

EDITORIAL

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Feeding the online: perspectives on food, nutrition and the online higher education

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Introduction

Food is a complex phenomenon encompassing issues as diverse as agriculture, biology, culture, health, environment, the emotions or the socio-economic field (de Garine, 1979; Douglas, 1979; López García, Mariano, & Medina, 2016; Medina, Aguilar, & Solé-Sedeño, 2014). In contemporary global context, the listed issues seem to be aligned, under an emerging food-and-health paradigm. Thus, within the shifts of the health discourses that have taken part in the building of what is called Food Modernity, nutritional narratives have reached new arenas of expression.

Food in society while primarily being a local focus, where communities or nations secured their own provision has become a global internationalise trade. The present food system has the potential to feed the whole of humanity and preventing hunger (D'Odorico, Carr, Laio, Ridolfi, & Vandoni, 2014). However, society is identifying new challenges in terms of the healthiness and sustainability of the different diets (Dernini et al., 2017; Serra-Majem & Medina, 2015) as whole food systems (the recently published and controversial article by Willett et al., 2019, should be a good example). On the other hand, the food field has developed and demands its own methodologies, increasingly seeking interdisciplinarity (de Garine, 2004; McClancy & Macbeth, 2004). As Bosman and Eom (2019) points out in their article published in this collection, the benefit of exploring and designing around the theme of food science and technology exists in the transdisciplinary nature of food which covers the gamut of business viability and economic analysis, customer desirability and consumer behaviours, and technical feasibility and prototyping.

In this regard, both quantitative (especially in the case of nutrition, food science and biochemistry, but also some visions of sociology, *eg.* González Turmo & Mataix, 2004; Mehta & Allison, 2014) and, especially, qualitative approaches (from all those perspectives that correspond mainly to the social field, but not only, *eg.* Hubert, 2004; Medina, 2004) are actually demanding the light of a new and more specialized focus.

We have also to recognize that, in the last two and half decades, the Internet has taken over our lives. In this not-new-anymore environment, different aspects of our daily life have acquired an important presence in the virtual world: immediate communication, social networks, especially with the popularization of applications on mobile devices... But also different aspects of our daily life (from digital signatures to “going online” to the supermarket...). Within this context of internationalisation, food

security, healthiness and sustainability, food has not been an exception and we can consider also that a *new field* has been opened.

Based on the need to tackle these interlinked topics, this special issue aims to raise awareness and help to adapt food related modules/courses to the new opportunities and educational challenges, with an emphasis on projects, case studies, innovative teaching methodologies in formal and lifelong learning training, and innovative experiences of the ICT curricular inclusion food related programmes.

Food and the virtual: is the virtual world changing our food and/or food conceptions?

The emergence of this field allows us to reformulate the idea of understanding food and/or nutrition in the present (virtual) world (Mariano, Medina, & López García, 2017). Thus, according to Rousseau, new platforms such as blogs, webzines, Facebook, Instagram or Twitter have opened up as new spaces to talk about food. Virtual communities have flourished in a very short space of time through seemingly simple facts such as sharing recipes or stories beyond the traditional boundaries of place and profession (Rousseau, 2012: x-xi).

New categories related to food, such as “Foodporn”, “Gastrosphere”, virtual “Foodies” or “Instafoodies”, “Culinary bloggers”, etc., emerge in a host of websites and social networks specializing in issues such as food aesthetics, wine and food tourism, reviews, recommendations and criticism of restaurants or products, production processes and food consumption, healthy diets and prescriptions, nutritional coaching, diet fads, environmental advice, provenance queries, social and political influence in foods or simply contacts and interpersonal and/or institutional influences (Aguilar et al., 2014; Mariano et al., 2017: 21–22).

The virtual world has transformed our conceptions of food, the way we access information, the way we buy food, and even our eating behaviours ... And, of course, it is also transforming the way we study food.

On food and the online higher education: lights and shadows on interdisciplinarity, participation, skills and competencies

Following this in a reflective fashion, we can observe a similar trend in the higher education teaching work. In the last two decades, and as Esteve points out, the European Higher Education Area has radically transformed university studies by placing the student at the centre of the educational process (Esteve, 2016). This new educational paradigm and its new implicit assessment of acquired skills forced teachers to rethink classical learning objectives (Correa & de Pablos, 2009) and, in a framework like this, the potential that Information and Communication Technologies (ICT) have (Zayer, Beran, & Alcaide-Pulido, 2017).

