09.005>
- Chow, W. S., & Shi, S. (2014). Investigating students' satisfaction and continuance intention toward e-learning: An extension of the expectation–confirmation model. *Procedia-Social and Behavioral Sciences*, 141, 1145-1149. <https://doi.org/10.1016/j.sbspro.2014.05.193>
- Chun Chu, A. H., & Choi, J. N. (2005). Rethinking procrastination: Positive effects of "active" procrastination behavior on attitudes and performance. *The Journal of Social Psychology*, 145(3), 245-264. <https://doi.org/10.3200/SOCP.145.3.245-264>

- Clay, M. N., Rowland, S., & Packard, A. (2008). Improving undergraduate online retention through gated advisement and redundant communication. *Journal of College Student Retention: Research, Theory & Practice*, 10(1), 93–102.  
<https://doi.org/10.2190/CS.10.1.g>
- Cochran, J. D., Campbell, S. M., Baker, H. M., & Leeds, E. M. (2014). The role of student characteristics in predicting retention in online courses. *Research in Higher Education*, 55(1), 27–48. <http://doi.org/10.1007/s11162-013-9305-8>
- Conceição, S., & Lehman, R. (2012). Persistence model for online student retention. In J. Herrington et al. (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia, and Telecommunications 2013* (pp. 1913-1922). AACE.  
<http://www.editlib.org/p/112230>
- Conole, G. (2012). *Designing for learning in an open world*. Springer.
- Conway, K., Wladis, C., & Hachey, A. (2021). Time poverty and parenthood: Who has time for college? *AERA Open*, 7(1), 1–17. <https://doi.org/10.1177/23328584211011608>
- Corkin, D. M., Shirley, L. Y., & Lindt, S. F. (2011). Comparing active delay and procrastination from a self-regulated learning perspective. *Learning and Individual Differences*, 21(5), 602-606. <https://doi.org/10.1016/j.lindif.2011.07.005>
- Craig, H., & Riquelme, X. (2013). Developing an online orientation workshop for first-year students in a distance education context. In C. Gera (Ed.), *Proceedings of the 2012 Annual International Conference of the Association of Tertiary Learning Advisors of Aotearoa/New Zealand (ATLAANZ)* (pp. 51 - 60). ATLAANZ.  
<https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.970.9317&rep=rep1&type=pdf#page=60>
- Creelman, A., & Reneland-Forsman, L. (2013). Completion rates - a false trail to measuring course quality? *European Journal of Open, Distance and E-Learning*, 16(2), 40-49.  
<https://www.diva-portal.org/smash/get/diva2:652156/FULLTEXT01.pdf>
- Creswell, J. W., & Plano-Clark, V. L. (2011). *Designing and conducting mixed methods research* (2nd ed.). Sage Publishers.
- Croxton, R. A. (2014). The role of interactivity in student satisfaction and persistence in online learning. *MERLOT Journal of Online Learning and Teaching*, 10(2), 314–325.  
<http://doi.org/10.1016/j.agwat.2006.06.011>
- Cuseo, J. B., Fecas, V. S., & Thompson, A. (2010). *Thriving in college and beyond: Research-based strategies for academic success & personal development* (2nd ed.). Kendall Hunt.
- Daudt, H.M.L., van Mossel, C., & Scott, S. J. (2013). Enhancing the scoping study methodology: A large, inter-professional team’s experience with Arksey and O’Malley’s framework. *BMC Medical Research Methodology*, 13(1).  
<http://doi.org/10.1186/1471-2288-13-48>
- Day, I. N. Z., van Blankenstein, F. M., Westenberg, P. M., & Admiraal, W. F. (2018). Explaining individual student success using continuous assessment types and student characteristics. *Higher Education Research & Development*, 37(5), 937–951.  
<https://doi.org/10.1080/07294360.2018.1466868>

- De Palo, V., Monacis, L., & Sinatra, M. (2019). How self-regulated learning strategies interfere between metacognitions and decisional procrastination. *Psychology, Society & Education, 11*(1), 39-52. <https://doi.org/10.25115/psye.v10i1.1932>
- DeAngelo, L. (2014). Programs and practices that retain students from the first to second year: Results from a national study. *New Directions for Institutional Research, 2013*(160), 53-75. <https://doi.org/10.1002/ir.20061>
- Delnoij, L., Dirkx, K., Janssen, J., & Martens, R. L. (2020). Predicting and resolving non-completion in higher (online) education – A literature review. *Educational Research Review, 29*, Article 100313. <https://doi.org/10.1016/j.edurev.2020.100313>
- Delnoij, L., Janssen, J., Dirkx, K., Gijsselaers, H., de Groot, R. H., Neroni, J., de Bie, M., & Martens, R. (2021). Predicting completion: The road to informed study decisions in higher online education. *Frontiers in Education, 6*. <https://doi.org/10.3389/educ.2021.668922>
- Deschacht, N., & Goeman, K. (2015). The effect of blended learning on course persistence and performance of adult learners: A difference-in-differences analysis. *Computers and Education, 87*, 83–89. <https://doi.org/10.1016/j.compedu.2015.03.020>
- Dews-Farrar, V. (2018). *Students' reflections and experiences in online learning: A qualitative descriptive inquiry of persistence* [Doctoral dissertation, Grand Canyon University]. ProQuest Dissertations & Theses Global. <https://search.proquest.com/docview/2036952458>
- Dexter, P. D. (2015). *The influence of engagement upon success and persistence of online undergraduates* [Doctoral dissertation, University of Southern Maine]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1728895868>
- Doherty, W. (2006). An analysis of multiple factors affecting retention in web-based community college courses. *Internet and Higher Education, 9*, 245–255. <https://doi.org/10.1016/j.iheduc.2006.08.004>
- Donnelly, W. (2014). *A phenomenological investigation of adult student attrition in community college online courses* [Doctoral dissertation, University of Phoenix]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1634244043>
- Duckett, Y. A. (2014). *Motivated to finish: A phenomenological study on persistence to graduation in asynchronous doctoral programs* [Doctoral dissertation, Grand Canyon University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1615359748>
- Duncheon, J. C., & Tierney, W. G. (2013). Changing conceptions of time: Implications for educational research and practice. *Review of Educational Research, 83*(2), 236-272. <https://doi.org/10.3102/0034654313478492>
- Eliasquevici, M. K., Seruffo, M. C. da R., & Resque, S. N. F. (2017). Persistence in distance education: A study case using Bayesian network to understand retention. *International Journal of Distance Education Technologies, 15*(4), 61–78. <https://doi.org/10.4018/IJDET.2017100104>
- Eller, A. M., Araujo, B. B., & Araujo, D. B. (2016). Balancing work, study and home: A research with master's students in a Brazilian university. *RAM. Revista de Administração Mackenzie, 17*(3), 60- 83.



- Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of advanced nursing*, 62(1), 107-115. <https://doi.org/10.1111/j.1365-2648.2007.04569.x>
- Elvers, G. C., Polzella, D. J., & Graetz, K. (2003). Procrastination in online courses: Performance and attitudinal differences. *Teaching of Psychology*, 30(2), 159-162. [https://doi.org/10.1207/S15328023TOP3002\\_13](https://doi.org/10.1207/S15328023TOP3002_13)
- Escobedo, G. (2007). A retention/persistence intervention model: Improving success across cultures. *Journal of Developmental Education*, 31(1), 12-37. <https://www.questia.com/library/journal/1P3-1447133151/a-retention-persistence-intervention-model-improving>
- Estes, J. S. (2016). The pivotal role of faculty in online student engagement and retention. In L. Kyei-Blankson, J. Blankson, E. Ntuli, & C. Agyeman (Eds.), *Handbook of research on strategic management of interaction, presence, and participation in online courses* (pp. 65-87). IGI Global. <http://doi.org/10.4018/978-1-4666-9582-5.ch003>
- Farrell, O., & Brunton, J. (2020). A balancing act: A window into online student engagement experiences. *International Journal of Educational Technology in Higher Education*, 17(1), 1-19. <https://doi.org/10.1186/s41239-020-00199-x>
- Faulconer, E. K., Griffith, J., Wood, B., Acharyya, S., & Roberts, D. (2018). A comparison of online, video synchronous, and traditional learning modes for an introductory undergraduate Physics course. *Journal of Science Education and Technology*, 27(5), 404–411. <http://doi.org/10.1007/s10956-018-9732-6>
- Feldman, R. (Ed.). (2018). *The first year of college: Research, theory, and practice on improving the student experience and increasing retention*. Cambridge University Press.
- Fernández-Mellizo, M. (2022). *Análisis del abandono de los estudiantes de grado en las universidades presenciales en España*. Ministerio de Universidades, Gobierno de España. [https://www.universidades.gob.es/stfls/universidades/ministerio/ficheros/Informe\\_Abandono\\_Universitario\\_completo\\_MFMS.pdf](https://www.universidades.gob.es/stfls/universidades/ministerio/ficheros/Informe_Abandono_Universitario_completo_MFMS.pdf)
- Fetters, M. D., Curry, L. A., & Creswell, J. W. (2013). Achieving integration in mixed methods designs - Principles and practices. *Health services research*, 48(6), 2134-2156. <https://doi.org/10.1111/1475-6773.12117>
- Figueira, R. J. (2015). *The applicability of Tinto's model of student retention in online learning: A faculty perspective* [Doctoral dissertation, Wilmington University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1754646297>
- Fowler, M., & Luna, G. (2009). High school and college partnerships: Credit-based transition programs. *American Secondary Education*, 38(1), 62-76. <https://www.jstor.org/stable/41406067>
- Franklin, M. (2015). Keys to success in the online accounting classroom to maximize student retention. *Journal of Higher Education Theory and Practice*, 15(5), 36–45. <https://search.proquest.com/docview/1749280572>
- Franko, D. L. (2015). *Increasing online academic success and persistence in higher education using coaching* [Doctoral dissertation, Northcentral University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1666807845>

- Fraser, J., Fahlman, D. (Willy), Arscott, J., & Guillot, I. (2018). Pilot testing for feasibility in a study of student retention and attrition in online undergraduate programs. *International Review of Research in Open and Distributed Learning*, 19(1). <http://doi.org/10.19173/irrodl.v19i1.3326>
- Gangaram, J. (2015). *Blended and online student performance and persistence: A comparative study* [Doctoral dissertation, Northcentral University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1660971334>
- Gardner, M. L. (2016). *A professional development certification program for instructors teaching in the online environment and student completion and success rates at a Midwestern community college: An ex post facto study* [Doctoral dissertation, University of Nebraska]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1861717340>
- Garratt-Reed, D., Roberts, L. D., & Heritage, B. (2016). Grades, student satisfaction and retention in online and face-to-face introductory psychology units: A test of equivalency theory. *Frontiers in Psychology*, 7, 1–10. <http://doi.org/10.3389/fpsyg.2016.00673>
- Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *Internet and Higher Education*, 2(2), 87-105. [http://doi.org/10.1016/S1096-7516\(00\)00016-6](http://doi.org/10.1016/S1096-7516(00)00016-6)
- Gaytan, J. (2015). Comparing faculty and student perceptions regarding factors that affect student retention in online education. *American Journal of Distance Education*, 29(1), 56–66. <http://doi.org/10.1080/08923647.2015.994365>
- Gazza, E. A., & Hunker, D. F. (2014). Facilitating student retention in online graduate nursing education programs: A review of the literature. *Nurse Education Today*, 34(7), 1125–1129. <http://doi.org/10.1016/j.nedt.2014.01.010>
- Geduld, B. (2016). Exploring differences between self-regulated learning strategies of high and low achievers in open distance learning. *Africa Education Review*, 13(1), 164-181. <https://doi.org/10.1080/18146627.2016.1182739>
- George, A.-J., McEwan, A., & Tarr, J.-A. (2021). Accountability in educational dialogue on attrition rates: Understanding external attrition factors and isolation in online law school. *Australasian Journal of Educational Technology*, 37(1), 111-132. <https://doi.org/10.14742/ajet.6175>
- Giannaris, S. B. (2016). *Nonnative English language speakers' retention in online Doctoral programs: A case study* [Doctoral dissertation, Keiser University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1785396227>
- Gibbs, G., Regan, P., & Simpson, O. (2006). Improving student retention through evidence based proactive systems at the Open University (UK). *Journal of College Student Retention: Research, Theory & Practice*, 8(3), 359-376. <https://doi.org/10.2190/2296-8237-8743-NW7P>
- Gilgun, J. F. (1994). A case for case studies in social work research. *Social Work*, 39(4), 371-380. <https://doi.org/10.1093/sw/39.4.371>
- Glazer, H. R., & Murphy, J. A. (2015). Optimizing success: A model for persistence in online education. *American Journal of Distance Education*, 29(2), 135–144. <http://doi.org/10.1080/08923647.2015.1023093>

