TOWARDS AN INCLUSIVE DEFINITION OF E-LEARNING

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Towards an inclusive definition of e-learning

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This research aims to construct an up-to-date and inclusive definition of the concept of e-learning that can be accepted by the majority of the scientific community and which will serve as a framework of reference for experts and professionals in this field. This rigorous, inclusive definition aims to contribute to the conceptual debate on e-learning and therefore help advance knowledge in this field.

This research was carried out at the Open University of Catalonia’s (UOC) centre for research, innovation and e-learning, the eLearn Centre (eLC). This pioneering centre in the field of e-learning is a national and international benchmark.

The research was sponsored by eLC director Dr Begoña Gros. The research team, led by Dr Albert Sangrà, was made up of Drs Dimitrios Vlachopoulos, Nati Cabrera and Silvia Bravo. Two research assistants also took part: Hafsa Akhrif and Stefanie Schuler.

A qualitative methodology was followed in this research and it was split into two phases. The first phase involved a painstaking and exhaustive literature review of the different definitions of e-learning drawn up at different times from different perspectives. This review sought to identify different categories of definitions characterised by certain common features. The second empirical phase involved applying the Delphi method to a panel of experts from the field of education and information and communication technologies (ICT), which led to a consensus on a definition of e-learning.

In parallel to the Delphi method, four focus groups were held with academics and professionals from the Open University of Catalonia (UOC) to get a deeper insight into their perspective with regard to e-learning and the different interpretations of what it means, bearing in mind that the UOC is an institution that has carried out its activities exclusively by means of e-learning ever since it was set up.

The main findings of the research process revealed a latent need (during the literature review) or manifest need (from the Delphi method and focus groups) to create an agreed definition to act as an up-to-date reference. Definitions of the concept of e-learning vary depending on the profile of the author in question, their specialist area / field of work, the geographical area in which they live and work, and the degree to which e-learning had evolved at the time when the definition was given. From a contextual view, there are therefore substantial differences between one definition from 2000 and another one from 2005. Moreover, it proved complicated to fit all the characteristics that could apply to e-learning in a single definition, although there was agreement that it is a concept that goes far above and beyond technologies. The main characteristics of the concept refer to the teaching and learning mode, a new educational model, the use of electronic devices and media, easy access, and evolving, improved education. The idea of e-learning also focuses on attributes such as flexibility and interaction, and stresses the active role played by students and teachers.

Taking account of the findings of the literature review and the findings of empirical research and taking on board the contributions of the members of the focus groups, the following definition of e-learning was finally agreed upon by the vast majority of the experts taking part in the research: A form of teaching and
learning - which may represent a part or the whole of the education model in which it is used - that makes use of electronic media and devices to facilitate access, promote evolution and improve the quality of education and training.

In the opinion of this team of researchers, this definition is opportune and valid at this moment in the scientific field, given that it is backed by the consensus of international experts in the field of education and ICT.
INTRODUCTION

Since its beginnings in the 1990s in the context of the information and knowledge society, there has been an explosion of different interpretations of the concept of e-learning.

We hold the following working hypotheses with regard to this point:

A) There is a wide variety of different conceptualisations of e-learning in the field of education and ICT.

B) There is no single comprehensive, holistic definition of e-learning.

C) Approaches to e-learning vary depending on the profile of the author in question, their specialist area/field of work, geographical area in which they live and work, and the state of the art of e-learning itself (in relation to technological advances), given that a definition of e-learning from 1990 is unlikely to be accepted in 2000.

This range of different concepts can lead to a confusing and even contradictory situation, as pointed out by Falivene, Gurmendi & Silva (2003), given the many different perspectives that give rise to these definitions. An additional problem is that conceptually different terms can sometimes be used instead of ‘e-learning’. For instance, although the terms computer-based training (CBT), technology-based training (TBT) and computer-based learning (CBL) (Paulsen, 2003) have often been used as synonyms, on other occasions they have been given different meanings in different fields (Falivene, Gurmendi & Silva, 2003). Similarly, Boneu says “the terms related to e-learning can often be confusing, given the number of acronyms, technologies, overlapping definitions and converging applications in both technology and education and training” (Boneu, 2007:37). In addition, Maturana notes that there are many different ways of talking about e-learning, some stressing its meaning, some defining it and others driving it (Maturana, 1986). In this context, there is a clear need to lay solid foundations for a holistic and comprehensive definition suitable for today’s world that can help frame conceptual debates.

This project aims to offer an inclusive definition that can place future research in an up-to-date terminological context and which is likely to survive long enough to consolidate itself, even though this will not be indefinitely. This inclusive definition should serve as a framework of reference encompassing different subject areas and embracing different models for using e-learning. This applied research has a pragmatic approach to adding to the body of knowledge on the subject: once an inclusive definition is agreed, the goal is to offer tools for categorising and comparing different models of e-learning and then to take the relevant steps and actions.
In keeping with the objectives, a qualitative methodology was designed, taking advantage of its emerging (Marshall & Rossman, 1995) and flexible nature (Denzin & Lincoln, 1994). As a qualitative study, this systematic research work is guided by rigorous, although not necessarily standardised, procedures (Taylor & Bogdan, 1986). This methodology offers greater in-depth insight into informants' attitudes, opinions, meanings and perceptions (Krueger, 1988) with regard to how they understand e-learning and also takes on board the opinions of qualified experts on the subject (Parisca, 1995).

**DATA-GATHERING TOOLS**

A triangular strategy was decided upon to combine the literature review with empirical analysis based on two basic data-gathering techniques. The literature review aimed to sketch out a general map of the different definitions of e-learning to help identify different groups of definitions that have certain factors in common. The empirical part was designed by taking the Delphi method and focus groups as the most suitable ways to gather data. The first phase was complemented by adding new visions and creating knowledge of the definition to be created from the point of view of the very actors involved in this field, e-learning professionals. In addition, it took on board the knowledge of leading education and ICT experts to analyse the complex problem (Linstone & Turoff, 1975) of reaching consensus on the definition of the concept in question.

**LITERATURE REVIEW**

The literature review, understood as a systematic study to interpret the findings of research on a given subject (Vogt, 1999), helped reveal the background to the issue and enabled researchers to gather definitions of e-learning from the field of education and ICT to build up a comprehensive vision of the existing theoretical framework for the subject.

This review was done by carrying out an exhaustive analysis of works published after 2005, and a more selective analysis of those published before 2005. In a field as recent as education and ICT, which is constantly evolving at a dizzy rate, it would not be worth analysing literature exhaustively over the last five years, given that some theoretical considerations fall into disuse and become obsolete. Nonetheless, before starting to review the literature, it was thought worthwhile to re-examine the conception of e-learning before 2005 in publications by widely acclaimed and internationally recognised authors. It was felt that many of their opinions would still be valid and many of the authors who have published work on this subject more recently have drawn on their contributions.

The following key words were used for this research: e-learning, definition of e-learning, conceptual framework for e-learning, concept of e-learning, online learning, characteristics of e-learning, education and ICT, categories of e-learning, in English, Catalan, Spanish, French, German and Italian.
The following process was followed:

A) Review articles with national and international scope, indexed on the Social Sciences Citation Index (ISI Web of Knowledge) published after 2005, as well as indexed conference papers.