The way of observing teaching has changed, and has already overcome the old model of a passive presence without discussion (and without the possibility of reflection or dissension). As Aguilar and Medina (2017) points out, the virtual world, and specifically social networks can assist the training on different aspects of almost any specific topic. These tools allow the teaching and learning practitioner to overcome the limitations of the teaching classroom, increasing the interaction between students. Limitations that,

otherwise, would not have reflected on a topic or they would have done it in a relatively precarious way within the strictly academic context.

On lights...

Higher education, and particularly postgraduate programmes in Food, Food Science, Nutrition and Health, take a multidisciplinary approach, combining subjects such as nutrition, food science, psychology and, more and more frequently, social and cultural perspectives. Following Bosman and Eom's (2019) review of literature in this collection, different research on food postgraduate virtual programmes showed important teaching-related benefits that have contributed in a significant way to the success of these programmes. In this regard, they show how authors like Cohen (2010) points out after his evaluation of a cross-disciplinary undergraduate course that integrates design and liberal arts intending to improve the sustainability of the school's food system, that the course was effective and helpful in learning about sustainability and urban systems through research, problem-solving, and communication. Barlett et al. (2008) conducted research in a multidisciplinary faculty professional development program that aimed to integrate sustainability and environmental issues related to food science and technology into the higher education curriculum. Data collected from ninety faculty participants showed an increased awareness of systems thinking, desire to change daily habits, motivation to get more involved in political action, and a value proposition for teaching living systems from a more holistic approach including the natural sciences, social sciences, and humanities.

On the other hand, Parr and Trexler (2011), who investigated student perceptions related to sustainable agriculture and food systems education, find a strong connection to experiential learning theory in that learning was enhanced when the knowledge was co-constructed by learning through both classroom theory and applied fieldwork. Regarding this same field (sustainable agriculture and food systems education), Galt, Clark, and Parr (2016) suggest that values can be used as a guiding learning element to promote participatory dialogue, increase awareness around personal thought and use of language, and facilitate agency and empowerment towards civic action. Galt et al. (2013) show also in their research how the students increased their learning through the inquiry process, and the reflective essays played an important role in reinforcing learning and allowing for instructors to understand the students' perceived learning.

... And shadows

But even if students can show a very high level of motivation and satisfaction with this courses and have the perception of having reached an effective learning outcome in knowledge, competences, attitudes and behaviours (Vaz-Fernandez & Caeiro, 2019, in this collection), we find, on the other hand, the perception that there are still a number of challenges and problems that must be solved:

- it seem to be in this kind of programmes a gap existing between competencies and reality. In this regard, the students frequently face difficulties of connecting competencies to the real-world learning opportunities (Brundiars, Wiek, & Redman, 2010);
- there are limited best practices and critical analysis related to curriculum design and teaching within these types of programs (Valley, Wittman, Jordan, Ahmed, & Galt, 2018);

- additional administrative support and long-term and institutional commitment (where efforts are provided beyond the classroom) is required to effectively design and implement courses that would involve more faculty and advance the college's mission (Barlett, 2011; Berger, Scott, Axe, & Hawkins, 2013).

Finally, and regarding multidisciplinary and/or interdisciplinarity, it should also be noted that some programmes, in order to achieve students' knowledge of certain subjects of the curricula of food sciences or health-related programmes, usually focus on scientific or experimental disciplines while ignoring the human/social aspect of the training (Aguilar, Medina, Pons, & Saigí, 2013; De Garine, 2004; Owen et al., 2011). This fact is creating an important gap in skills on student achievement. As an example, the present understanding of sustainability and sustainable development goals requires an understanding of the economic, environmental and social aspects of food production. Not training the future professionals on the skills needed to understand social and humanities needs of communities, individuals will mean that we won't be equipped for the future global challenges of humanity (Assembly, G, 2015; Fien, 2002).

Feeding the online: ICT, virtual networks and social and collaborative dimensions of learning

The new conception (and the constant evolution) of virtual social networks affect our conception of the world, our capacity for observation and analysis, but also our abilities and expectations of learning. Tweeter (Chawinga, 2017), Instagram (Aguilar & Medina, 2017) or blogging (Conde-Caballero, Castillo, Ballesteros-Yáñez, & Mariano-Juárez, 2019, in the present Issue) are playing an increasingly important role as educational tools that allow the acquisition of skills in a more interactive way, especially in areas related to food and nutrition.

In this regard, a more holistic approach is considered in the European food studies programmes, where the central core of courses content considers food technology, consumer sciences, business and economics, food culture or nutrition and health studies (de Moura et al., 2010). This multidisciplinary approach is complemented with the Bologna Process for creating the European Higher Education Area, where specification of generic competencies that enable students to work in teams, to interact with other students and other subjects, to think critically is made within each programme (CRE, 2000).