- Glazier, R. A. (2016). Building rapport to improve retention and success in online classes. *Journal of Political Science Education*, 12(4), 437–456. <https://doi.org/10.1080/15512169.2016.1155994>
- González, E. (2015). Motivation and retention: A comparison between fully online students and on-campus students taking online courses. *The Online Journal of Distance Education and E-Learning*, 3(3), 33–48. Retrieved from <https://tojdel.net/journals/tojdel/articles/v03i03/v03i03-06.pdf>
- González, L., Aracil, X., Serres, J., Calvo, A., Minguillón, J., & Meneses, J. (2020). Evaluando el proceso para asegurar los resultados: Experiencia de una intervención institucional orientada a la retención de los estudiantes de primer año. In C. Lindín, M. B. Esteban, J. C. F. Bergmann, N. Castells., & P. Rivera-Vargas (Eds.), *Llibre d'Actes de la I Conferència Internacional de Recerca en Educació (IRED '19): Reptes, Tendències i Compromisos* (pp. 1016-1024). Institut de Recerca en Educació, Universitat de Barcelona. <http://www.ub.edu/ired19>
- González, L., Minguillón, J., Martínez-Aceituno, J. A., & Meneses, J. (2018). Institutional support to provide freshmen with flexible learning paths at course and semester level in open higher education. In J. M. Duart, & A. Szucs (Eds.), *Proceedings of the 10th EDEN Research Workshop: Towards Personalized Guidance and Support for Learning* (pp. 348-354). European Distance and E-Learning Network. [https://proceedings.eden-online.org/wp-content/uploads/2018/11/RW10\\_2018\\_Barcelona\\_Proceedings\\_ISSN.pdf](https://proceedings.eden-online.org/wp-content/uploads/2018/11/RW10_2018_Barcelona_Proceedings_ISSN.pdf)
- Gough, D., & Thomas, J. (2016). Commonality and diversity in reviews. In D. Gough, S. Oliver, & J. Thomas (Eds.), *An introduction to systematic reviews* (pp. 35-65). London: SAGE.
- Grant, R., Olivier, G., Rawlings, C., & Ross, C. (2011). *Enhancing the engagement and success of distance students through targeted support programmes* (Working Papers No. 11-1). Open Polytechnic of New Zealand. <http://hdl.handle.net/11072/1322>
- Grau-Valldosera, J. (2019). *A dropout definition for continuance intention and effective re-enrolment models in online distance learning* [Doctoral dissertation, Universitat Oberta de Catalunya]. UOC Repository. <http://hdl.handle.net/10609/112746>
- Grau-Valldosera, J. & Minguillón, J. (2013). When procrastination leads to dropping out: Analysing students at risk. *eLC Research Paper Series*, 6, 63-74. <https://elcrps.uoc.edu/elcrps/index.php/elcrps/article/view/1872.html>
- Grau-Valldosera, J., & Minguillón, J. (2014). Rethinking dropout in online higher education: The case of the Universitat Oberta de Catalunya. *International Review of Research in Open and Distributed Learning*, 15(1), 290-308. <https://doi.org/10.1080/10494820.2018.1470986>
- Grau-Valldosera, J., Minguillón, J., & Blasco-Moreno, A. (2018). Returning after taking a break in online distance higher education: From intention to effective re-enrollment. *Interactive Learning Environments*, 27(3), 307-323. <https://doi.org/10.1080/10494820.2018.1470986>
- Greenland, S. J., & Moore, C. (2014). Patterns of online student enrolment and attrition in Australian open access online education: a preliminary case study. *Open Praxis*, 6(1), 45–54. <https://doi.org/10.5944/openpraxis.6.1.95>

- Greenland, S. J., & Moore, C. (2022). Large qualitative sample and thematic analysis to redefine student dropout and retention strategy in open online education. *British Journal of Educational Technology*, 53(3), 647-667.  
<https://doi.org/10.1111/bjet.13173>
- Gregori, P., Martínez, V., & Moyano-Fernández, J. J. (2018). Basic actions to reduce dropout rates in distance learning. *Evaluation and Program Planning*, 66, 48–52.  
<http://doi.org/10.1016/j.evalprogplan.2017.10.004>
- Gubrium, J. F., & Holstein, J. A. (2002). *Handbook of interview research: Context and method*. Sage Publishers.
- Gunduz, M., & Karaman, S. (2020). Open education faculty and distance education students' dropout reasons: The case of a Turkish State University. *Open Praxis*, 12(1), 7-25.  
<https://doi.org/10.5944/openpraxis.12.1.970>
- Guo, F., Hong, X., & Coates, H. (2020). Accelerated transformation: Designing global online higher education. *Higher Education Research & Development*, 39(7), 1322-1326.  
<https://doi.org/10.1080/07294360.2020.1824209>
- Guri-Rosenblit, S., & Gros, B. (2011). E-Learning: Confusing terminology, research gaps and inherent challenges. *International Journal of E-Learning & Distance Education*, 25(1). <https://www.ijede.ca/index.php/jde/article/view/729>
- Hachey, A., Wladis, C., & Conway, K. (2012). Is the second time the charm? Investigating trends in online re-enrollment, retention and success. *Journal of Educators Online*, 9(1). <https://files.eric.ed.gov/fulltext/EJ972049.pdf>
- Hachey, A., Wladis, C., & Conway, K. (2013). Balancing retention and access in online courses: Restricting enrollment... Is it worth the cost? *Journal of College Student Retention: Research, Theory & Practice*, 15(1), 9–36.  
<https://doi.org/10.2190/CS.15.1.b>
- Hachey, A., Wladis, C., & Conway, K. (2014). Do prior online course outcomes provide more information than G.P.A. alone in predicting subsequent online course grades and retention? An observational study at an urban community college. *Computers & Education*, 72, 59–67. <https://doi.org/10.1016/j.compedu.2013.10.012>
- Hachey, A., Wladis, C., & Conway, K. (2018). What factors influence student decisions to drop online courses? Comparing online and face-to-face sections. *EDEN 2018 Conference Proceedings* (pp. 99-107). <https://doi.org/10.38069/edenconf-2018-ac-0015>
- Han, X., Wang, Y., & Jiang, L. (2019). Towards a framework for institution-wide quantitative assessment of teacher's online participation in blended learning implementation. *Internet and Higher Education*, 42, 1–12.  
<https://doi.org/10.1016/j.iheduc.2019.03.003>
- Hannah, M. B. (2017). *Experiences of learning online among adult learners and the relationship engaging activities have on satisfaction and retention* [Doctoral dissertation, Northcentral University]. ProQuest Dissertations Publishing.  
<https://search.proquest.com/docview/1883861966>
- Harris, K. K. (2015). *An examination of the relationship of course evaluations to student retention and student success in the community college online classroom* [Doctoral

- dissertation, Mississippi State University]. ProQuest Dissertations Publishing.  
<https://search.proquest.com/docview/1747435187>
- Hart, C. (2012). Factors associated with student persistence in an online program of study: A review of the literature. *Journal of Interactive Online Learning*, 11(1), 19–42.  
<http://www.ncolr.org/jiol/issues/pdf/11.1.2.pdf>
- Hart, C. (2014). Development of a persistence scale for online education in Nursing. *Nursing Education Perspectives*, 35(3), 150–156. <http://doi.org/10.5480/12-993.1>
- Hasan, U. C. A. R., Bozkurt, A., & Zawacki-Richter, O. (2021). Academic procrastination and performance in distance education: a causal-comparative study in an online learning environment. *Turkish Online Journal of Distance Education*, 22(4), 13-23.  
<https://doi.org/10.17718/tojde.1002726>
- Haydarov, R., Moxley, V., & Anderson, D. (2012). Counting chickens before they are hatched: An examination of student retention, graduation, attrition, and dropout measurement validity in an online master’s environment. *Journal of College Student Retention: Research, Theory and Practice*, 14(4), 429-449.  
<http://doi.org/10.2190/CS.14.4a>
- Heald, S. M. (2018). *Exploring the implementation of synchronous student support sessions and student retention in an online course* [Doctoral dissertation, University of the Rockies]. ProQuest Dissertations Publishing.  
<https://search.proquest.com/docview/2075951418>
- Heberle, H., Meirelles, G. V., da Silva, F. R., Telles, G. P., & Minghim, R. (2015). InteractiVenn: a web-based tool for the analysis of sets through Venn diagrams. *BMC bioinformatics*, 16(1), 169. <http://doi.org/10.1186/s12859-015-0611-3>
- Heidrich, L., Victória Barbosa, J. L., Cambuzzi, W., Rigo, S. J., Martins, M. G., & dos Santos, R. B. S. (2018). Diagnosis of learner dropout based on learning styles for online distance learning. *Telematics and Informatics*, 35(6), 1593–1606.  
<http://doi.org/10.1016/j.tele.2018.04.007>
- Henry, M. (2018). *The online student experience: An exploration of first-year university students’ expectations, experiences and outcomes of online education*. [Doctoral dissertation, Edith Cowan University]. ECU Repository.  
<https://ro.ecu.edu.au/theses/2059>
- Henry, M. (2020). Online student expectations: A multifaceted, student-centred understanding of online education. *Student Success*, 11(2), 91-98.  
<https://doi.org/10.5204/ssj.1678>
- Henry, M. (2021). The online student experience: A MAC-ICE thematic structure. *Australasian Journal of Educational Technology*, 37(4), 159–172.  
<https://doi.org/10.14742/ajet.6619>
- Hewitt, L., & Rose-Adams, J. (2012). What ‘retention’ means to me: The position of the adult learner in student retention. *Widening Participation & Lifelong Learning*, 1(4), 146-164. <http://doi.org/10.5456/WPLL.14.S.146>
- Heyman, E. (2010). Overcoming student retention issues in higher education online programs. *Online Journal of Distance Learning Administration*, 13(4), 1–10.