C) Review websites (blogs, glossaries, etc.) of recognised institutions that analyse the concept of e-learning.

It is important to point out that in this first phase of research, the categorisation of definitions was mainly descriptive, with no intention to present any category as more comprehensive or more widely recognised, since this task corresponds to the second phase of the project, to be carried out using the Delphi questionnaires.

Secondly, the literature review aimed to examine most international conferences on e-learning, especially those held in Europe, the United States and Oceania. Similar activities in Asia and Africa were the subject of less analysis. Finally, the literature review was limited to work published in English, French, Italian, German, Spanish and Catalan. Despite these limitations, the literature review was highly representative as far as the concept of e-learning was concerned, since most of the major conferences and articles use English as their working language.

THE DELPHI METHOD

The second phase made use of the “Delphi method”, technique based on principle of collective intelligence (Parisca, 1995) and which can be characterised as a “method for structuring a group communication process, so that the process is effective in allowing a group of individuals, as a whole, to deal with a complex problem” (Linstone & Turoff, 1975:5). The Delphi method can also be used for subjects where there is little information, subjects where a prospective analysis is sought, and subjects where there is little consensus (Vélez, 2002). This final reason more than justifies its use to construct an inclusive definition of e-learning, when there is a lack of consensus on the issue.

Two methodological considerations should be borne in mind when applying the Delphi method, since they determine the quality of the results obtained. The first key point is that experts should be chosen very carefully, since this will enable the researcher to use a smaller panel in complete confidence (Loo, 2002). This study considered “experts” to be researchers who have led - partial or full - research into the use of information and communication technologies (ICT) in education, by writing articles or books.

The second point refers to carrying out the questionnaire. The structure and content of all the Delphi questionnaires used in this study, as well as the assessment of this data-gathering tool, were revised by experts from the departments of Research and Diagnostic Methods in Education at the University of Barcelona and the Autonomous University of Barcelona, and e-learning experts from the Netherlands, Norway and Canada, by means of a first-round pilot application.

Two basic limitations were identified in this phase. Firstly, 33 positive replies were received from the 103 e-learning experts invited to take part in the research, ie 32.3% of the total number of participants. Experts in research methods considered this figure to be large enough to carry on with the project. Although the initial list contained representatives from all the continents, there was not sufficient involvement from Africa or Asia. Since the project timetable did not allow for more time to include more experts, the study was carried out without representatives from these geographical areas. Even though these
continents are not pioneers in this field, the study would have been more complete if experts from these areas had taken part.

Secondly, the vast majority of our participants (80%) are related - on a work level - to higher education and have studied teacher training or education sciences. Although the initial list included professionals with a wide range of different profiles, fewer professionals from technology and engineering sectors actually took part (15%). This uneven distribution may well have a slight influence on the assessments of the different e-learning categories identified. Nonetheless, the fact that overwhelming consensus (95%) was reached on agreeing an inclusive definition during the final Delphi round shows that this definition satisfied all our participants.

**DELPHI PROCEDURE**

Using the aforementioned definition of “expert” and with the goal of including participants from all the continents in the research, an initial list of 103 experts was drawn up with the following geographical distribution:

<table>
<thead>
<tr>
<th>CONTINENT</th>
<th>ABSOLUTE NUMBERS</th>
<th>PERCENTAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>50</td>
<td>48.54%</td>
</tr>
<tr>
<td>America</td>
<td>28</td>
<td>27.18%</td>
</tr>
<tr>
<td>Oceania</td>
<td>10</td>
<td>9.70%</td>
</tr>
<tr>
<td>Asia</td>
<td>10</td>
<td>9.70%</td>
</tr>
<tr>
<td>Africa</td>
<td>5</td>
<td>4.85%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>103</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

For the purpose of the research, a stratified random sample according to geographical distribution (Loo, 2002) was used to ensure the greatest possible representativeness. Questionnaires were sent to nationally and internally acclaimed experts in the field of education and ICT. In this project, the Delphi method was carried out in two rounds, plus a prior pilot round. There were therefore three chances for circulating and replying to the questionnaires, following Loo’s recommendations, which suggest carrying out three or four rounds (matching the number of rounds to the research objectives) and stopping the rounds when consensus is reached or when the results are repeated, so the panel of experts don’t lose interest (Loo, 2002).
The questionnaire corresponding to the first round contains most of the information on the concept of e-learning. It is divided into fifteen questions: ten socio-demographic questions plus five questions that aim to get the panel of experts to think about the different approaches to the concept of e-learning, starting with the literature review carried out in the first phase of the study. Once the technical team had processed the results of the first questionnaire, the second Delphi round got under way, in which participants were presented with an inclusive definition of e-learning in accordance with the characteristics given by the majority of the experts taking part, and were asked to assess this definition. All the questionnaires included both open and closed questions. Open questions “allow experts to express themselves in their own words and capture information and data that wasn’t explicitly asked for in the questionnaire” (Loo, 2002:765). As a result, from a conceptual and methodological perspective, the use of quantitative and qualitative data gives a deeper insight into the issue by triangulating the research methods (Dootson, 1995).

**First Delphi questionnaire**

The questionnaire for the first round of the Delphi method contained fifteen questions and was written in English and Spanish. The experts had to answer the questions in a spontaneous but carefully reasoned way. This means they could draw on the knowledge they had built up over the course of their involvement with the subject, without having to consult outside sources or resources. This first questionnaire was divided into two general parts.

The first part contained ten socio-demographic questions related to age, country of residence, sex, education, current job, experience in the field of e-learning and contact data (participants’ email address). Nine of these questions were open questions.

The second part of the questionnaire contained a brief summary of the literature review on the concept of e-learning and presented four main categories of definitions identified during the review: a) technology-driven definitions; b) access-system-orientated definitions; c) communication-orientated definitions; and d) education-driven definitions. Following this brief summary there were five assessment questions on these four categories of definitions: More specifically, the first question asked participants to rate each of the four categories using a 1-5 Likert scale (1 = this definition does not express the concept of e-learning very well; 5 = this definition expresses the concept of e-learning very well). The second, open, question complemented the first, since it asked participants to justify their assessments from the first question and/or say whether they thought any one of these categories expressed e-learning best of all.

The third and fourth questions were also open questions and were addressed to the experts taking part who thought there ought to be a further category for a definition of e-learning in addition to those given in the brief summary of the literature review. In this case, they were asked to give this new category a name and give details of its characteristics.

Finally, the fifth question gave participants a free space to comment on any aspects that had not been mentioned in previous questions and which they felt were important and necessary to define the conceptual framework for e-learning.

**Second Delphi questionnaire**

Following a first round that saw general agreement amongst the experts taking part, it was decided that one more round would be enough to reach consensus on the definition of the concept of e-learning, and a proposed definition was drawn up.
Based on the trends expressed by the experts in the first round and their individual comments on the key characteristics of e-learning, a second questionnaire was prepared containing a proposed definition.

