Internet and Higher Education 14 (2011) 129–135

Contents lists available at ScienceDirect

Internet and Higher Education

e-Learning, online learning, and distance learning environments: Are they the same?

Joi L. Moore [a], Camille Dickson-Deane [b,*], Krista Galyen [b]

[a] School of Information Science and Learning Technologies, University of Missouri, 303 Townsend Hall, Columbia, MO 65211, USA
[b] School of Information Science and Learning Technologies, University of Missouri, 111 London Hall, Columbia, MO 65211, USA

ARTICLE INFO

Article history:
Accepted 15 October 2010

Keywords:
Distance learning
Online learning
e-Learning
Design

ABSTRACT

It is not uncommon that researchers face difficulties when performing meaningful cross-study comparisons for research. Research associated with the distance learning realm can be even more difficult to use as there are different environments with a variety of characteristics. We implemented a mixed-method analysis of research articles to find out how they define the learning environment. In addition, we surveyed 43 persons and discovered that there was inconsistent use of terminology for different types of delivery modes. The results reveal that there are different expectations and perceptions of learning environment labels: distance learning, e-Learning, and online learning.

1. Introduction

Distance education has a history that spans almost two centuries (Spector, Merrill, Merrienboer, & Driscoll, 2008), and this time period represents significant changes in how learning occurs and is communicated. From basic correspondence through postal service to the wide variety of tools available through the Internet, society has embraced new forms of communication through the years. One such form, online learning, is known to have a history of access beginning in the 1980's whereas another term, referred to as e-Learning, does not have its origins fully disclosed (Harasim, 2000). As researchers and designers utilized these emerging technologies, we find that a relaxed use of the terminology makes it difficult to design and evaluate similar learning environments without understanding the specific characteristics (Phipps & Merisotis, 1999). The design of different types of learning environments can depend on the learning objective, target audience, access (physical, virtual and/or both), and type of content. It is important to know how the learning environment is used, and the influences of the tools and techniques that distinguish the differences in learning outcomes as the technology evolves.

2. Literature definitions

As learning technology and its associated fields continue to evolve, practitioners and researchers have yet to agree on common definitions and terminologies (Lowenthal & Wilson, 2010; Volery & Lord, 2000). As a result, it is difficult for researchers to perform meaningful cross-study comparisons and build on the outcomes from the previous studies. This contributes to conflicting findings about distance learning, e-Learning, and online learning environments. In addition, terms are often interchanged without meaningful definitions. As an initial step, we reviewed the relevant literature to determine how these learning environments were defined.

2.1. Distance learning

Distance education is the most renowned descriptor used when referencing distance learning. It often describes the effort of providing access to learning for those who are geographically distant. During the last two decades, the relevant literature shows that various authors and researchers use inconsistent definitions of distance education and distance learning. As computers became involved in the delivery of education, a proposed definition identified the delivery of instructional materials, using both print and electronic media (Moore, 1990). The instructional delivery included an instructor who was physically located in a different place from the learner, as well as possibly providing the instruction at disparate times. Dede (1996, p. 1) elaborated on the definition by including a comparison of the pedagogical methods used in traditional environments and referring to the instruction as “teaching by telling.” The definition also stated that distance education uses emerging media and associated

* Corresponding author.
E-mail addresses: moorejoi@missouri.edu (J.L. Moore), cdickson-deane@mail.mizzou.edu (C. Dickson-Deane), kdgrz9@mail.mizzou.edu (K. Galyen).

1096-7516/$ – see front matter © 2010 Elsevier Inc. All rights reserved.
doi:10.1016/j.iheduc.2010.10.001

experiences to produce distributed learning opportunities. Both these definitions recognized the changes that were apparent in the field and attributed them to the new technologies that were being made available. Keegan (1996) went further by suggesting that the term distance education is an "umbrella" term, and as such, has terms like correspondence education or correspondence study that may have once been synonymously used, being clearly identified as a potential offspring of distance education.