- Hilton III, J., Fischer, L., Wiley, D., & William, L. (2016). Maintaining momentum toward graduation: OER and the course throughput rate. *International Review of Research in Open and Distributed Learning*, 17(6). <http://doi.org/10.19173/irrodl.v17i6.2686>
- Holcomb, J., Jackson, J., Korstange, R., & Hall, J. (2018, May 8). From first steps to next steps: The Online First Year Experience (OFYE), Part 1. *The Evollution*. [https://evollution.com/revenue-streams/distance\\_online\\_learning/from-first-steps-to-next-steps-the-online-first-year-experience-ofye-part-1/](https://evollution.com/revenue-streams/distance_online_learning/from-first-steps-to-next-steps-the-online-first-year-experience-ofye-part-1/)
- Holder, B. (2007). An investigation of hope, academics, environment, and motivation as predictors of persistence in higher education online programs. *Internet and Higher Education*, 10(4), 245–260. <https://doi.org/10.1016/j.iheduc.2007.08.002>
- Hong, J. C., Lee, Y. F., & Ye, J. H. (2021). Procrastination predicts online self-regulated learning and online learning ineffectiveness during the coronavirus lockdown. *Personality and Individual Differences*, 174, 110673. <https://doi.org/10.1016/j.paid.2021.110673>
- Hongwei, Y. (2015). Student retention at two-year community colleges: A structural equation modeling approach. *International Journal of Continuing Education and Lifelong Learning*, 8(1), 85-101. Retrieved from <http://hdl.voced.edu.au/10707/418486>
- Horvath, D., Stirling, E., Bevacqua, J., Coldrey, M., Buultjens, P., Buultjens, M., & Larsen, A. (2019). Plan, prepare and connect: How investing in understanding and tracking the evolving needs of online students informs the development of targeted programs for transition and success. *Journal of University Teaching & Learning Practice*, 16(1). <https://doi.org/10.53761/1.16.1.4>
- Houlden, S., & Veletsianos, G. (2019). A posthumanist critique of flexible online learning and its “anytime anyplace” claims. *British Journal of Educational Technology*, 50(3), 1005-1018. <https://doi.org/10.1111/bjet.12779>
- Houlden, S., & Veletsianos, G. (2021). The problem with flexible learning: Neoliberalism, freedom, and learner subjectivities. *Learning, Media and Technology*, 46(2), 144-155. <https://doi.org/10.1080/17439884.2020.1833920>
- Hovdhaugen, E. (2015). Working while studying: The impact of term-time employment on dropout rates. *Journal of Education and Work*, 28(6), 631–651. <https://doi.org/10.1080/13639080.2013.869311>
- Huggins, J. A. (2016). *Exploring at-risk students' barriers and supports in online learning* [Doctoral dissertation, Nipissing University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1927182117>
- Hülsmann, T., Barberà, E., & Roberts, J. (2015). Editorial: Distance education and time. *Distance Education*, 36(2), 155–160. <http://doi.org/10.1080/01587919.2015.1056333>
- Huntington-Klein, N., Cowan, J., & Goldhaber, D. (2017). Selection into online community college courses and their effects on persistence. *Research in Higher Education*, 58(3), 244–269. <http://doi.org/10.1007/s11162-016-9425-z>
- Hyllegard, D., Deng, H., & Hunter, C. (2008). Why do students leave online courses? Attrition in community college distance learning courses. *International Journal of Instructional Media*, 35(4), 429-434. <https://link.gale.com/apps/doc/A273359032/AONE?u=anon~d10f0403&sid=googleScholar&xid=cc2cfc27>

- Ilgaz, H., & Gülbahar, Y. (2015). A snapshot of online learners: E-readiness, e-satisfaction and expectations. *International Review of Research in Open and Distance Learning*, 16(2). <https://doi.org/10.19173/irrodl.v16i2.2117>
- Inkelaar, T., & Simpson, O. (2015). Challenging the ‘distance education deficit’ through ‘motivational emails.’ *Open Learning*, 30(2), 152–163. <http://doi.org/10.1080/02680513.2015.1055718>
- James, H. (2020). *Stop-out factors for nontraditional students in online competency-based education programs* [Doctoral dissertation, University of New England]. UNE Repository. <https://dune.une.edu/theses/297/>
- James, R., Krause, K.-L., & Jennings, C. (2010). *The first year experience in Australian universities: Findings from 1994 to 2009*. Centre for Studies in Higher Education, University of Melbourne.
- James, S., Swan, K., & Daston, C. (2016). Retention, progression and the taking of online courses. *Journal of Asynchronous Learning Network*, 20(2), 75–96. <http://doi.org/10.2147/TACG.S78241>
- Jelfs, A., & Richardson, J. T. (2013). The use of digital technologies across the adult life span in distance education. *British Journal of Educational Technology*, 44(2), 338-351. <https://doi.org/10.1111/j.1467-8535.2012.01308.x>
- Johnson, A. B. (2017). *Military-connected students in online learning programs: Students’ perceptions of personal academic perseverance* [Doctoral dissertation, Drexel University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/2008188469>
- Johnson, C. (2015). *Understanding doctoral success factors in online education programs* [Doctoral dissertation, Walden University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/2008188469>
- Johnston, V., & Simpson, O. (2006). Retentioneering higher education in the UK: Attitudinal barriers to addressing student retention in universities. *Widening Participation and Lifelong Learning*, 8(3), 28–36.
- Kahu, E. R., Stephens, C., Zepke, N., & Leach, L. (2014). Space and time to engage: Mature-aged distance students learn to fit study into their lives. *International Journal of Lifelong Education*, 33(4), 523–540. <https://doi.org/10.1080/02601370.2014.884177>
- Kara, M., Erdoğan, F., Kokoç, M., & Cagiltay, K. (2019). Challenges faced by adult learners in online distance education: A literature review. *Open Praxis*, 11(1), 5-22. <https://doi.org/10.5944/openpraxis.11.1.929>
- Katiso, A. E. (2015). *Online adult students’ time management skills and their academic achievement and persistence: Technology-based learning and student success* [Doctoral dissertation, Keyser University]. ProQuest Dissertations & Theses Global. <https://www.proquest.com/docview/1783598302/>
- Kauffmann, H. (2015). A review of predictive factors of student success in and satisfaction with online learning. *Research in Learning Technology*, 23: 26507. <http://dx.doi.org/10.3402/rlt.v23.26507>
- Kember, D. (1989). A longitudinal-process model of drop-out from distance education. *The Journal of Higher Education*, 60(3), 278-301. <https://doi.org/10.1080/00221546.1989.11775036>

- Kember, D. (1995). *Open learning courses for adults: A model of student progress*. Educational Technology Publications.
- Kember, D. (1999) Integrating part-time study with family, work and social obligations. *Studies in Higher Education*, 24(1), 109-124.  
<https://doi.org/10.1080/03075079912331380178>
- Kember, D., & Leung, D. (2004). Relationship between the employment of coping mechanisms and a sense of belonging for part-time students. *Educational Psychology*, 24(3), 345-357. <https://doi.org/10.1080/0144341042000211689>
- Kember, D., Leung, D., & Prosser, M. (2021). Has the open door become a revolving door? The impact on attrition of moving from elite to mass higher education. *Studies in Higher Education*, 46(2), 258-269. <https://doi.org/10.1080/03075079.2019.1629411>
- Kember, D., Trimble, A., & Fan, S. (2022). An investigation of the forms of support needed to promote the retention and success of online students. *American Journal of Distance Education*. <https://doi.org/10.1080/08923647.2022.2061235>
- Kember, D., Ying, C. K., Wan, C. S., Yung, C. S., Wai, C. T., et al. (2005). How students cope with part-time study. *Active Learning in Higher Education*, 6(3), 230-242.  
<https://doi.org/10.1177/1469787405057662>
- Kemp, W. C. (2002). Persistence of adult learners in distance education. *The American Journal of Distance Education*, 16(2), 65-81.  
<http://www.icde.org/American+Journal+of+Distance+Education.9UFRvWwo.ips>
- Kergel, D., Heidkamp, B., Telléus, P. K., Rachwal, T., & Nowakowski, S. (Eds.) (2018). *The digital turn in higher education: International perspectives on learning and teaching in a changing world*. Springer. <https://doi.org/10.1007/978-3-658-19925-8>
- Khalil, H., Peters, M., Godfrey, C.M., McInerney, P., Soares, C.B., & Parker, D. (2016). An evidence-based approach to scoping reviews. *Worldviews on Evidence-Based Nursing*, 3(2), 118-123. <http://doi.org/10.1111/wvn.12144>
- Kilburn, A., Kilburn, B., & Cates, T. (2014). Drivers of student retention: System availability, privacy, value and loyalty in online higher education. *Academy of Educational Leadership Journal*, 18(4), 1–15.  
<https://search.proquest.com/pagepdf/1645851174>
- Kim, K. R., & Seo, E. H. (2015). The relationship between procrastination and academic performance: A meta-analysis. *Personality and Individual Differences*, 82, 26-33.  
<https://doi.org/10.1016/j.paid.2015.02.038>
- Klingsieck, K. B., Fries, S., Horz, C., & Hofer, M. (2012). Procrastination in a distance university setting. *Distance Education*, 33(3), 295-310.  
<https://doi.org/10.1080/01587919.2012.723165>
- Knestrick, J. M., Wilkinson, M. R., Pellathy, T. P., Lange-Kessler, J., Katz, R., & Compton, P. (2016). Predictors of retention of students in an online nurse practitioner program. *Journal for Nurse Practitioners*, 12(9), 635–640.  
<https://doi.org/10.1016/j.nurpra.2016.06.011>
- Kocdar, S., Karadeniz, A., Bozkurt, A., & Buyuk, K. (2018). Measuring self-regulation in self-paced open and distance learning environments. *International Review of Research in Open and Distributed Learning*, 19(1), 25–43.  
<https://doi.org/10.19173/irrodl.v19i1.3255>



- Koehnke, P. J. (2013). *The impact of an online orientation to improve community college student retention in online courses: An action research study* [Doctoral dissertation, Capella University]. ProQuest Dissertations & Theses Global. <https://www.proquest.com/docview/1426441123>
- Korstange, R., Hall, J., Holcomb, J., & Jackson, J. (2020). The online first-year experience: Defining and illustrating a new reality. *Adult Learning, 31*(3), 95-108. <https://doi.org/10.1177/1045159519892680>
- KPMG (2020). *The future of higher education in a disruptive world*. <https://home.kpmg/xx/en/home/industries/government-public-sector/education/the-future-of-higher-education-in-a-disruptive-world.html>
- Kuo, Y. C., Walker, A. E., Schroder, K. E. E., & Belland, B. R. (2014). Interaction, internet self-efficacy, and self-regulated learning as predictors of student satisfaction in online education courses. *Internet and Higher Education, 20*, 35-50. <https://doi.org/10.1016/j.iheduc.2013.10.001>
- Kyger, J. W. (2008). *A study of synchronous and asynchronous learning environments in an online course and their effect on retention rates* [Doctoral dissertation, Texas A&M University]. ProQuest Dissertations Publishing. <https://www.proquest.com/docview/304824729>
- Laing, C. L., & Laing, G. K. (2015). A conceptual framework for evaluating attrition in online courses. *E-Journal of Business Education & Scholarship of Teaching, 9*(2), 39–55. [http://doi.org/10.1007/978-3-662-44611-9\\_6](http://doi.org/10.1007/978-3-662-44611-9_6)
- Lakhal, S., & Bazinet, N. (2015). Technological factors explaining student dropout from online courses in higher education: a review. In *Proceedings of EdMedia 2015-World Conference on Educational Media and Technology* (pp. 1806–1811). <https://www.learntechlib.org/p/151456>
- Larsen, M. S., Kornbeck, K. P., Kristensen, R., Larsen, M. R. & Sommersel, H. B. (2013) *Dropout phenomena at universities: What is dropout? Why does dropout occur? What can be done by the universities to prevent or reduce it? A systematic review*. Danish Clearinghouse for Educational Research. [https://edudoc.ch/record/115243/files/Dropout\\_universities\\_technical\\_report.pdf](https://edudoc.ch/record/115243/files/Dropout_universities_technical_report.pdf)
- Lee, K., Choi, H., & Cho, Y. (2019). Becoming a competent self: A developmental process of adult distance learning. *Internet and Higher Education, 41*, 25-33. <https://doi.org/10.1016/j.iheduc.2018.12.001>
- Lee, S. J., Lee, H., & Kim, T. T. (2018). A study on the instructor role in dealing with mixed contents: How it affects learner satisfaction and retention in e-learning. *Sustainability (Switzerland), 10*(3). <http://doi.org/10.3390/su10030850>
- Lee, Y., & Choi, J. (2011). A review of online course dropout research: Implications for practice and future research. *Educational Technology Research and Development, 59*, 593–618. <https://doi.org/10.1007/s11423-010-9177-y>
- Lee, Y., Choi, J., & Kim, T. (2013). Discriminating factors between completers of and dropouts from online learning courses. *British Journal of Educational Technology, 44*(2), 328-337. <https://doi.org/10.1111/j.1467-8535.2012.01306.x>