In this phase, the experts were asked to rate this new definition using a 1-5 Likert scale (1 = this definition does not express the concept of e-learning very well; 5 = this definition expresses the concept of e-learning very well) to see whether this definition had successfully incorporated their thoughts and perceptions and the results of the literature review of e-learning, in order to reach the greatest possible consensus.

In addition to this assessment question, the second questionnaire also offered the experts a space to leave their comments, suggestions and/or questions on the subject of constructing this inclusive definition.

Finally, it is important to point out that since this questionnaire was shorter in length, a single version was made in Spanish and English.

**FOCUS GROUPS**

While the Delphi rounds were being carried out, four focus groups were held in 2010, with fieldwork done at the Open University of Catalonia (UOC). A focus group can be defined as “a carefully planned conversation, designed to obtain information about a defined interest area, in a permissive, non-directive environment in order to elicit opinions from all participants (Krueger, 1988:24). The importance of choosing this method for this research can be seen in Morgan’s definition of focus groups: “The most important thing about focus groups is the explicit use of interaction to obtain data and knowledge that would be less accessible without this interaction within the group” (Morgan, 1997:2).

The decision to hold four focus groups follows the recommendations of Cohen & Engleberg (1989) and Krueger (1991), who suggest that focus groups should be continued until the findings suggest that an additional group would add no new information, something that usually occurs after the third or fourth group.

The goal of the focus groups was to obtain internal UOC personnel’s point of view on the concept of e-learning and its different meanings, so that people who are intensively involved with e-learning could provide relevant information for the research.

This overall goal was broken down into the following specific aims:

A) Understand what e-learning is for each of the groups defined within the UOC and identify possible differences.

B) Assess the different conceptualisations of e-learning.

C) Work towards a definition of e-learning as perceived by the people who actually carry it out, to be compared and contrasted with a definition obtained from experts’ opinions.

With regard to selecting participants, the heterogeneous-homogeneous balance was struck in the following manner: in order to promote discussion and interaction and obtain different group discourses, two collectives with different profiles (heterogeneity) with respect to the segmentation variable “role within the UOC” were considered. In order to ensure equality for all group members and avoid any potential distance or conflict, the compatibility variable (homogeneity) (Morgan, 1995) “belonging to the UOC” was considered, since a strictly homogeneous group “would not produce a discourse or would produce a totally redundant discourse” (Ibáñez, 1986:276).

As a result, the following variables were taken into account for selection:
A) Belonging to the UOC.

B) Role within the UOC: academic or management personnel.

C) Experience: years at the UOC.

All the participants were linked to the object of study, since they work in the field of e-learning and there are therefore “ties between the participants and the material under discussion” (Morgan, 1996: 149).

The groups were led by an expert moderator skilled in the use of this information-gathering tool. More specifically, they were led by internal personnel from the eLearn Centre in collaboration with the Salvetti & Llombart market research institute. The following steps were taken:

A) A discussion script was drawn up.

b) The focus groups were held and supervised.

d) Information was gathered and each focus group was transcribed word for word.

e) Each focus group was specifically analysed in detail.

f) The information was analysed as a whole.

This phase was limited by the third group, since not all registered participants were able to take part and the focus group was held with only three participants. Nevertheless, there was sufficient representation of the UOC community, given that one focus group was held with just academics, one with just management personnel, and one was a mixed group (each group had eight participants). The fact that one focus group had fewer participants than expected has very little meaningful influence on the results of the research.

Description of focus group participants

The first focus group had seven lecturers from different areas of knowledge at the UOC. The following figure shows their general characteristics in a more schematic fashion:

Table 2. General characteristics of the participants in the first focus group.

<table>
<thead>
<tr>
<th>Participant 1</th>
<th>Participant 2</th>
<th>Participant 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economics and business</td>
<td>Psychology and education sciences</td>
<td>Arts and humanities</td>
</tr>
<tr>
<td>Link to the UOC 2004</td>
<td>Link to the UOC 2004</td>
<td>Link to the UOC 2001</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Participant 4</th>
<th>Participant 5</th>
<th>Participant 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information technology, multimedia and telecommunications</td>
<td>Information and Communication Sciences</td>
<td>Economics and business</td>
</tr>
<tr>
<td>Link to the UOC 1998</td>
<td>Link to the UOC 2004</td>
<td>Link to the UOC 2005</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Participant 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information technology, multimedia and telecommunications</td>
</tr>
<tr>
<td>Link to the UOC 2001</td>
</tr>
</tbody>
</table>
The second group had seven professionals from the UOC from different areas within the field of management. The following figure shows their general characteristics in a more schematic fashion:

**Table 3. General characteristics of the participants in the second focus group.**

<table>
<thead>
<tr>
<th>Participant</th>
<th>Learning Resources</th>
<th>Link to the UOC 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant</td>
<td>Library</td>
<td>Link to the UOC 2008</td>
</tr>
<tr>
<td>Participant</td>
<td>Innovation Open Office</td>
<td>Link to the UOC 1997</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Participant</th>
<th>Education Technology Office</th>
<th>Link to the UOC 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant</td>
<td>Library</td>
<td>Link to the UOC 2009</td>
</tr>
</tbody>
</table>

The third group was smaller, with three lecturers from different areas at the UOC. The following figure shows their general characteristics in a more schematic fashion:

**Table 4. General characteristics of the participants in the third focus group.**

<table>
<thead>
<tr>
<th>Participant</th>
<th>Economics and business</th>
<th>Link to the UOC 1998</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant</td>
<td>Psychology and education sciences</td>
<td>Link to the UOC 1996</td>
</tr>
<tr>
<td>Participant</td>
<td>Psychology and education sciences</td>
<td>Link to the UOC 2003</td>
</tr>
</tbody>
</table>

The fourth focus group was a mixed group, with participants from management personnel and UOC academics. The following figure shows their general characteristics in a more schematic fashion:

**Table 5. General characteristics of the participants in the fourth focus group.**

<table>
<thead>
<tr>
<th>Participant</th>
<th>Learning Resources</th>
<th>Link to the UOC 1998</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant</td>
<td>Education Technology Office</td>
<td>Link to the UOC 1998</td>
</tr>
<tr>
<td>Participant</td>
<td>Arts and Humanities</td>
<td>Link to the UOC 2000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Participant</th>
<th>Information Technology, Multimedia and Telecom</th>
<th>Link to the UOC 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant</td>
<td>Information Technology, Multimedia and Telecom</td>
<td>Link to the UOC 2007</td>
</tr>
<tr>
<td>Participant</td>
<td>Innovation Open Office</td>
<td>Link to the UOC 1998</td>
</tr>
</tbody>
</table>

**FOCUS GROUP PROCEDURE**

Each group lasted for two hours. Participants were selected and contacted internally using convenience sampling (Cohen, Marion & Morrison, 2005). The focus group script was designed based on different subjects related to the object of study and included the following activities:

1. Introduce participants: name, number of years at the UOC, role and job title at the university.

2. Obtain a definition and understanding of the concept of e-learning for each of the defined groups: find out how they would define e-learning, which aspects are vital for explaining it, what sets e-learning apart from other forms of learning.
3. Exercise 1 (cards): in order to identify the key factors for obtaining a suitable definition of the concept in question, participants individually wrote down the attribute or aspects (adjectives, nouns, etc.) that came to mind when they thought about e-learning. Next, all these ideas were brainstormed to choose five attributes considered to be the most suitable for defining the concept, and the motives for choosing them were discussed.