On the other hand, advances in information and communications technologies (ICT) have exerted a tremendous impacts on the format and on the approach to teaching and learning. Most notably in terms of online education programmes (Hay, Peltier, & Drago, 2004). These programmes provide the "modern" student a method of study that accommodates diversity, allowing to set individual learning objectives and course timeline (Azeiteiro, Bacelar-Nicolau, Caetano, & Caeiro, 2015).

According to Carapeto and Barros (2019) in the current issue, nutrition education may be any set of learning experiences designed to facilitate the voluntary adoption of eating and other nutrition-related behaviours conducive to health and well-being. By extension, instead of only transmitting factual information on food, nutrition, health and food safety concepts and processes, higher education is to use experiential and interactive learning processes. With this learner centred approach the adoption of

safety, healthy, and wellbeing food attitudes and behaviours will be encouraged. This transformative approach, along student personal and professional lives, has the potential of best supporting critical reflection (Shanley, Thompson, Leuchner, & Zhao, 2004).

This fact is particularly relevant considering that the majority of online food programme students are, for the most part, working full-time and report job and employment goals as a reason for enrolling in online courses (de Moura et al., 2010; Medina, Càceres, & Miró, 2018; Shanley et al., 2004). As pointed out also by Hansen (2008), the usefulness of online courses for developing skills leads to the application of class knowledge to the real world. At the end, each student in his/her daily life is a potential food consumer that has experienced food consumption decisions and/or a professional capable of influencing wide decisions in food production. They can support a critical reflection of what they learned, increasing their critical thinking capabilities, and, for example, reward more healthy and sustainable food products (Grunert, 2011).

Following social constructivism, that emphasizes the social dimension of individual's learning (Vygotsky, 1978), some researchers suggest that collaborative learning is crucial to enrich and increase online student learning experiences (Pallof & Pratt, 2007; Vonderwell, 2003). Effective collaborative learning consists of students perceiving the importance of working actively with their peers in order to learn and act in ways which ameliorate the educational procedure and accentuates the value of cooperation. In online environment programmes, students comment on topics, criticise one others' comments, share materials and send their contributions, making their knowledge and professional skills achievement more explicit (De Moura & Aires, 2018).

In addition, collaboration may regulate positive (e.g. engagement, excitement) and negative emotions (e.g. anger, frustration, confusion, boredom) from studying online, because interactions may help students to deal with interest and enthusiasm or stress and uncertainty (Berenson, Boyles, & Weaver, 2008; O'Regan, 2003; Zembylas, 2008). Collaborative learning may be also achieved through the inclusion of support materials (teacher's slide presentations and original documents, video, audio, scientific papers, organisation framework papers, food regulations, and internet websites) and a number of activities, with an accompanying teacher support, such as asynchronous discussion forums, chat, blogs, surveys, glossaries, journals, wikis and quizzes, that appeals to a diversity of students with multiple learning styles (Aguilar et al., 2013).

Conclusions

The field related to food and nutrition, together with others such as health sciences in general, have been slow to develop effectively in relation to higher education online. However, its development, although late, has been effective and has not stopped advancing in recent years.

The different fields of action of the virtual world have become tools that, today, allow us to think about higher education on food in relation to areas that go far beyond the classroom. Regarding the food field, and following the different findings of the literature, we actually know that the higher education programmes on food, food sciences and nutrition provide greater involvement, interaction with peers, digital skills, management of social networks, as well as a greater perception of the applicability and usefulness of knowledge.

However, despite the progress, there are still many problems and challenges to solve like gaps between competencies and reality; difficulties of connecting competencies to the real-world learning opportunities; a lack of administrative and/or institutional commitment, and even the lack of confidence of certain institutions and universities in the real possibilities of the online education, especially significant in those fields related to health sciences, of which food is one of its pillars.

As Carapeto and Barros (2019) points out in their article in this dossier, e-learning still remains a challenge for the food field, but also for all areas of knowledge. At the same time it breaks paradigms, it brings innovation and new perceptions in pedagogy, thus facilitating an alternative process of teaching and learning.

This fact seems to be evident for food, food sciences and nutrition higher education programmes. As food online courses and degree programmes are becoming available through most of universities and lifelong learning training modalities, there is a need for reliable information and data to support the legacy of these programmes: “Learning Anywhere Anytime for Anyone” (Blocher, De Montes, Willis, & Tucker, 2002).

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