- Lehan, T. J., Hussey, H. D., & Shriner, M. (2018). The influence of academic coaching on persistence in online graduate students. *Mentoring & Tutoring: Partnership in Learning*, 26(3), 289-304. <https://doi.org/10.1080/13611267.2018.1511949>
- Leung, L., & Chen, C. (2018). A review of media addiction research from 1991 to 2016. *Social Science Computer Review*. <http://doi.org/10.1177/0894439318791770>
- Levac, D., Colquhoun, H., & O'Brien, K. K. (2010). Scoping studies: advancing the methodology. *Implement Sci*, 5(1). <http://doi.org/10.1186/1748-5908-5-69>
- Levitz, R. S., Noel, L., & Richter, B. J. (1999). Strategic moves for retention success. *New directions for higher education*, 1999(108), 31-49. <https://eric.ed.gov/?id=EJ601663>
- Levy, Y., & Ramim, M. M. (2017). The e-learning skills gap study: Initial results of skills desired for persistence and success in online engineering and computing courses. In *Proceedings of the 12th Chais Conference for the Study of Innovation and Learning Technologies: Learning in the Technological Era*, 57E-68E. [http://www.openu.ac.il/innovation/chais2017/a1\\_2.pdf](http://www.openu.ac.il/innovation/chais2017/a1_2.pdf)
- Li, K., & Wong, B. T. M. (2019). Factors related to student persistence in open universities: Changes over the years. *International Review of Research in Open and Distributed Learning*, 20(4), 132-151. <https://doi.org/10.19173/irrodl.v20i4.4103>
- Li, K., Wong, B. Y. Y. (2018). Revisiting the definitions and implementation of flexible learning. In K. Li, K. Yuen, & B. Wong (Eds.), *Innovations in open and flexible education* (pp. 3-13). Springer. [https://doi.org/10.1007/978-981-10-7995-5\\_1](https://doi.org/10.1007/978-981-10-7995-5_1)
- Li, N., Marsh, V., Rienties, B., & Whitelock, D. (2017). Online learning experiences of new versus continuing learners: A large-scale replication study. *Assessment & Evaluation in Higher Education*, 42(4), 657-672. <https://doi.org/10.1080/02602938.2016.1176989>
- Li, Q., Zhou, X., Bostian, B., Xu, D. (2021). How can we improve online learning at community colleges? Voices from online instructors and students. *Online Learning*, 25(3), 157-190. <https://doi.org/10.24059/olj.v25i3.2362>
- Libby, M., & Catherine, F. (2008). Best practices in predicting and encouraging student persistence and achievement online. *Journal of College Student Retention: Research, Theory & Practice*, 10(1), 55-64. <http://doi.org/10.2190/CS.10.1.e>
- Lim, J. M. (2016). Predicting successful completion using student delay indicators in undergraduate self-paced online courses. *Distance Education*, 37(3), 317-332. <http://doi.org/10.1080/01587919.2016.1233050>
- Loomis, K. D. (2000). Learning styles and asynchronous learning: Comparing the LASSI model to class performance. *Journal of Asynchronous Learning Networks*, 4(1), 23-32.
- Lowe-Madkins, M. (2016). *The influence of building social presence and sense of community in online learning: A meta-analysis on student satisfaction and retention* [Doctoral dissertation, Northern Illinois University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1824361664>
- Lucey, K. (2018). *The effect of motivation on student persistence in online higher education: A phenomenological study of how adult learners experience motivation in a web-based distance learning environment* [Doctoral dissertation, Duquesne University]. DUQ Repository. <https://dsc.duq.edu/etd/1449>

- Macy, T. V. (2015). *The effect of web-based instruction on retention of non-traditional students in a rural comprehensive university* [Doctoral dissertation, Eastern Kentucky University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1969128804>
- Mahmodi, M., & Ebrahimzade, I. (2015). The analysis of Iranian students' persistence in online education. *International Review of Research in Open and Distance Learning*, 16(1), 98–119. <http://doi.org/10.19173/irrodl.v16i1.1982>
- Manca, S., Grion, V., Armellini, A., & Devecchi, C. (2017). Editorial: Student voice. Listening to students to improve education through digital technologies. *British Journal of Educational Technology*, 48(5), 1075–1080. <https://doi.org/10.1111/bjet.12568>
- Marshall, L. (2017). *Impact of online orientation for first-time online students on retention, academic success, and persistence* [Doctoral dissertation, Walden University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1969128804>
- Martin, F., Wang, C., & Sadaf, A. (2020). Facilitation matters: Instructor perception of helpfulness of facilitation strategies in online courses. *Online Learning*, 24(1), 28–49. <https://doi.org/10.24059/olj.v24i1.1980>
- Martin, J. M. (2017). It just didn't work out: Examining nonreturning students' stories about their freshman experience. *Journal of College Student Retention: Research, Theory and Practice*, 19(2), 176–198. <https://doi.org/10.1177/1521025115611670>
- Martinez, M. (2003). High attrition rate in e-learning: Challenges, predictors, and solutions. *The eLearning Developers' Journal*, 1-7. Retrieved from <https://www.elearningguild.com/pdf/2/071403MGT-L.pdf>
- Martínez-Argüelles, M. J., & Batalla-Busquets, J. M. (2016). Perceived service quality and student loyalty in an online university. *International Review of Research in Open and Distributed Learning*, 17(4), 264-279. <https://doi.org/10.19173/irrodl.v17i4.2518>
- Mason, R. (2001, Feb). *Time is the new distance?* Inaugural Lecture, Open University, Milton Keynes, UK.
- Maye, J. (2015). *How technology challenges contribute to students' dropout from first-time online undergraduate courses: A multiple case study* [Doctoral dissertation, Northcentral University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1666454847>
- McClelland, T. J. (2014). *Why do they leave? An exploration of situational, dispositional, institutional, technological, and epistemological factors on undergraduate student withdrawal from online studies at an institute of technology in New Zealand*. [Doctoral dissertation, Northeastern University]. NU Campus Repository. <https://repository.library.northeastern.edu/files/neu:349649/fulltext.pdf>
- McNall, L. A., & Michel, J. S. (2017). The relationship between student core self-evaluations, support for school, and the work–school interface. *Community Work & Family* 20(3),1-20. <https://doi.org/10.1080/13668803.2016.1249827>
- McNaught, K. (2013). Flexible pedagogy, flexible practice: Notes from the trenches of distance education. *Higher Education Research & Development*, 32(5), 867–869. <https://doi.org/10.1080/07294360.2012.756849>

- McNeill, W. N. (2010). *The time-use of distance learners: a study of international postgraduate students engaged in professional career development*. [Doctoral dissertation, University of London]. UCL Repository. <http://discovery.ucl.ac.uk/10006518/>
- McNeill, W. N. (2014). Time and the working online learner. In E. Barberà & P. Reimann (Eds.), *Assessment and evaluation of time factors in online teaching and learning* (pp. 24-62). Information Science Reference. <https://doi.org/10.4018/978-1-4666-4651-3.ch00>
- Melgaard, J., Monir, R., Lasrado, L. A., & Fagerstrøm, A. (2022). Academic procrastination and online learning during the COVID-19 pandemic. *Procedia Computer Science*, 196, 117-124. <https://doi.org/10.1016/j.procs.2021.11.080>
- Meneses, J., Minguillón, J., González, L., & Martínez-Aceituno, T. (2019). *ESPRIA. Millora de l'Acompanyament dels Estudiants de Primer Any*. Universitat Oberta de Catalunya. <http://hdl.handle.net/10609/103166>
- Michinov, N., Brunot, S., Le Bohec, O., Juhel, J., & Delaval, M. (2011). Procrastination, participation, and performance in online learning environments. *Computers & Education*, 56(1), 243–252. <https://doi.org/10.1016/j.compedu.2010.07.025>
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). Sage Publications.
- Miner, A. G. (2014). *The effect of quality matters certification on student satisfaction, grades, and retention at FIU online* [Doctoral dissertation, Morgan State University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1552467109>
- Ministerio de Universidades [Spain] (2021). *Datos y cifras del sistema universitario español: Publicación 2020-2021*. [https://www.universidades.gob.es/stfls/universidades/Estadisticas/ficheros/Datos\\_y\\_Cifras\\_2020-21.pdf](https://www.universidades.gob.es/stfls/universidades/Estadisticas/ficheros/Datos_y_Cifras_2020-21.pdf)
- Mitchell, P. (2015). *The relationship between sense of community, course performance, and persistence in community college distance learning courses* [Doctoral dissertation, Northern Illinois University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1762585062>
- Mittelman, J., Rogaten, J., Long, D., Dalu, M., Gunter, A., Prinsloo, P., & Rienties, B. (2019). Understanding the early adjustment experiences of undergraduate distance education students in South Africa. *International Review of Research in Open and Distributed Learning*, 20(3), 18-36. <https://doi.org/10.19173/irrodl.v20i4.4101>
- Møglin, P., & Vidal, M. (2015). Managing time, workload and costs in distance education: Findings from a literature review of Distances et Médiations des Savoirs (formerly Distances et Savoirs). *Distance Education*, 36(2), 282-289. <https://doi.org/10.1080/01587919.2015.1056335>
- Moher, D., Liberate, A., Tetzlaff, J., Altman, D., & The PRISMA Group (2009). Preferred reporting items for Systematic Reviews and Meta-Analyses: The PRISMA statement. *PLoS Med.*, 6(7), e1000097. <http://doi.org/10.1371/journal.pmed.1000097>
- Moore, C., & Greenland, S. (2017). Employment-driven online student attrition and the assessment policy divide: An Australian open-access higher education perspective.

- Journal of Open, Flexible and Distance Learning*, 21(1), 52–62.  
<https://doi.org/10.3316/informit.957285975121219>
- Moore, D. (2014). *An investigation of the attrition of African-American students in an online undergraduate program* [Doctoral dissertation, Nova Southeastern University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1558181109>
- Mor, Y., & Craft, B. (2012). Learning design: Reflections upon the current landscape. *Research in Learning Technology*, 20(Suppl.), 85–94.  
<https://doi.org/10.3402/rlt.v20i0.19196>
- Mor, Y., Ferguson, R., & Wasson, B. (2015). Editorial: Learning design, teacher inquiry into student learning and learning analytics: A call for action. *British Journal of Educational Technology*, 46(2), 221–229. <https://doi.org/10.1111/bjet.12273>
- Muljana, P. S., & Luo, T. (2019). Factors contributing to student retention in online learning and recommended strategies for improvement: A systematic literature review. *Journal of Information Technology Education: Research*, 18, 19-57.  
<https://doi.org/10.28945/4182>
- Müller, T. (2008). Persistence of women in online degree-completion programs. *International Review of Research in Open and Distributed Learning*, 9(2), 1-18.  
<https://doi.org/10.19173/irrodl.v9i2.455>
- Mulliner, E., & Tucker, M. (2017). Feedback on feedback practice: Perceptions of students and academics. *Assessment & Evaluation in Higher Education*, 42(2), 266–288.  
<https://doi.org/10.1080/02602938.2015.1103365>
- Murphy, C. A., & Stewart, J. C. (2017). On-campus students taking online courses: Factors associated with unsuccessful course completion. *Internet and Higher Education*, 34, 1-9. <https://doi.org/10.1016/j.iheduc.2017.03.001>
- Myers, F., Glover, H., & Stephens, C. (2021). Learner interrupted: understanding the stories behind the codes—A qualitative analysis of HE distance-learner withdrawals. *Journal of Further and Higher Education*, 45(8), 1134-1146.  
<https://doi.org/10.1080/0309877X.2021.1931061>
- Nadasen, D. (2016). *Innovations and student success in online learning: A systematic review of how innovations affect student retention* [Doctoral dissertation, University of Maryland University College]. ProQuest Dissertations Publishing.  
<https://search.proquest.com/docview/1908477509>
- Naidu, S. (2014). Foreword. In E. Barberà & P. Reimann (Eds.), *Assessment and evaluation of time factors in online teaching and learning* (pp. xiii-xv). Information Science Reference.
- Naidu, S. (2017a). Openness and flexibility are the norm, but what are the challenges? *Distance Education*, 38(1), 1–4. <https://doi.org/10.1080/01587919.2017.1297185>
- Naidu, S. (2017b). How flexible is flexible learning, who is to decide and what are its implications? *Distance Education*, 38(3), 269–272.  
<https://doi.org/10.1080/01587919.2017.1371831>
- National Center for Educational Statistics (NCES). (2008). *Digest of Education Statistics: 2008*. Retrieved from <http://nces.ed.gov/>