4. Exercise 2 (individual definition) each participant individually wrote down their definition of e-learning on a card. The three most suitable definitions were chosen from these, and the motives for choosing them were discussed.

5. Exercise 3 (PowerPoint with definitions of the concept): the participants were given a PowerPoint document with different definitions of the concept of e-learning in informative fields (newspapers, magazines, etc.). They read the definitions together and then each participant rated them individually. In addition, they marked words or passages they didn’t like or didn’t agree with in red, and marked the words or passages they thought most suitable in green. Then they discussed the reasons for choosing the best definition. Next, they matched the attributes chosen in the first exercise to each of the definitions (seeing which attributes were reflected in each definition).

6. The participants identified the most suitable definition for defining the concept of e-learning, along with the key words and concepts that made it up, and the definition was improved until they reached the most suitable informative definition.

7. The aim of the last exercise was to identify how satisfied participants were with the previously defined definition of the concept of e-learning, hear their assessment of it and find out whether this definition matched the UOC. The findings of all the exercises were used to agree on a final definition of the concept in a consensual fashion.

The findings from each group were analysed following the same structure. The following points were analysed for each group:

A) Description of the focus group: the characteristics (experience: numbers of years at the UOC / role: academic or management) of each participant in the different focus groups were set out.

B) Comprehension and construction of the concept of e-learning: the findings of the three exercises on the concept of e-learning were analysed:

1) Analysis of the attributes of the concept.
2) Analysis of the theoretical opinions and definitions of the concept.
3) Assessment of the agreed definition.

Finally, the information underwent integrated analysis to assess the key elements factors in the final definition and how it related to the UOC. It is worth stressing that each focus group followed the same system of moderation. However, some differences exist between the different analyses since they match each focus group.
Findings and discussion

This section sets out the findings with regard to the three research phases carried out. Firstly, it presents the findings of the literature review, followed by the findings of the Delphi method and finally the findings of the focus groups.

Findings of the literature review

As mentioned above, as new technological and educational phenomena have been developed, a vast range of e-learning-related terminology has been coined in parallel. Terms such as Digital Teaching and Learning (DTL), Virtual Learning Communities (VLC) and Technology Enhanced Learning (TEL) are sometimes used alongside the term e-learning. The term Blended Learning refers to a mixture of different learning environments, eg (face-to-face/online). These and other English-language terms, such as e-government, e-tutoring, etc., are currently widely used. Finally, another common term is virtual education, which refers to non-face-to-face education using ICT. While searching for an explanation of this variety of different terms, Bates & Poole (2003:127) talk about a continuum of technology-based learning models. The define four main models: face-to-face learning (no e-learning), classroom support model, blended model, and online distance education (ful e-learning). Each model is governed by its own principles and cannot be considered to define e-learning independently (Sangrà, 2008).

This continuum of learning models, discussed by Bach, Haynes & Lewis-Smith (2007), has helped create this range of different terms brought about by different approaches. This is partly explained by fact that the concept of e-learning is a new and evolving phenomenon.

In the knowledge society, information and communication technologies play a key role that calls into question the conventional teaching world familiar to us up until now. The impact of technology on education is not only a technical issue, but has also brought about huge changes for students and teachers, teaching methods, goals, the purpose of universities, etc. Universities and higher-education centres can still be characterised by forms of organisation with agrarian and industrial roots: hierarchical, bureaucratic and inflexible structures and procedures that are completely contrary to the changes that new technology has brought about in the organisation of labour: new post-industrial forms of organisation with highly qualified, flexible workers (Bates, 2005). As the same author points out, universities have to adapt to the changing learning needs of society by acknowledging that technology can be used to overcome the shortcomings of the current, traditional teaching system in higher education.

The result of combining and applying these technologies to the field of education and training is the appearance of e-learning, a concept that arises as a result of the dynamics that characterises the early 21st century in terms of the need for and emergence of global education systems that can keep pace with technological advances and which meet stringent quality standards. Since this concept is the result of the fusion of several different
subject areas, such as computing, information and communication technology and education sciences, and is a relatively recent area still being assessed, it is hard to find a single, exact definition for it.

As a result, several different approaches have been used to try and define the concepts: academics, organisations, companies, institutions, societies, states and even individuals. This phase looked at the definitions given by experts on the subject and pioneering organisations and professionals in this field. In addition, many academic experts in the field of education and ICT have put considerable time and effort into studying this phenomenon without ever giving it an explicit, specific definition. In this study, therefore, these authors are mentioned in terms of their contributions to giving explicit definitions of the term e-learning.

This section sets out what these pioneering experts, professionals and organisations understand by e-learning. Firstly, it contains the findings of the literature review carried out on what was understood by the concept of e-learning before 2005. Here we find the Egaña’s (2000) definition, who presents e-learning as “a new concept of distance education which integrates the use of ICT and other didactic tools for training and education. According to him, e-learning uses a range of different tools and media such as the internet, intranets, CD-ROMs and multimedia presentations, and the pedagogical contents and tools vary depending on the specific requirement of the individual and organisation in question.

A year later, Rosenberg (2001:28) defined e-learning as “the use of technologies and the internet to deliver a wide range of solutions to improve knowledge and performance”. According to Rosenberg, e-learning is based on three key criteria:

A) Networks, which make it easier to update, store, recover and instantly distribute and share education and information.

b) It is delivered to the end user through the use of computers using standard internet technology.

c) It focuses on the widest possible vision of learning that goes above and beyond traditional qualifications paradigms.

In 2003 we find several definitions from different areas: Garrison & Anderson (2003: 23) describes e-learning as “learning facilitated online through network technologies”, while Ruipérez (2003:23) stresses other factors and defines the concept of e-learning as “distance teaching characterised by a physical separation between teacher and student, between whom there is a mainly asynchronous two-track communication where the internet is the preferred means of communication and distribution of knowledge, so that the student is at the centre of an independent, flexible education, since they have to manage their own learning, generally with the help of external tutors. Morrison’s (2004: 4) definition follows in the same line, presenting e-learning as “the continuous assimilation of knowledge and skills by adults stimulated by synchronous and asynchronous learning events which are authored, delivered, engaged with, supported and administered using internet technologies”. According to Clark & Mayer (2003:201), “e-learning can be defined as instruction delivered via a computer that is intended to promote learning”. The Australian National Training Authority gives two definitions of e-learning: “a wide set of applications and processes that use all available electronic media to deliver more flexible vocational education and training” (Backroad Connections, 2003:3). In another context, e-learning is used as a concept to support a wide range of electronic media (internet, intranets, extranets, satellite broadcasting, audio/video, interactive television and CD-ROMs) to make vocation education and training more flexible for its
customers (ANTA, 2003). For the American Society of Training and Development (ASTD), the concept of e-learning covers a wide range of applications and processes, such as web-based learning, computer-based learning, virtual classrooms and digital collaboration ", including "delivery of content via the internet, intranet / extranet (LAN / WAN), audio/video, satellite broadcasting, interactive television, CD-ROM, etc." (Horton, 2001:1).

García (2005) sees e-learning as "non-face-to-face training that uses technology platforms to increase and improve access to and time for the teaching-learning process to match the skills, needs and availability of each learner, as well as ensuring collaborative learning environments via the use of synchronous and asynchronous communication tools, and strengthening the competence-based management process as a whole".

In 2001, the European Commission (Directorate General for Education and Training) created a new definition of e-learning which defined it as ""the use of new multimedia and the internet to improve the quality of learning and increase access to resources and services, as well as boost distance exchange and collaboration ".

Analysis of this definition from the European Commission reveals that this institution sees two main purposes for this mode of teaching:

1) IMPROVE THE QUALITY OF LEARNING

Innovation and teaching materials to ensure ICT serve to improve traditional face-to-face teaching, which has been the teaching model followed for centuries. Personalised learning pathways help ensure students don’t get left behind and students are motivated by taking part in discussion forums and are equipped with tools to promote self-learning. Improved quality in education is also achieved by reaching higher learning levels, such as analysis, synthesis, problem solving and decision making. In addition, new technologies help students hone their skills in searching for, analysing and interpreting relevant information in their field of research (Bates, 2001). Hanna (2002) stresses the development physical and social as well as intellectual competences.

2) IMPROVE ACCESS TO EDUCATION AND TRAINING

Distance teaching (DT) arose to improve everyone’s access to education and training, whatever their geographical location, job, working hours, etc. e-learning is currently seen as an ideal solution - however much of an exaggeration this might seem - and experts recommend that distance-education centres should work towards total virtualisation.

Table 6. Purposes of e-learning according to the European Commission.

<table>
<thead>
<tr>
<th>IMPROVE LEARNING</th>
<th>FACILITATE THE ACCESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Didactic materials creation</td>
<td>ICT mediated distance education</td>
</tr>
<tr>
<td>Use of the materials</td>
<td>Access without geographical restrictions</td>
</tr>
<tr>
<td>Enrich face-to-face teaching</td>
<td></td>
</tr>
</tbody>
</table>
Once the pre-2005 literature had been reviewed, it was observed that there were different definitions from different sectors that stressed different aspects of the concept. A distinction can be drawn between definitions of e-learning related to the kind of learning taking place and what is being learnt, and definitions that centre on the role of technology and the infrastructure involved.

The review of literature from 2005 onwards to construct an inclusive definition started with these older definitions prepared by pioneering e-learning experts and organisations in order to see how they evolved.

The definition by Alonso et al. (2005:218) fits into this context; they define e-learning as “the use of new technologies and the internet to raise the quality of education, improve access to resources and services anywhere and at any time”. Similarly, since 2004, Aldrich defines e-learning as a wide combination of applications and processes, contents and infrastructures for the use of computers and networks to improve one or more key parts of education, including its distribution and management. More synthetically, but with the same meaning, is the definition from the Higher Education Funding Council of England (2005), used, amongst others, by Ellis, Ginns & Piggott (2009:303), who present e-learning as “learning facilitated and supported by the use of information and communication technologies”. Bates defined e-learning as “all computer- and internet-based activities that support both on-campus and distance teaching and learning” (Bates, 2008). The United States Department of Education (Doe, 2005) also put forward a definition that was accepted by several researchers, including Li & Liu (2008) and Jereb & Šmitek (2006), amongst others. This definition includes the same characteristics of e-learning as the previous definitions. In particular, according to this definition, e-learning is “a set of teaching and learning activities, basically via the internet, which make use of the learning context with new communication and resource-rich mechanisms from information technology in order to obtain a new form of learning”, i.e. the concept of e-learning is presented as a new education model, a new comprehensive teaching and learning framework”.

And then there are definitions that centre more on a specific aspect of e-learning. For example, some authors present the concept as “online access to learning from anywhere at any time” (Gilbert & Jones, 2001:67) or as “the process of extending learning or delivering learning materials to remote places through the internet, audio, video, satellite, CD-ROM, etc.” (Gilbert & Jones, 2001:68). At the core of these definitions lies the conception of provision and access, since both the ends and the means fade into the background.

A review the literature from recent years reveals more definitions geared more towards this direction. Koohang & Harman (2005) present e-learning as the provision of education (activities related to teaching, learning and knowledge) via electronic media. Similarly, Lee & Lee (2006) present the concept of e-learning as online education, defined by the provision of training at its own pace or in real time, via the internet, to a device possessed by users. Liao & Lu (2008) produced a similar definition, since according to them e-learning is education delivered via web techniques that offer people distance learning through the use of technologies and the internet. Another similar definition is provided by Liaw, Huang & Chen (2007), who focus the concept as instruction delivered via electronic media. As can be seen, these definitions see e-learning as a vehicle for accessing and providing training and education, and downplay the media and results of this delivery.

Another group of definitions emerges by considering technologies as the main component of e-learning. The definitions in this group basically
present e-learning as the use of different technological applications without giving any details of the objective or results of this use. The definitions come basically from the technology sector, since they are found in glossaries and articles by professionals working at conferences, institutes or technology companies. In this context, technology companies and institutions’ portals often contain the following kind of definitions: “e-learning is a training and education programme that uses technologies such as computers and the internet” (Educational Counselling Portal LearnNowBC, 2009); “e-learning is the use of technologies for learning and training” (e-learning portal, 2009); “e-learning is following an online course using modem, Wi-Fi or cable connection to access teaching material from a computer, mobile telephone or other devices” (Governors State University, Centre for Online Learning and Teaching, 2008). Some authors specialising in research on the use of technologies take the same line. For instance, Guri-Rosenblit (2005:469) defines e-learning as “any form of teaching/learning via ICT” (from the use of electronic media in conventional lessons to replacing these lessons by virtual classes) and Marquès (2006) presents e-learning as “learning through IT resources”.

Finally, the literature review identified a fourth group of definitions that stresses the communication and collaboration between people. It is worth noting that the representatives of this group of definitions come from several sectors and not just from the field of communication.

Bermejo (2005:141) defines e-learning as “distance education, generally of adults who use computer-based communication systems as an environment in which students and teachers communicate, exchange information and interact”. González-Videgaray (2007) presents the concept of e-learning as “learning based on information and communication technologies, with educational interactions between students and contents, students and other students, and students and instructor”. The definition given by the New Zealand Ministry of Communications and Information Technology (2008) is in a similar vein; it considers e-learning as “learning facilitated by the use of digital tools that involve forms of interactivity, which could include online interaction between learners and their instructor”.

This analysis of the findings of the literature review for the concept of e-learning shows that it is difficult to find a single definition that is widely accepted by different sectors (or even within the same sector), owing to the fact that e-learning is a new, constantly evolving term that responds to different needs in accordance with the individuals who use it and the context in which it is used. Given the range of different definitions, they need to be categorised to try and see which category is likely to be most widely accepted by the scientific community, and which, in the opinion of the experts, are the key features of the concept of e-learning for constructing an inclusive definition of the term.