- Naylor, D., & Nyanjom, J. (2021). Educators' emotions involved in the transition to online teaching in higher education. *Higher Education Research & Development*, 40(6), 1236-1250. <https://doi.org/10.1080/07294360.2020.1811645>
- Naylor, R., Baik, C., & Arkoudis., S. (2017). Identifying attrition risk based on the first year experience. *Higher Education Research & Development*, 37(2), 328-342. <https://doi.org/10.1080/07294360.2017.1370438>
- Netanda, R. S., Mamabolo, J., & Themane, M. (2019). Do or die: Student support interventions for the survival of distance education institutions in a competitive higher education system. *Studies in Higher Education*, 44(2), 397–414. <https://doi.org/10.1080/03075079.2017.1378632>
- Neuman, W. L. (2014). *Social research methods: Qualitative and quantitative approaches* (7th ed.). Pearson Education Limited.
- Nguyen, Q., Rienties, B., Toeteneel, L., Ferguson, F., & Whitelock, D. (2017). Examining the designs of computer-based assessment and its impact on student engagement, satisfaction, and pass rates. *Computers in Human Behavior*, 76, 703-714. <https://doi.org/10.1016/j.chb.2017.03.028>
- Nguyen, Q., Rienties, B., & Whitelock, D. (2022). Informing learning design in online education using learning analytics of student engagement. In B. Rienties, R. Hampel, E. Scanlon, & D. Whitelock (Eds.), *Open world learning: Research, innovation and the challenges of high-quality education* (pp. 189-207). Routledge. <https://doi.org/10.4324/9781003177098-17>
- Nichols, M. (2010). Student perceptions of support services and the influence of targeted interventions on retention in distance education. *Distance Education*, 31(1), 93–113. <https://doi.org/10.1080/01587911003725048>
- Nikolova, I., & Collis, B. (1998). Flexible learning and design of instruction. *British Journal of Educational Technology*, 29(1), 59–72. <https://doi.org/10.1111/1467-8535.00046>
- Nistor, N., & Neubauer, K. (2010). From participation to dropout: Quantitative participation patterns in online university courses. *Computers and Education*, 55(2), 663–672. <https://doi.org/10.1016/j.compedu.2010.02.026>
- Nuesell, L. M. (2016). *Advancing student success and college completion for nontraditional students: An examination of distance education participation and degree attainment* [Doctoral dissertation, East Carolina University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1868507639>
- O'Toole, S., & Essex, B. (2012). The adult learner may really be a neglected species. *Australian Journal of Adult Learning*, 52(1), 183-191. <https://www.learntechlib.org/p/54800/>
- O'Shea, S. (2022). Negotiating embodied aspirations: Exploring the emotional labour of higher education persistence for female caregivers. In G. Hook, M. P. Moreau, & R. Brooks, (Eds.), *Student carers in higher education: Navigating, resisting, and re-inventing academic cultures* (pp. 28-45). Routledge. <https://doi.org/10.4324/9781003177104-3>
- O'Shea, S., Stone, C., & Delahunty, J. (2015). "I 'feel' like I am at university even though I am online": Exploring how students narrate their engagement with higher education

- institutions in an online learning environment. *Distance Education*, 36(1), 41–58.  
<https://doi.org/10.1080/01587919.2015.1019970>
- Oliphant, T., & Branch-Mueller, J. (2018). ‘Doing the courses without stopping my life’: Time in a professional Master’s program. *International Review of Research in Open and Distributed Learning*, 19(4). <https://doi.org/10.19173/irrodl.v19i4.3237>
- Orellana, D., Segovia, N., & Cánovas, B. R. (2020). El abandono estudiantil en programas de educación superior virtual: Revisión de literatura. *Revista de la Educación Superior*, 49(194), 45-62. <https://doi.org/10.36857/resu.2020.194.1124>
- Ortiz-Lozano, J. M., Rua-Vieites, A., Bilbao-Calabuig, P., & Casadesús-Fa, M. (2018). University student retention: Best time and data to identify undergraduate students at risk of dropout. *Innovations in Education and Teaching International*, 57(1), 74-85.  
<https://doi.org/10.1080/14703297.2018.1502090>
- Owen, M., Kavanagh, P., & Dollard, M. (2017). An integrated model of work–study conflict and work–study facilitation. *Journal of Career Development*, 45(5), 504-517.  
<https://doi.org/10.1177/0894845317720071>
- Palvia, S., Aeron, P., Gupta, P., Mahapatra, D., Parida, R., Rosner, R., & Sindhi, S. (2018). Online education: Worldwide status, challenges, trends, and implications. *Journal of Global Information Technology Management*, 21(4), 233-241.  
<https://doi.org/10.1080/1097198X.2018.1542262>
- Papi, C., Sauv  , L., Desjardins, G., & G  rin-Lajoie, S. (2022). De la multiplicit   des facteurs    prendre en compte pour mieux comprendre l’abandon en formation    distance. *Distances et M  diations des Savoirs*, 37. <https://doi.org/10.4000/dms.6904>
- Park, J. H., & Choi, H. J. (2009). Factors influencing adult learners' decision to drop out or persist in online learning. *Journal of Educational Technology & Society*, 12(4), 207-217. <https://doi.org/10.2307/jeductechsoci.12.4.207>
- Pascarella, E. & Terenzini, P. (2005). *How college affects students* (Vol. 2). San Francisco: Jossey-Bass.
- Patterson, B., & McFadden, C. (2009). Attrition in online and campus degree programs. *Online Journal of Distance Learning Administration*, 12(2).  
<https://www.westga.edu/~distance/ojdla/summer122/patterson112.html>
- Pattison, A. B. (2017). *An exploratory study of the relationship between faculty social presence and online graduate student achievement, satisfaction, and persistence* [Doctoral dissertation, Grand Canyon University]. ProQuest Dissertations Publishing.  
<https://search.proquest.com/docview/1874562951>
- Patton, M. Q. (2002). *Qualitative research & evaluation methods* (3rd ed.). Sage Publications.
- Patton, M. Q. (2015). Sampling, qualitative (purposeful). In G. Ritzer (Ed.), *The Blackwell Encyclopedia of Sociology*. Blackwell.  
<https://doi.org/10.1002/9781405165518.wbeoss012.pub2>
- Peters, M. D. J., Godfrey, C., McInerney, P., Baldini Soares, C., Khalil, H., & Parker, D. (2017). Scoping reviews. In E. Aromataris & Z. Munn (Eds.), *Joanna Briggs Institute Reviewer's Manual* (Chapter 11). The Joanna Briggs Institute.  
<https://reviewersmanual.joannabriggs.org/>

- Petersen, N. J. (2020). Strategies for efficient, meaningful, and inclusive online learning environments: It's about time. In L. Kyei-Blankson, E. Ntuli, & J. Blankson (Eds.), *Handbook of research on creating meaningful experiences in online courses* (pp. 187-226). IGI Global. <https://doi.org/10.4018/978-1-7998-0115-3.ch013>
- Pierrakeas, C., Xeno, M., Panagiotakopoulos, C., & Vergidis, D. (2004). A comparative study of dropout rates and causes for two different distance education courses. *International Review of Research in Open and Distance Learning*, 5(2). <https://doi.org/10.19173/irrodl.v5i2.183>
- Pilkington, C. (2018). A playful approach to fostering motivation in a distance education computer programming course: Behaviour change and student perceptions. *International Review of Research in Open and Distributed Learning*, 19(3), 282–298. <https://doi.org/10.19173/irrodl.v19i3.3664>
- Pinchbeck, J., & Heaney, C. (2017). Case report: The impact of a resubmission intervention on level 1 distance learning students. *Open Learning*, 32(3), 236–242. <http://doi.org/10.1080/02680513.2017.1348290>
- Pintrich, P. R. (2004). A conceptual framework for assessing motivation and self-regulated learning in college students. *Educational Psychology Review*, 16(4), 385-407. <https://doi.org/10.1007/s10648-004-0006-x>
- Poll, K., Widen, J., & Weller, S. (2014). Six instructional best practices for online engagement and retention. *Journal of Online Doctoral Education*, 1(1), 56-72. [https://ecommons.luc.edu/cgi/viewcontent.cgi?article=1030&context=english\\_facpubs](https://ecommons.luc.edu/cgi/viewcontent.cgi?article=1030&context=english_facpubs)
- Porter, S. (2003). Understanding retention outcomes: Using multiple data sources to distinguish between dropouts, stopouts, and transfer-outs. *Journal of College Student Retention*, 5(1), 53-70. <https://doi.org/10.2190/NV6H-55NG-8EYW-EKGP>
- Powell, R., Conway, C., & Ross, L. (1990). Effects of student predisposing characteristics on student success. *International Journal of E-Learning and Distance Education*, 5(1), 5–19. <http://www.ijede.ca/index.php/jde/article/download/368/259?inline=1>
- Puspitasari, K. (2012). *The effects of learning strategy intervention and study time management intervention on students' self-regulated learning, achievement, and course completion in a distance education learning environment* [Doctoral dissertation, Florida State University]. FSU Repository. <https://diginole.lib.fsu.edu/islandora/object/fsu:183075/datastream/PDF/view>
- Putney, L. G. (2010). Case study. In N. J. Salkind (Ed.), *Encyclopedia of research design* (Vol. 1, pp. 115-119). Sage Publications. <https://doi.org/10.4135/9781412961288.n39>
- Raju, D., & Schumacker, R. (2015). Exploring student characteristics of retention that lead to graduation in higher education using data mining models. *Journal of College Student Retention*, 16(4), 563–591. <https://doi.org/10.2190/CS.16.4.e>
- Rashid, M. M., Jahan, M., Islam, A., & Ratna, M. M. (2015). Student enrollment and dropout: An evaluation study of DCSA program at Bangladesh Open University. *International Review of Research in Open and Distance Learning*, 16(4), 18–32. <http://doi.org/10.19173/irrodl.v16i4.2157>



- Reason, R. D. (2009). An examination of persistence research through the lens of a comprehensive conceptual framework. *Journal of College Student Development*, 50, 659-682. <http://doi.org/10.1353/csd.0.0098>
- Rienties, B., & Toetenel, L. (2016). The impact of learning design on student behaviour, satisfaction and performance: A cross-institutional comparison across 151 modules. *Computers in Human Behavior*, 60, 333-341. <https://doi.org/10.1016/j.chb.2016.02.074>
- Ritchie, J., Lewis, J., Elam, G., Tennant, R., & Rahim, N. (2014). Designing and selecting samples. In J. Ritchie, J. Lewis, C. M. Nicholls, & R. Ormston (Eds.), *Qualitative research practice: A guide for social science students and researchers* (pp. 111-146). Sage Publications.
- Rivera-Vargas, P., Anderson, T. & Cano, C. A. (2021). Exploring students' learning experience in online education: analysis and improvement proposals based on the case of a Spanish open learning university. *Education Technology Research and Development*, 69, 3367–3389. <https://doi.org/10.1007/s11423-021-10045-0>
- Robichaud, W. (2016). Orientation programs to increase retention in online community college courses. *Distance Learning*, 13(2), 57-64. <https://search.proquest.com/docview/1822357191>
- Rockinson-Szapkiw, A. J., Spaulding, L. S., & Spaulding, M. T. (2016). Identifying significant integration and institutional factors that predict online doctoral persistence. *Internet and Higher Education*, 31, 101–112. <http://doi.org/10.1016/j.iheduc.2016.07.003>
- Rodríguez-Ardura, I., & Meseguer-Artola, A. (2016a). E-learning continuance: The impact of interactivity and the mediating role of imagery, presence and flow. *Information and Management*, 53(4), 504–516. <http://doi.org/10.1016/j.im.2015.11.005>
- Rodríguez-Ardura, I., & Meseguer-Artola, A. (2016b). What leads people to keep on e-learning? An empirical analysis of users' experiences and their effects on continuance intention. *Interactive Learning Environments*, 24(6), 1030–1053. <http://doi.org/10.1080/10494820.2014.926275>
- Rodríguez-Gómez, D., Meneses, J., Gairín, J., Feixas, M., & Muñoz, J. (2016). They have gone, and now what? Understanding re-enrolment patterns in the Catalan public higher education system. *Higher Education Research & Development*, 35(4), 815-828. <https://doi.org/10.1080/07294360.2015.1137886>
- Rogers, S. R. (2018). *Nothing left unfinished: A transcendental phenomenology on the persistence of black women in distance education doctoral programs* [Doctoral dissertation, Liberty University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/2124411831>
- Romano, J., Wallace, T., Wallace, H., Helmick, I., Carey, L., & Adkins, L. (2005). Study procrastination, achievement, and academic motivation in web-based and blended distance learning. *Internet and Higher Education*, 8(4), 299–305. <https://doi.org/10.1016/j.iheduc.2005.09.003>
- Romero, M. (2011). Distance learners' work life learning balance. *Journal of Instructional Technology and Distance Learning*, 8(5), 43–48.