To help summarise this and as a starting point for the empirical phase for this research, four main categories of definitions can be distinguished:

**TECHNOLOGY DRIVEN:**

The definitions included in this category stress the technological aspects of e-learning and either don’t mention other aspects or treat them as secondary. A representative example of this category defines e-learning as the use of technologies as a means to facilitate access to learning.

**DELIVERY SYSTEM ORIENTATED:**

The definition included in this category present e-learning mainly as a means of accessing and delivering education and training and contents (for learning, teaching, knowledge, etc.). In other words, the central aspect in this category is access rather
than the results achieved and therefore particular emphasis is given to systems for “sending information” and to “accessibility”. A characteristic example defines e-learning as a wide set of applications and processes that use the available electronic media to access education and training.

COMMUNICATION ORIENTATED:

The definitions in this category present e-learning as a tool for communication and interaction, information exchange and collaboration, pushing its technological or educational aspects into the background. Although it is true that some people think education is communication (Tiffin & Rajasingham, 1995:19), we need something more if we want to define it. An illustrative example of this category defines e-learning as the use of communication systems via computer in which certain people communicate, exchange information and interact for educational purposes.

EDUCATION DRIVEN:

The definitions in this category focus on presenting e-learning mainly as a new way of learning and teaching or as a way of improving the existing education paradigm. Garrison & Anderson (2003:7) stress that e-learning “is not the same” as what went before; it is more than simply adding technology to teaching and learning models. An example of this category defines e-learning as a system of teaching and learning that uses new multimedia and internet technologies to improve the quality of learning by facilitating access to resources and services and to interaction and cooperation.

DELPHI RESULTS

The first phase of the first questionnaire received 33 replies (32% of the initial population), a satisfactory figure bearing in mind that 15-30 carefully selected experts are enough to ensure a heterogeneous population, as in the research, whilst 5-10 experts are considered to be enough for a homogeneous population (Loo, 2002). As a result, this rule regarding size of the sample is considered to be obeyed. Furthermore, it is important to note the heterogeneity of this sample in terms of the participating experts’ geographical distribution, which spans all continents and sixteen countries.

In terms of a socio-demographic analysis of the participating experts, they are of different ages and have different experience working in the field of e-learning and have different jobs, although most work in the field of education. The following tables show the socio-demographic characteristics of the participants in the first round of the Delphi method.
### Table 7. Distribution of experts by country.

<table>
<thead>
<tr>
<th>Country</th>
<th>Experts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spain</td>
<td>7 experts</td>
</tr>
<tr>
<td>Greece</td>
<td>1 expert</td>
</tr>
<tr>
<td>France</td>
<td>1 expert</td>
</tr>
<tr>
<td>Puerto Rico</td>
<td>1 expert</td>
</tr>
<tr>
<td>Norway</td>
<td>1 expert</td>
</tr>
<tr>
<td>Switzerland</td>
<td>1 expert</td>
</tr>
<tr>
<td>United States</td>
<td>2 experts</td>
</tr>
<tr>
<td>Japan</td>
<td>1 expert</td>
</tr>
<tr>
<td>Germany</td>
<td>1 expert</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>2 experts</td>
</tr>
<tr>
<td>Canada</td>
<td>4 experts</td>
</tr>
<tr>
<td>Australia</td>
<td>1 expert</td>
</tr>
<tr>
<td>Italy</td>
<td>5 experts</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>2 experts</td>
</tr>
<tr>
<td>Brazil</td>
<td>1 expert</td>
</tr>
<tr>
<td>New Zealand</td>
<td>2 experts</td>
</tr>
</tbody>
</table>

**TOTAL: 33 EXPERTS**

In terms of gender, there was a slightly higher percentage of replies from men (58%) than from women (42%). However, this is a small difference and in general the results are satisfactory since there is a wide representation of both genders.

**Graph 1. Distribution of experts by gender.**

![Pie chart showing gender distribution](image)

- **Men:** 58%
- **Women:** 42%

In terms of the age of participants, the majority were over 55 (42%), followed by experts aged 46-50 (21%) and experts aged 51-55 (15%). The age groups with the least members were the youngest (30-35 and 41-45, at 9%, and finally the 36-40 age group, at 3%).
As far as their education was concerned, most participants had studied subjects related to the field of education (46%). However, other subjects / areas of knowledge were also represented. Top of these were psychology (15%) and engineering (12%).

Graph 3. Distribution of experts by education.
In terms of the current employment, the vast majority (85%) of participating experts work as lecturers and researchers at a university and the rest (15%) in companies or laboratories.

**Graph 4. Distribution of experts by current employment.**

![Graph 4](image)

In terms of their work experience and experience in the field of e-learning, they all said they had over ten years’ work experience and over six years’ experience in e-learning. With regard to this question, it is important to mention that not all the participants were sure about when exactly they started working in e-learning, basically because there is no single clear definition, and everyone replied by drawing on their own perception. The following tables present this data in a more schematic fashion:

**Graph 5. Distribution of participants by years of work experience.**

![Graph 5](image)
The second part of the questionnaire asked the experts to assess the four main categories of definitions of e-learning they were shown. Analysis of their assessments reveals that there is a high degree of agreement on which category is the most widely accepted. Regardless of their initial education and current work situation, the vast majority of experts (85%) replied that the category that best represented the concept of e-learning was the education-driven category: 80% of participating experts (26/33) gave top marks to this category. The category voted second more representative was the communication-orientated category and finally, without any relevant difference between them, the access-system-orientated category and the technology-orientated category. The figure below shows the results of this assessment using a 1-5 scale (1 = not very representative category; 5 = very representative category):
Following this assessment, the experts were asked to justify their assessment in order to see which factors led them to favour the category in question. The arguments with widest agreement are given below:

A) The technology-driven, access-system-orientated and communication-orientated correspond to the early years of e-learning, when the concept was still in its infancy. As a result, the education-driven category refers to a later, more recent period of the concept, which has brought about changes in teaching and learning processes.

B) This arguments leads necessarily to talking about the intrinsic characteristic of e-learning: its evolving side and its constant redefinition as a young term. This evolution is seen in the passage of a concept based initially on technology, access system and communication towards a new phase, a new, more up-to-date vision of the term: education-driven e-learning.

C) Independently presented, isolated factors such as, for example, technology, communication and access system are not enough in themselves to identify the concept of e-learning, because this concept refers both to a combination of these factors and their orientati-on towards educational objectives and new teaching practices.

D) In keeping with the previous point, all the catego-ries put forward contain aspects of e-learning, but the first three refer to isolated factors and only the fourth refers to a wider concept such as e-learning.

E) The education-driven category may include the other three categories and could therefore also be considered as the most suitable.

F) e-learning is understood basically as having educational goals and therefore the education-driven category is the most suitable.

C) At the heart of e-learning lies the educational oppor-tunity offered by the ICT rather than the ICT in and of themselves.

H) Technologies are constantly evolving and it would therefore not be sensible to define a concept in terms of its relation to the technologies used at any one given time.

Finally, the final question on the questionnaire asked the participating experts to name other key factors for the definition of e-learning that hadn’t been mentioned previously and which they thought were necessary for creating an inclusive definition of the concept. The following arguments had greatest agree-ment and were taken into account together with the assessments and previous comments to create this inclusive definition:

A) The uses of technologies for education are frequently changing and this evolution should be borne in mind when it comes to defining e-learning.

B) e-learning can be used both to promote collaborative learning and facilitate independent learning.

C) e-learning helps achieve educational goals (formal or informal).

D) e-learning promotes a new education model, a new way of learning.

There was a high degree of acceptance for the defini-tion created in the second questionnaire. The following definition emerged from the previous rounds:

e-learning is a form of teaching and learning - which may represent a part or the whole of the education model in which it is used - that makes use of electronic media and devices to facilitate access, promote evolution and improve the quality of education and training.
The experts assessed the extent to which this proposed inclusive definition represented the concept of e-learning on a scale of 1 (low) to 4 (high). The following figure shows the distribution of their assessments.

**Graph 8. Degree of representation of the proposed definition with regard to e-learning.**

It can be seen that the vast majority of participating experts accepted the definition as highly representative of the concept of e-learning (an average 3.5/4). It can therefore be used henceforth as a general definition of e-learning.

**FINDINGS OF THE FOCUS GROUPS**

In the first group, two major ideas were put forward when discussing the concept of e-learning: a widespread lack of awareness outside the university world, and when linked to training it is perceived as low-level or low-qualification learning:

**Figure 1. General ideas from the first focus group on the concept of e-learning.**

**IT IS NOT A CONCEPT EVERYONE FEELS HAPPY WITH.**

It’s not our word; we’ve made it our own. This concept still hasn’t reached the general public” (Participant 5, Information and Communication Sciences)

**SELF-LEARNING**

“By self-learning, people understand learners are alone, and you have to explain that in fact there is a space, the virtual campus, where people interact” (Participant 3, Arts and Humanities)

**DISTANCE LEARNING**

“The general public doesn’t understand the concept of e-learning and yet they do understand what is meant by distance learning, even though they confuse it with correspondence courses and see it as low-quality teaching..” (Participant 2, Psychology and Education Sciences)

**DISCREDIT / VALIDITY OF QUALIFICATION**

“e-learning has had a lot of bad press; people associate it with low-quality courses and call the validity of the qualification into question” (Participant 3, Arts and Humanities)

**ASSESSMENT DOUBT**

“The concern is how we assess. When I said there was a face-to-face test, they were happier...” (Participant 1, Economics and Business)
The second group saw many more doubts about what e-learning is and isn’t and the keys aspects that define it:

Figure 2. General ideas from the second group on the concept of e-learning.

**DISTANCE**
“I’d stress the term ‘distance’, the fact that you’re not there in person in a physical classroom” (Participant 1, Resources and Learning)
“IT’s difficult to know if the term ‘distance’ has any meaning now for defining e-learning” (Participant 4, Education Technology Office)
“e-learning is distance and it’s technology” (Participant 2, Library)

**SELF-TEACHING**
“With new technologies, people who were self-taught are now even more self-taught. Now we’ve got access to resources previously impossible to access” (Participant 5, General Services)

**TECHNOLOGY**
“I’m sure it’s technology - the ‘e’ at the start means electronic.” “Studying with any electronic device, but is going to class with a laptop actually e-learning?” (Participant 1, Learning Resources)

**EVOLUTION OF DISTANCE TEACHING**
“I’d explain e-learning as the evolution of the Open University through technologies” (Participant 6, Education Technology Office)

**NETWORK / VIRTUAL SPACE**
“It’s easier to explain it to someone who uses Facebook or a similar social network” “It means studying and learning by using the tools you use every day to interact with friends and colleagues” (Participant 1, Learning Resources)

The third group identified the need to separate the explanation in terms of two different areas and stress different aspects in each of them: in a more informal setting, the focus is on distance and the fact that there is no physical classroom whereas in an academic setting, interaction and technology become key factors:

Figure 3. General ideas from the third focus group on the concept of e-learning.

**IN AN INFORMAL SETTING, THEY WOULD STRESS...**

**STUDYING ON THE INTERNET**
“It’s the simplest and easiest way to explain e-learning to the public”

**VIRTUAL campus**
“The concept of the virtual campus is very important and sets it apart from other distance models”

**DISTANCE**
“I work at a university where we have distance students who use the internet”

**TECHNOLOGY PLATFORM**
“e-learning has an integrated system within a technology platform, ie not only uploaded contents but also more things”

**THERE IS NO PHYSICAL CLASSROOM, NO TIMETABLE**
“Everyone studies when they want and when they can...”

**DIFFERENT MEDIUM**
“e-learning represents the same thing as on-site universities; the only difference is the medium used”
The fourth group also revealed the need to stress different factors depending on the field where the concept is being promoted. In an informal setting, more importance is given to different aspects in contrast with an more specialised educational setting or with an audience more familiar with the concept:

**Figure 4. General ideas from the fourth focus group on the concept of e-learning.**

**EDUCATION PROCESS**
"Most people have been through an education process... Well, e-learning is just that - an education process" (Participant 6, Innovation Open Office)

**USING TECHNOLOGY**
"Technology is marching onwards at an incredible pace. Just as you can download film, music, etc., you can also learn things" (Participant 3, Education Technology Office)

**INTERNET**
"A word that has gone further and further and which everyone is familiar with" (Participant 2, Education Technology Office)

**MORE THAN MACHINES, THERE ARE PEOPLE BEHIND IT**
"The big question is: who is behind it? When people talk about technology, they make out there aren’t any people involved, and that’s not the case!" (Participant 3, Arts and Humanities)

**TWO-WAY**
"In contrast to an on-site university, institutions that use e-learning work more in groups, so there is a less of a one-way relationship" (Participant 2, Education Technology Office)

**MORE INNOVATION**
"There's a lot of excitement with technology; whatever you haven't managed to do with face-to-face learning, you can try with e-learning" (Participant 4, Information Technology, Multimedia and Telecommunications)

**SOCIAL ASPECT**
"Learning between peers" (Participant 5, Information Technology, Multimedia and Telecommunications)

**IT’S MORE THAN SIMPLY MOVING FROM ON-CAMPUS TO A COMPUTER**
"You can’t reproduce an on-site university on a computer; it would be far more difficult and complicated. That’s why people are looking for ways to do this and the UOC is doing it" (Participant 6, Innovation Open Office)
Based on these general ideas on e-learning, we can distinguish two main areas where this concept is applied. On the one hand, the informal sphere, where e-learning appears as an unfamiliar issue that isn’t very well integrated into experience, and on the other hand, the academic sphere, where it appears as constantly evolving and changing factor. The following figure presents two lines of the debate more schematically:

**Figure 5. Main areas of the concept of e-learning.**

**Informal Setting**
- Unfamiliar concept / not very well integrated

**Educational Setting**
- An evolving concept / constantly changing

**Linked to Traditional, Disparaged Distance Learning**
- A little-known concept and linked to distance education
- The link to self-teaching and self-learning raises doubts and discredits it somewhat

**Linked to the Network / Technology**
- Uses technology as a learning tool
- Things are constantly evolving in this field and the evolution of this concept is being worked on
The participants in the four focus groups attributed several characteristics to the concept of e-learning. The following table shows the attributes for the concept of e-learning in each group:

Table 8. Distribution of attributes linked to e-learning in the four focus groups.