- Romero, M., & Barberà, E. (2011). Quality of learners' time and learning performance beyond quantitative time-on-task. *International Review of Research in Open and Distributed Learning*, 12(5), 125-137. <https://doi.org/10.19173/irrodl.v12i5.999>
- Romero, M., & Barberà, E. (2015). Lifelong learners and teacher's time-management competency in e-learning. In M. Ally & B. H. Khan (Eds.), *International Handbook of E-Learning Volume 2: Implementation and Case Studies* (pp. 135-146). Routledge. <https://doi.org/10.4324/9781315760902-13>
- Romero, M., & Gentil, C. (2014). Characterizing online learners' time regulation: Comparative case studies of virtual campuses in France and Spain. In E. Barberà & P. Reimann (Eds.), *Assessment and evaluation of time factors in online teaching and learning* (pp. 91-110). Information Science Reference. <https://doi.org/10.4018/978-1-5225-5472-1.ch077>
- Rotar, O. (2020). *A missing element of online HE students' attrition, retention, and success: An analysis through a systematic literature review* (Working Paper No. 3). CHERE, Lancaster University. <https://www.lancaster.ac.uk/educational-research/research/centre-for-higher-education-research-and-evaluation/working-papers/>
- Rotar, O. (2022). Online student support: A framework for embedding support interventions into the online learning cycle. *Research and Practice in Technology Enhanced Learning*, 17, Article 2. <https://doi.org/10.1186/s41039-021-00178-4>
- Rovai, A. (2003). In search of higher persistence rates in distance education online programs. *Internet and Higher Education*, 6(1), 1–16. [https://doi.org/10.1016/S1096-7516\(02\)00158-6](https://doi.org/10.1016/S1096-7516(02)00158-6)
- Russo-Gleicher, R. J. (2014). Improving student retention in online college classes: Qualitative insights from faculty. *Journal of College Student Retention: Research, Theory & Practice*, 16(2), 239–260. <http://doi.org/10.2190/cs.16.2.e>
- Rust, D. Z. (2006). *Examining interaction in online courses in relation to student performance and course retention* [Doctoral dissertation, Tennessee State University]. TNState Repository. <https://digitalscholarship.tnstate.edu/dissertations/AAI3211923/>
- Samra, R., Waterhouse, P., & Lucassen, M. (2021). Combining and managing work-family-study roles and perceptions of institutional support. *Distance Education*, 42(1), 88-105. <https://doi.org/10.1080/01587919.2020.1869530>
- Sánchez-Elvira Paniagua, A., & Simpson, O. (2018). Developing student support for open and distance learning: The EMPOWER Project. *Journal of Interactive Media in Education*, 2018(1). <http://doi.org/10.5334/jime.470>
- Sánchez-Gelabert, A. (2021). Non-traditional students, university trajectories, and higher education institutions: A comparative analysis of face-to-face and online universities. *Studia Paedagogica*, 25(4), 51-72. <http://doi.org/10.5817/SP2020-4-3>
- Sánchez-Gelabert, A. (2022). *Condicions socials i de vida dels estudiants, trajectòries acadèmiques i modalitat d'universitat: Una aproximació a l'abandonament universitari* [Doctoral dissertation, Universitat Autònoma de Barcelona]. UAB Repository. <https://ddd.uab.cat/record/265580>

- Sánchez-Gelabert, A., & Elías, M. (2017). Los estudiantes universitarios no tradicionales y el abandono de los estudios. *Estudios sobre Educación*, 32, 27-48.  
<http://doi.org/10.15581/004.32.27-48>
- Sánchez-Gelabert, A., Valente, R., & Duart, J. (2020). Profiles of online students and the impact of their university experience. *International Review of Research in Open and Distributed Learning*, 21(3). <https://doi.org/10.19173/irrodl.v21i3.4784>
- Sangrà, A. (2002). A new learning model for the information and knowledge society: The case of the Universitat Oberta de Catalunya (UOC), Spain. *International Review of Research in Open and Distributed Learning*, 2(2), 1-19.  
<http://www.irrodl.org/index.php/irrodl/article/view/55/114>
- Sangrà, A. (2020). Enseñar y aprender en línea: Superando la distancia social. In A. Sangrà (Ed.), *Decálogo para la mejora de la docencia online: Propuestas para educar en contextos presenciales discontinuos* (pp. 27-44). Editorial UOC.
- Sangrà, A., Vlachopoulos, D., & Cabrera, N. (2012). Building an inclusive definition of e-Learning: An approach to the conceptual framework. *International Review of Research in Open and Distance Learning*, 13(2), 145–159.  
<https://doi.org/10.19173/irrodl.v13i2.1161>
- Sanz, R. A., Vírseda, J. A. V., García, R. M., & Arias, J. G. (2018). Innovation in the university: Perception, monitoring and satisfaction. *IEEE Revista Iberoamericana de Tecnologías del Aprendizaje*, 13(3), 111–118.  
<http://doi.org/10.1109/RITA.2018.2862721>
- Scharf, M. T. (2015). *Comparing student cumulative course grades, attrition, and satisfaction in traditional and virtual classroom environments* [Doctoral dissertation, Northcentral University]. ProQuest Dissertations Publishing.  
<http://search.proquest.com/docview/1713690470>
- Schreier, M. (2012). *Qualitative content analysis in practice*. Sage Publishers.
- Seabra, F., Henriques, S., Cardoso, T., Barros, D., & Goulão, M. (2018). E-learning in higher education: Academic factors for student permanence. In U. M. Azeiteiro, W. L. Filho, & L. Aires (Eds.), *Climate literacy and innovations in climate change education* (pp. 359-373). Springer.
- Seidman, A. (Ed.). (2005). *College student retention: Formula for student success*. ACE/Praeger.
- Selwyn, N. (2011). ‘Finding an appropriate fit for me’: Examining the (in)flexibilities of international distance learning. *International Journal of Lifelong Education*, 30(3), 367-383. <https://doi.org/10.1080/02601370.2011.570873>
- Shachar, M., & Neumann, Y. (2010). Twenty years of research on the academic performance differences between traditional and distance learning: Summative meta-analysis and trend examination. *MERLOT Journal of Online Learning and Teaching*, 6(2).  
[https://jolt.merlot.org/vol6no2/shachar\\_0610.htm](https://jolt.merlot.org/vol6no2/shachar_0610.htm)
- Shah, M., & Cheng, M. (2019). Exploring factors impacting student engagement in open access courses. *Open Learning*, 34, 187–202.  
<https://doi.org/10.1080/02680513.2018.1508337>
- Shah, M., Pabel, A., Richardson, J. (2021). Introduction to the twenty-first century student experience: Issues, trends, disruptions and expectations. In M. Shah, J. Richardson, A.

- Pabel, & B. Oliver (Eds.), *Assessing and enhancing student experience in higher education* (pp. 1-17). Palgrave Macmillan, Cham. [https://doi.org/10.1007/978-3-030-80889-1\\_1](https://doi.org/10.1007/978-3-030-80889-1_1)
- Shaikh, U., & Asif, Z. (2022). Persistence and dropout in higher online education: Review and categorization of factors. *Frontiers in Psychology, 13*, Article 902070. <https://doi.org/10.3389/fpsyg.2022.902070>
- Shaw, M., Burrus, S., & Ferguson, K. (2016). Factors that influence student attrition in online courses. *Online Journal of Distance Learning Administration, 19*(3), 211-217. <http://doi.org/10.2307/2369245>
- Shea, P., & Bidjerano, T. (2014). Does online learning impede degree completion? A national study of community college students. *Computers & Education, 75*, 103-111. <https://doi.org/10.1016/j.compedu.2014.02.009>
- Shea, P., & Bidjerano, T. (2016). A national study of differences between online and classroom-only community college students in time to first associate degree attainment, transfer, and dropout. *Journal of Asynchronous Learning Network, 20*(3), 14–15. <http://doi.org/10.4103/0971-4065.59335>
- Shea, P., & Bidjerano, T. (2018). Online course enrollment in community college and degree completion: The tipping point. *International Review of Research in Open and Distance Learning, 19*(2), 282–293. <http://doi.org/10.19173/irrodl.v19i2.3460>
- Sheail, P. (2018). Temporal flexibility in the digital university: Full-time, part-time, flexitime. *Distance Education, 39*(4), 462-479. <https://doi.org/10.1080/01587919.2018.1520039>
- Shesky, E. (2014). *Online university stop-out correlations: A quantitative parametric study investigating Master's level graduate student demographic factors impacting retention behavior* [Doctoral dissertation, Jones International University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1549977506>
- Simons, J., Beaumont, K., & Holland, L. (2018). What factors promote student resilience on a level 1 distance learning module?. *Open Learning, 33*(1), 4-17. <https://doi.org/10.1080/02680513.2017.1415140>
- Simpson, O. (2003). *Student retention in online, open and distance learning*. Routledge. <https://doi.org/10.4324/9780203416563>
- Simpson, O. (2004a). *Supporting students for success in online and distance education*. Routledge. <https://doi.org/10.4324/9780203095737>
- Simpson, O. (2004b). The impact on retention of interventions to support distance learning students. *Open Learning: The Journal of Open, Distance and e-Learning, 19*(1), 79–95. <https://doi.org/10.1080/0268051042000177863>
- Simpson, O. (2009). Retention and course choice in distance learning. In U. Bernath, A. Szücs, A. Tait, & M. Vidal (Eds.), *Distance and e-learning in transition: Learning innovation, technology and social challenges* (pp. 473-484). Wiley-ISTE.
- Simpson, O. (2010). '22% - can we do better?' - *The CWP Retention Literature Review Final Report*. Open University UK. <https://doi.org/10.13140/RG.2.2.15450.16329>
- Simpson, O. (2012). Technology-supported assessment for retention. In L. Clouder, C. Broughan, S. Jewell, & G. Steventon (Eds.), *Improving student engagement and*

- development through assessment* (pp. 195-209). Routledge.  
<https://doi.org/10.4324/9780203817520>
- Simpson, O. (2013). Student retention in distance education: are we failing our students? *Open Learning*, 28(2), 105-119. <http://doi.org/10.1080/02680513.2013.847363>
- Simpson, O. (2021). Student success: Administering distance education for student success. In L. Cifuentes (Ed.), *A guide to administering distance learning* (pp. 300-327). Brill.  
[https://doi.org/10.1163/9789004471382\\_013](https://doi.org/10.1163/9789004471382_013)
- Slade, S., & Prinsloo, P. (2015). Stemming the flow: improving retention for distance learning students. In *EDEN 2015 Annual Conference Proceedings*.  
<http://oro.open.ac.uk/44537/>
- Slim, A., Heileman, G. L., Al-Doroubi, W., & Abdallah, C. T. (2016). The impact of course enrolment sequences on student success. In *Proceedings of 30<sup>th</sup> International Conference on Advanced Information Networking and Applications*, Crans-Montana, Switzerland. <https://doi.org/10.1109/AINA.2016.140>
- Snyder, J. (2014). *Student perceptions of online learning and persistence for course completion* [Doctoral dissertation, Walden University]. ProQuest Dissertations & Theses Global. <http://search.proquest.com/docview/1512414837>
- Soen, D., & Davidovitch, N. (2008). An opportunity missed: Features of college dropouts. A case study: The academic college of Judea and Samaria. *Problems of Education in the 21st Century*, 8, 118-124. <http://www.scientiasocialis.lt/pec/node/165>
- Soffer, T., Kahan, T., & Nachmias, R. (2019). Patterns of students' utilization of flexibility in online academic courses and their relation to course achievement. *International Review of Research in Open and Distributed Learning*, 20(3).  
<https://doi.org/10.19173/irrodl.v20i4.3949>
- Sorensen, C., & Donovan, J. (2017). An examination of factors that impact the retention of online students at a for-profit university. *Online Learning*, 21(3), 206-221.  
<https://doi.org/10.24059/olj.v21i3.935>
- Stake, R. E. (1995). *The art of case study research*. Sage Publications.
- Stake, R. E. (2008). Qualitative case studies. In N. K. Denzin & Y. S. Lincoln (Eds.), *Strategies of qualitative inquiry* (pp. 119-149). Sage Publications.
- Steel, P., & Klingsieck, K. B. (2016). Academic procrastination: Psychological antecedents revisited. *Australian Psychologist*, 51(1), 36-46. <https://doi.org/10.1111/ap.12173>
- Stephen, J., Rockinson-Szapkiw, A., & Dubay, C. (2020). Persistence model of non-traditional online learners: Self-efficacy, self-regulation, and self-direction. *American Journal of Distance Education*, 34(4), 306-321.  
<https://doi.org/10.1080/08923647.2020.1745619>
- Stoessel, K., Ihme, T. A., Barbarino, M. L., Fisseler, B., & Stürmer, S. (2014). Sociodemographic diversity and distance education: Who drops out from academic programs and why? *Research in Higher Education*, 56(3), 228-246.  
<http://doi.org/10.1007/s11162-014-9343-x>
- Stone, C. (2017). Opportunity through online learning: Improving student access, participation and success in higher education. In *Equity Fellowship Final Report, National Centre for Student Equity in Higher Education*. NCSEHE, Curtin University.