<table>
<thead>
<tr>
<th>GROUP 1</th>
<th>GROUP 2</th>
<th>GROUP 3</th>
<th>GROUP 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
<td>Virtual space</td>
<td>Learning</td>
<td>Accessibility</td>
</tr>
<tr>
<td>Internet</td>
<td>Internet</td>
<td>Online</td>
<td>Interaction:</td>
</tr>
<tr>
<td>Asynchronous</td>
<td>Teacher</td>
<td>Virtual campus</td>
<td>Feedback</td>
</tr>
<tr>
<td>Communication</td>
<td>Student</td>
<td>Education</td>
<td>Resource</td>
</tr>
<tr>
<td>Learning</td>
<td>Electronic device</td>
<td>Distance education</td>
<td>Objectives</td>
</tr>
<tr>
<td>Education</td>
<td>Connectivity</td>
<td>Distance</td>
<td>Teach</td>
</tr>
<tr>
<td>Not face-to-face</td>
<td>Mentor</td>
<td>Learning</td>
<td>Learn</td>
</tr>
<tr>
<td>Connectivity</td>
<td>Information</td>
<td>Independence</td>
<td>Transparent</td>
</tr>
<tr>
<td>Community</td>
<td>Distance</td>
<td>Mobility</td>
<td>Accompanied</td>
</tr>
<tr>
<td>Flexibility</td>
<td>Technology</td>
<td>Accessibility</td>
<td>Technology</td>
</tr>
<tr>
<td>Co-creation</td>
<td>Innovation</td>
<td>Self-learning</td>
<td>Evaluation</td>
</tr>
<tr>
<td>Training</td>
<td>Productivity</td>
<td>Support</td>
<td>Self-learning</td>
</tr>
<tr>
<td>Interaction:</td>
<td>Learning</td>
<td>Collaborative</td>
<td>Design</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Independence</td>
<td>Environment</td>
<td>Teaching</td>
</tr>
<tr>
<td>Lifelong learning</td>
<td>Mobility</td>
<td>Teacher / tutor</td>
<td>Student</td>
</tr>
<tr>
<td>Participatory</td>
<td>Accessibility</td>
<td>Community</td>
<td>Community</td>
</tr>
<tr>
<td>Independence</td>
<td>Education</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Once all the previous attributes had been analysed, four key questions were identified whose replies were needed to construct the concept of e-learning:

A) What is it? (Nature)

B) What channel does it use? (Media)

C) What is its benefit? (Social contribution)

D) What characterises this process?

These four questions were used to prepare the final proposed inclusive definition of the concept of e-learning, together with the results of the Delphi technique. The replies to these questions with greatest consensus appear in the following figure:

Figure 6. Replies with the greatest consensus on e-learning in the attributes exercise.
ANALYSIS OF THE THEORETICAL OPINIONS AND INDIVIDUAL DEFINITIONS OF THE CONCEPT

During the four focus groups, participants put forward several individual definitions of the concept of e-learning. Following a debate on these definitions, each group chose, by consensus, a definition considered to be the most suitable for e-learning. The following table presents the main definitions that featured in the four focus groups.

Table 9. The agreed definitions of e-learning in the focus groups.

<table>
<thead>
<tr>
<th>Group</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>refers to all educational processes that take place thanks to and via information and communication technologies</td>
</tr>
<tr>
<td>Group 2</td>
<td>refers to a set of teaching and learning processes delivered via ICT in which learners are active subjects</td>
</tr>
<tr>
<td>Group 3</td>
<td>refers to a learning and teaching process mediated by ICT that facilitates interaction and flexibility between all those involved in the process</td>
</tr>
<tr>
<td>Group 4</td>
<td>refers to learning promoted through ICT (to ensure students and teachers achieve set goals)</td>
</tr>
</tbody>
</table>

Participants in the focus groups justified the agreed definitions by analysing a series of key aspects that should be included in each definition.

These key aspects are presented in the following figures:

Figure 7. Analysis of the aspects of the definitions agreed in the focus groups.
ASSESSMENT OF THE AGREED DEFINITIONS

After analysing the agreed definitions, the participants gave their assessment by giving possible strengths or weaknesses:

A) With regard to the first definition, they said that e-learning is an education process that encompasses both teaching and learning, and is facilitated and promoted by information and communication technologies. In this context, the network which is built up connects educators and students, who can interact fairly flexibly. Although the concept of interaction is included in the ICT, it should be mentioned explicitly because it adds significant value to the definition.

B) With regard to the second definition, the participants said that it is made up of two information categories. The main information, including the concepts “set of processes”, “teaching and learning”, “ICT” and “active subject”, which can be applied to any educational institution; and the complementary information, including the concepts “defining methodology”, “resources”, “asynchronous” and “teacher’s role”, to obtain a more specific definition that reflects the Open University of Catalonia’s approach.

C) With regard to the third definition, the participants said that the four basic pillars for completing the definition of e-learning are: a) the process; b) teaching and learning; c) use of ICT; and d) interaction and flexibility. Once the agreed definition had been analysed, participants agreed with the main information, which said e-learning is a teaching and learning process that takes place via ICT and offers the benefits of flexibility and interaction.

D) Finally, the participants in the fourth focus group acknowledged that it is hard to reach consensus, because representing the essence of e-learning requires introducing more concepts into the definition, such as the concept of collaboration and the role of students and teachers. It was agreed to keep a shorter definition, which covers a wider concept, but with the risk of confusing e-learning with self-learning models.
Conclusions

The initial perception of the definition of e-learning was corroborated following the literature review carried out during the first few months of the project: there is a significant range of different focuses in the different definitions. This range of different terms and different approaches is based mainly in the fact that e-learning is a new concept. The literature review helped distinguish between those definitions of e-learning related to the kind of learning taking place and what is being learnt, and those that centre on the role of technology and infrastructure used.

In addition, by examining the distribution of the definitions in the four categories we created, we were able to see that the authors with a more technological profile (engineers, technologists, practitioners) geared their definitions towards technology or the access system, while authors with an educational profile focused their definitions towards a new education paradigm and communication. Finally, we noted similar trends in terms of each author’s geographical location. Most of the definitions provided by experts from Asia saw e-learning as mainly a system for accessing knowledge and learning, in contrast to authors from other continents, who tended to give equal weight to the four categories put forward.

By looking over the range of different definitions of e-learning, we reached the conclusion that an inclusive definition of the concept accepted by the majority of the scientific community would greatly facilitate research and understanding between the different sectors of e-learning. In addition, a wide definition of this concept could help establish a new framework of reference for e-learning that would boost research activity, since everyone would share the same starting point.

The definition reached in this research was agreed through the consensus of e-learning experts and professionals from all over the world. It is, nonetheless, only a starting point, given the dynamic nature of the concept in question. Research will continue in the line of identifying models for applying e-learning, its components, characteristics and potential benefits and disadvantages.

**INCLUSIVE DEFINITION OF E-LEARNING**

A form of teaching and learning - which may represent a part or the whole of the education model in which it is used - that makes use of electronic media and devices to facilitate access, promote evolution and improve the quality of education and training.


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