- [https://www.ncsehe.edu.au/wp-content/uploads/2017/03/CathyStone\\_EQUITY-FELLOWSHIP-FINAL-REPORT-1.pdf](https://www.ncsehe.edu.au/wp-content/uploads/2017/03/CathyStone_EQUITY-FELLOWSHIP-FINAL-REPORT-1.pdf)
- Stone, C., & O'Shea, S. (2019a). Older, online and first: Recommendations for retention and success. *Australasian Journal of Educational Technology*, 35(1), 57–69. <https://doi.org/10.14742/ajet.3913>
- Stone, C., & O'Shea, S. (2019b). My children... think it's cool that Mum is a uni student: Women with caring responsibilities studying online. *Australasian Journal of Educational Technology*, 35(6), 97-110. <https://doi.org/10.14742/ajet.5504>
- Storrings, D. A. (2005). *Attrition in distance education: A meta-analysis* (Publication No. 305382352) [Doctoral dissertation, Syracuse University]. ProQuest Dissertations & Theses Global.
- Strebe, C. (2016). *Variables predicting the retention of learners in online courses at a technical college in Wisconsin, USA* [Doctoral dissertation, Northcentral University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1877995966>
- Street, H. (2010). Factors influencing a learner's decision to drop-out or persist in higher education distance learning. *Online Journal of Distance Learning Administration*, 13(4), 1-5. <https://eric.ed.gov/?id=EJ918570>
- Struble, K. D. (2014). *Efficacy of hybrid coursework on retention rates in online higher education* [Doctoral dissertation, Liberty University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1648993415>
- Su, J., & Waugh, M. L. (2018). Online student persistence or attrition: Observations related to expectations, preferences, and outcomes. *Journal of Interactive Online Learning*, 16(1), 63-79. <http://www.ncolr.org/jiol/issues/pdf/16.1.4.pdf>
- Sullivan, S. M. (2016). *The effects of prompting metacognition using email or text reminders on student participation, persistence, and performance in a blended course* [Doctoral dissertation, University of South Alabama]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1786276658>
- Sutton, R. (2014). Unlearning the past: New foundations for online student retention. *Journal of Educators Online*, 11(3). <http://files.eric.ed.gov/fulltext/EJ1033326.pdf>
- Svartdal, F., Dahl, T. I., Gamst-Klaussen, T., Koppenborg, M., & Klingsieck, K. B. (2020). How study environments foster academic procrastination: Overview and recommendations. *Frontiers in Psychology*, 11, Article No. 540910. <https://doi.org/10.3389/fpsyg.2020.540910>
- Swan, K. (2016). Online learning and student success: New findings from learning analytics. In *Proceedings of Global Learn-Global Conference on Learning and Technology* (pp. 553-560). AACE. <https://www.learntechlib.org/primary/p/172802/>
- Sweeney, J. S. W. (2017). *Motivation to degree completion of online doctoral learners: An exploratory qualitative inquiry* [Doctoral dissertation, Capella University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1876898271>
- Tabuenca, B., Greller, W., & Verpoorten, D. (2022). Mind the gap: Smoothing the transition to higher education fostering time management skills. *Universal Access in the Information Society*, 21, 367–379. <https://doi.org/10.1007/s10209-021-00833-z>

- Tait, A. (2014). From place to virtual space: Reconfiguring student support for distance and e-learning in the digital age. *Open Praxis*, 6(1), 5-16. <https://doi.org/10.5944/openpraxis.6.1.102>
- Tait, A. (2015). *Student success in open, distance and e-learning*. International Council for Open and Distance Learning. <https://www.glokalde.com/pdf/issues/3/republished-2.pdf>
- Tait, A. (2018). Education for development: From distance to open education. *Journal of Learning for Development*, 5(2), 101-115. <https://www.learntechlib.org/p/189225/>
- Tan, M., & Shao, P. (2015). Prediction of student dropout in E-learning program through the use of machine learning method. *International Journal of Emerging Technologies in Learning*, 10(1), 11–17. <http://doi.org/10.3991/ijet.v10i1.4189>
- Theobald, M., & Bellhäuser, H. (2022). How am I going and where to next? Elaborated online feedback improves university students' self-regulated learning and performance. *Internet and Higher Education*, 55, Article 100872. <https://doi.org/10.1016/j.iheduc.2022.100872>
- Thistoll, T., & Yates, A. (2016). Improving course completions in distance education: An institutional case study. *Distance Education*, 37(2), 180–195. <http://doi.org/10.1080/01587919.2016.1184398>
- Thomas, L. (2011). Do pre-entry interventions such as ‘Aimhigher’ impact on student retention and success? A review of the literature. *Higher Education Quarterly*, 65(3), 230–250. <https://doi.org/10.1111/j.1468-2273.2010.00481.x>
- Thomas, L., Herbert, J., & Teras, M. (2014). A sense of belonging to enhance participation, success and retention in online programs. *The International Journal of the First Year in Higher Education*, 5(2), 69–80. <http://doi.org/10.5204/intjfyhe.v5i2.233>
- Thorpe, M. (2006). Perceptions about time and learning: Researching the student experience. *Distances et Savoirs*, 4(4), 497–511. <https://doi.org/10.3166/ds.4.497-511>
- Thorpe, M. (2009). Perceptions about time and learning: Researching the student experience. In U. Bernath, A. Szücs, A. Tait, & M. Vidal (Eds.), *Distance and e-learning in transition: Learning innovation, technology and social challenges* (pp. 457–472). Wiley-ISTE.
- Tinto, V. (1975). Dropout from Higher Education: A theoretical synthesis of recent research. *Review of Educational Research*, 45(1), 89-125. <https://doi.org/10.3102/00346543045001089>
- Tinto, V. (1982). Defining dropout: A matter of perspective. *New Directions for Institutional Research*, 1982(36), 3-15. <https://doi.org/10.1002/ir.37019823603>
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). University of Chicago Press.
- Tinto, V. (2006). Research and practice of student retention: What next? *Journal of College Student Retention*, 8(1), 1–19. <https://doi.org/10.2190/4YNU-4TMB-22DJ-AN4W>
- Tinto, V. (2012). *Completing college: Rethinking institutional action*. Chicago: University of Chicago Press.
- Tinto, V. (2013). Isaac Newton and student college completion. *Journal of College Student Retention*, 15(1), 1-7. <http://doi.org/10.2190/CS.15.1.a>

- Tinto, V. (2015). Through the eyes of students. *Journal of College Student Retention*, 19(3), 254–269. <http://doi.org/10.1177/1521025115621917>
- Tinto, V. (2017). Reflections on student persistence. *Student Success*, 8(2), 1-8. <https://doi.org/10.5204/ssj.v8i2.376>
- Tinto, V., & Pusser, B. (2006). *Moving from theory to action: Building a model of institutional action for student success*. National Postsecondary Education Cooperative. [https://www.researchgate.net/publication/251378009\\_Moving\\_From\\_Theory\\_to\\_Action\\_Building\\_a\\_Model\\_of\\_Institutional\\_Action\\_for\\_Student\\_Success](https://www.researchgate.net/publication/251378009_Moving_From_Theory_to_Action_Building_a_Model_of_Institutional_Action_for_Student_Success)
- Tower, M., Walker, R., Wilson, K., Watson, B., & Tronoff, G. (2015). Engaging, supporting and retaining academic at-risk students in a Bachelor of Nursing: Setting risk markers, interventions and outcomes. *The International Journal of the First Year in Higher Education*, 6(1), 121–134. <http://doi.org/10.5204/intjfyhe.v6i1.251>
- Traver, A. E., Volchok, E., Bidjerano, T., & Shea, P. (2014). Correlating community college students' perceptions of community of inquiry presences with their completion of blended courses. *Internet and Higher Education*, 20, 1–9. <http://doi.org/10.1016/j.iheduc.2013.09.001>
- Travers, S. (2016). Supporting online student retention in community colleges: What data is most relevant? *Quarterly Review of Distance Education*, 17(4), 49–61. Retrieved from <https://eric.ed.gov/?id=EJ1142960>
- Tresman, S. (2002). Towards a strategy for improved student retention in programmes of open, distance education: A case study from the Open University UK. *The International Review of Research in Open and Distributed Learning*, 3(1). <https://doi.org/10.19173/irrodl.v3i1.75>
- Trotter, E., & Roberts, C. A. (2006). Enhancing the early student experience. *Higher Education Research & Development*, 25(4), 371-386. <https://doi.org/10.1080/07294360600947368>
- Tucker, W. G. (2014). *Spaces for success in higher education: Males of color at an online predominantly white community college* [Doctoral dissertation, Northern Arizona University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1545673941>
- Tuero, E., Cervero, A., Esteban, M., & Bernardo, A. (2018). ¿Por qué abandonan los alumnos universitarios? Variables de influencia en el planteamiento y consolidación del abandono. *Educación XXI*, 21(2), 131-154. <https://doi.org/10.5944/educxx1.20066>
- Tyler-Smith, K. (2006). Early attrition among first time eLearners: A review of factors that contribute to drop-out, withdrawal and non-completion rates of adult learners undertaking eLearning programmes. *MERLOT Journal of Online learning and Teaching*, 2(2), 73-85. [https://jolt.merlot.org/documents/Vol2\\_No2\\_TylerSmith\\_000.pdf](https://jolt.merlot.org/documents/Vol2_No2_TylerSmith_000.pdf)
- UOC (2020). *Report of the 2018–2019 academic year: We grow in research, we share knowledge*. Universitat Oberta de Catalunya. [https://www.uoc.edu/portal/\\_resources/ES/documents/memories/1819/memoria-UOC-2018-2019\\_es.pdf](https://www.uoc.edu/portal/_resources/ES/documents/memories/1819/memoria-UOC-2018-2019_es.pdf)



- UOC (2021). *Annual report 2020/2021: 25 years learning and transforming*. Universitat Oberta de Catalunya.  
[https://www.uoc.edu/portal/\\_resources/CA/documents/memories/2021/UOC\\_Memoria-2020-21-EN.pdf](https://www.uoc.edu/portal/_resources/CA/documents/memories/2021/UOC_Memoria-2020-21-EN.pdf)
- Vadell, K. (2016). *The influence of academic coaching on the retention of distance education students* [Doctoral dissertation, Drexel University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1797415234>
- Vakoufari, M., Christina, A., & Mavroidis, I. (2014). Self-esteem and loneliness as factors affecting distance learning students. *European Journal of Open, Distance and e-learning*, 17(2), 100-116. <http://doi.org/10.2478/eurodl-2014-0022>
- Van Hunnik, E. (2015). Online college laboratory courses: Can they be done and will they affect graduation and retention rates? *Higher Learning Research Communications*, 5(4). <http://doi.org/10.18870/hlrc.v5i4.289>
- Veletsianos, G. (2020). *Learning online: The student experience*. JHU Press.
- Veletsianos, G., & Houlden, S. (2019). An analysis of flexible learning and flexibility over the last 40 years of *Distance Education*. *Distance Education*, 40(4), 454-468. <https://doi.org/10.1080/01587919.2019.1681893>
- Veletsianos, G., & Houlden, S. (2020). Radical flexibility and relationality as responses to education in times of crisis. *Postdigital Science and Education*, 2(3), 849-862. <https://doi.org/10.1007/s42438-020-00196-3>
- Veletsianos, G., Kimmons, R., Larsen, R., & Rogers, J. (2021). Temporal flexibility, gender, and online learning completion. *Distance Education*, 42(1), 22-36. <https://doi.org/10.1080/01587919.2020.1869523>
- Verdinelli, S., & Kutner, D. (2015). Persistence factors among online graduate students with disabilities. *Journal of Diversity in Higher Education*, 9(4), 353-368. <http://doi.org/10.1037/a0039791>
- Vogel, C., Hochberg, J., Hackstein, S., Bockshecker, A., Bastiaens, T.J. & Baumöl, U. (2018). Dropout in distance education and how to prevent it. In *Proceedings of EdMedia: World Conference on Educational Media and Technology* (pp. 1788-1799). AACE. <https://www.learntechlib.org/primary/p/184409/>
- Wang, Y., Zhang, J., & Lee, H. (2021). An online experiment during COVID-19: Testing the influences of autonomy support toward emotions and academic persistence. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.747209>
- Waterhouse, P., Samra, R., & Lucassen, M. (2020). Mental distress and its relationship to distance education students' work and family roles. *Distance Education*, 41(4), 540-588. <https://doi.org/10.1080/01587919.2020.1821606>
- Waterhouse, P., Samra, R., & Lucassen, M. (2022). Distance education students' satisfaction: Do work and family roles matter?. *Distance Education*, 43(1), 56-77. <https://doi.org/10.1080/01587919.2021.2020622>
- Wavle, S. (2021). *An exploratory mixed methods study of persistence patterns in online undergraduate programs and perspectives of returning online undergraduate students* [Doctoral dissertation, Indiana University]. IU Repository. <https://hdl.handle.net/2022/26474>

- Wavle, S., & Ozogul, G. (2019). Investigating the impact of online classes on undergraduate degree completion. *Online Learning*, 23(4), 281-295.  
<https://doi.org/10.24059/olj.v23i4.1558>
- Weimer, M. (2013). *Learner-centered teaching: Five key changes to practice* (2nd ed.). Jossey-Bass.
- Whitelock, D. (2011). Activating assessment for learning: Are we on the way with Web 2.0? In M. Lee & C. McLoughlin (Eds.), *Web 2.0-based E-Learning: Applying social informatics for tertiary teaching* (pp. 319–342). IGI Global.
- Whitelock, D., Thorpe, M., & Galley, R. (2015). Student workload: a case study of its significance, evaluation and management at the Open University. *Distance Education*, 36(2), 161-176. <https://doi.org/10.1080/01587919.2015.1055059>
- Willging, P. A. & Johnson, S. D. (2009). Factors that influence students' decision to dropout of online courses. *Journal of Asynchronous Learning Networks*, 13(3), 115–127.  
<https://files.eric.ed.gov/fulltext/EJ862360.pdf>
- Winger, A. T. (2016). *What do the numbers really mean? An examination of learning analytics related to online courses and university student retention and success* [Doctoral dissertation, University of North Dakota]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1862145122>
- Wladis, C., & Hachey, A. (2017). Using course-level factors as predictors of online course outcomes: A multilevel analysis at a U.S. urban community college. *Studies in Higher Education*, 42(1), 184–200. <https://doi.org/10.1080/03075079.2015.1045478>
- Wladis, C., Conway, K., & Hachey, A. (2015a). The online STEM classroom—Who succeeds? An exploration of the impact of ethnicity, gender, and non-traditional student characteristics in the community college context. *Community College Review*, 43(2), 142–164. <https://doi.org/10.1177/0091552115571729>
- Wladis, C., Conway, K. M., & Hachey, A. C. (2015b). Using course-level factors as predictors of online course outcomes: A multi-level analysis at a US urban community college. *Studies in Higher Education*, 42(1), 184–200.  
<http://doi.org/10.1080/03075079.2015.1045478>
- Wladis, C., Conway, K. M., & Hachey, A. C. (2016). Assessing readiness for online education - Research models for identifying students at risk. *Online Learning*, 20(3), 97–109. Retrieved from <https://eric.ed.gov/?id=EJ1113351>
- Wladis, C., Hachey, A. C., & Conway, K. (2014). An investigation of course-level factors as predictors of online STEM course outcomes. *Computers and Education*, 77, 145–150.  
<http://doi.org/10.1016/j.compedu.2014.04.015>
- Wladis, C., Hachey, A., & Conway, K. (2018). No time for college? An investigation of time poverty and parenthood. *Journal of Higher Education*, 89(6), 807-831.  
<https://doi.org/10.1080/00221546.2018.1442983>
- Wladis, C., Hachey, A., & Conway, K. (2020). External stressors and time poverty among online students: An exploratory study. In S. Softic, D. Andone, & A. Szucs (Eds.), *EDEN Proceedings, 2020 Annual Conference* (pp. 172-183). European Distance and E-Learning Network. <https://doi.org/10.38069/edenconf-2020-ac0015>

- Wladis, C., Wladis, K., & Hachey, A. (2014). The role of enrollment choice in online education: Course selection rationale and course difficulty as factors affecting retention. *Online Learning, 18*(3). <http://doi.org/10.24059/olj.v18i3.391>
- Woodley, A. (2004). Conceptualizing student dropout in part-time distance education: Pathologizing the normal? *Open Learning: The Journal of Open, Distance and e-Learning, 19*(1), 47–63. <https://doi.org/10.1080/0268051042000177845>
- Woodley, A., de Lange, P., & Tanewski, G. (2001). Student progress in distance education: Kember's model re-visited. *Open Learning: The Journal of Open, Distance and e-Learning, 16*(2), 113-131. <http://doi.org/10.1080/02680510123105>
- Woodley, A., & Parlett, M. (1983). Student drop-out. *Teaching at a Distance, 24*, 2–23.
- Woodley, A., & Simpson, O. (2014). Student dropout: The elephant in the room. In O. Zawacki-Richter & T. Anderson (Eds.), *Online distance education: Towards a research agenda* (pp. 459–483). Athabasca University Press.
- Woodside, A. G. (2010). *Case study research: Theory, methods, practice*. Emerald.
- Wozniak, H. (2016). *Get ready, get learning: Investigating university students' transition to online distance learning in the health sciences* [Doctoral dissertation, Charles Darwin University (Australia)]. ProQuest Dissertations Publishing. <https://doi.org/10.25913/5ea303a06f5eb>
- Wozniak, H., & McEldowney, R. (2015). Layers of transition: The lived experiences of online distance learners. In T. Thomas, E. Levin, P. Dawson, K. Fraser, & R. Hadgraft (Eds.), *Research and development in higher education: Learning for life and work in a complex world* (Vol. 38, pp. 505–515). Higher Education Research and Development Society of Australia. <https://www.herdsa.org.au/publications/conference-proceedings/research-and-development-higher-education-learning-life-and-42>
- Wright, L. (2015). *Identifying successful online adult learners* [Doctoral dissertation, Walden University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1721464438>
- Xavier, M., & Meneses, J. (2018). The time factor in studies on dropout in online higher education: Initial review of the literature and future approaches. In J. M. Duarte & A. Szucs (Eds.), *Proceedings of the 10th EDEN Research Workshop: Towards Personalized Guidance and Support for Learning* (pp. 357-363). European Distance and E-Learning Network. [http://www.eden-online.org/wp-content/uploads/2018/11/RW10\\_2018\\_Barcelona\\_Proceedings.pdf](http://www.eden-online.org/wp-content/uploads/2018/11/RW10_2018_Barcelona_Proceedings.pdf)
- Xavier, M., & Meneses, J. (2020a). A literature review on the definitions of dropout in online higher education. In S. Softic, D. Andone, & A. Szucs (Eds.), *European Distance and E-Learning Network (EDEN) Proceedings: Human and Artificial Intelligence for the Society of the Future* (pp. 73-80). <http://doi.org/10.38069/edenconf-2020-ac0004>
- Xavier, M., & Meneses, J. (2020b). *Dropout in Online Higher Education: A scoping review from 2014 to 2018*. eLearning Innovation Center, Universitat Oberta de Catalunya. <https://doi.org/10.7238/uoc.dropout.factors.2020>
- Xavier, M., & Meneses, J. (2020c). Fostering retention in online higher education: Students' perceptions of an intervention addressing their first-year experience. In S. Softic, D. Andone, & A. Szucs (Eds.), *European Distance and E-Learning Network (EDEN)*

- Proceedings: Human and Artificial Intelligence for the Society of the Future* (pp. 389-397). <http://doi.org/10.38069/edenconf-2020-ac0037>
- Xavier, M., & Meneses, J. (2021). The tensions between student dropout and flexibility in learning design: The voices of professors in open online higher education. *International Review of Research in Open and Distributed Learning*, 22(4), 72-88. <https://doi.org/10.19173/irrodl.v23i1.5652>
- Xavier, M., & Meneses, J. (2022). Persistence and time challenges in an open online university: A case study of the experiences of first-year learners. *International Journal of Educational Technology in Higher Education*, 19, Article no. 31. <https://doi.org/10.1186/s41239-022-00338-6>
- Xavier, M., Meneses, J., & Fiuza, P. (2022). Dropout, stopout, and time challenges in open online higher education: A qualitative study of the first-year student experience. *Open Learning: The Journal of Open, Distance and e-Learning*. <https://doi.org/10.1080/02680513.2022.2160236>
- Xu, D., & Jaggars, S. (2013). The impact of online learning on students' course outcomes: Evidence from a large community and technical college system. *Economics of Education Review*, 37, 46-57. <https://doi.org/10.1016/j.econedurev.2013.08.001>
- Yang, D., Baldwin, S., & Snelson, C. (2017). Persistence factors revealed: Students' reflections on completing a fully online program. *Distance Education*, 38(1), 23-36. <http://doi.org/10.1080/01587919.2017.1299561>
- Yin, R. K. (2003). *Case study research: Design and methods* (3rd. ed.). Sage Publications.
- Yin, R. K. (2005). Case study methods. In J. Green, G. Camilli, & P. Elmore (Eds.), *Complementary methods for research in education* (3rd ed.) (pp. 111-122). American Educational Research Association.
- Yin, R. K. (2010). Analytic generalization. In A. J. Mills, G. Durepos, & E. Wiebe (Eds.), *Encyclopedia of case study research* (pp. 21-23). Sage Publications.
- Yin, R. K. (2012). *Applications of case study research* (3rd ed.). Sage Publications.
- Yılmaz, A. B., & Karataş, S. (2022). Why do open and distance education students drop out? Views from various stakeholders. *International Journal of Educational Technology in Higher Education*, 19. <https://doi.org/10.1186/s41239-022-00333-x>
- York, J. A. (2014). *Student attrition in higher education: Development of an instrument to assess attrition factors in distance learning only educational environments* [Doctoral dissertation, Southern Connecticut State University]. ProQuest Dissertations Publishing. <https://search.proquest.com/docview/1532797365>
- Young, S. (2006). Student views of effective online teaching in higher education. *The American Journal of Distance Education*, 20(2), 65-77. [https://doi.org/10.1207/s15389286ajde2002\\_2](https://doi.org/10.1207/s15389286ajde2002_2)
- Yukselturk, E., & Inan, F. A. (2006). Examining the factors affecting student dropout in an online learning environment. *Turkish Online Journal of Distance Education*, 7(3), 76-88. <https://files.eric.ed.gov/fulltext/ED494345.pdf>
- Yukselturk, E., Ozekes, S., & Türel, Y. K. (2014). Predicting dropout student: An application of data mining methods in an online education program. *European Journal of Open, Distance and E-Learning*, 17(1), 118-133. <http://doi.org/10.2478/eurodl-2014-0008>

Zimmerman, W. A., & Johnson, G. (2017). Exploring factors related to completion of an online undergraduate-level introductory statistics course. *Online Learning, 21*(3), 191–205. <http://doi.org/10.24059/olj.v21i3.1017>