King, Young, Drivere-Richmond, and Schrader (2001) do not support the interchangeable use of the terms distance learning and distance education, because both terms do differ. Distance learning is referenced more as ability, whereas distance education is an activity within the ability [of learning at a distance]; though, both definitions are still limited by the differences in time and place (Volery & Lord, 2000). As new technologies become apparent, learning seemed to be the focus of all types of instruction, and the term distance learning once again was used to focus on its limitations associated with "distance", i.e. time and place (Guilar & Loring, 2008; Newby, Stepich, Lehman, & Russell, 2000). The term then evolved to describe other forms of learning, e.g. online learning, e-Learning, technology, mediated learning, online collaborative learning, virtual learning, web-based learning, etc. (Conrad, 2006). Thus, the commonalities found in all the definitions is that some form of instruction occurs between two parties (a learner and an instructor), it is held at different times and/or places, and uses varying forms of instructional materials.

2.2. e-Learning

The origins of the term e-Learning is not certain, although it is suggested that the term most likely originated during the 1980's, within the similar time frame of another delivery mode *online learning*. While some authors explicitly define e-Learning, others imply a specific definition or view of e-Learning in their article. These definitions materialize, some through conflicting views of other definitions, and some just by simply comparing defining characteristics with other existing terms. In particular, Ellis (2004) disagrees with authors like Nichols (2003) who define e-Learning as strictly being accessible using technological tools that are either web-based, web-distributed, or web-capable. The belief that e-Learning not only covers content and instructional methods delivered via CD-ROM, the Internet or an Intranet (Benson et al., 2002; Clark, 2002) but also includes audio- and videotape, satellite broadcast and interactive TV is the one held by Ellis. Although technological characteristics are included in the definition of the term, Tavangarian, Leypold, Nölting, Röser, and Voigt (2004) as well as Triacca, Bolchini, Botturi, and Inversini (2004) felt that the technology being used was insufficient as a descriptor. Tavangarian et al. (2004) included the constructivist theoretical model as a framework for their definition by stating that e-Learning is not only procedural but also shows some transformation of an individual's experience into the individual's knowlege through the knowledge construction process. Both Ellis (2004) and Triacca et al. (2004) believed that some level of interactivity needs to be included to make the definion truly applicable in describing the learning experience, even though Triacca et al. (2004) added that e-Learning was a type of *online learning*.

As there is still the main struggle as to what technologies should be used so that the term can be referenced, some authors will provide either no clear definition or a very vague reference to other terms such as *online course/learning*, *web-based learning*, *web-based training*, *learning objects* or *distance learning* believing that the term can be used synonymously (Dringus & Cohen, 2005; Khan, 2001; Triacca et al., 2004; Wagner, 2001). What is abundantly obvious is that there is some uncertainty as to what exactly are the characterisitcs of the term, but what is clear is that all forms of e-Learning, whether they be as applications, programs, objects, websites, etc., can eventually provide a learning opportunity for individuals.

2.3. Online learning

Online learning can be the most difficult of all three to define. Some prefer to distinguish the variance by describing online learning as "wholly" online learning (Oblinger & Oblinger, 2005), whereas others simply reference the technology medium or context with which it is used (Lowenthal, Wilson, & Parrish, 2009). Others display direct relationships between previously described modes and online learning by stating that one uses the technology used in the other (Rekkedal et al., 2003; Volery & Lord, 2000). Online learning is described by most authors as access to learning experiences via the use of some technology (Benson, 2002; Carliner, 2004; Conrad, 2002). Both Benson (2002) and Conrad (2002) identify online learning as a more recent version of distance learning which improves access to educational opportunities for learners described as both nontraditional and disenfranchised. Other authors discuss not only the accessibility of online learning but also its connectivity, flexibility and ability to promote varied interactions (Ally, 2004; Hiltz & Turoff, 2005; Oblinger & Oblinger, 2005). Hiltz and Turoff (2005) in particular not only elude to online learnings' relationship with distance learning and traditional delivery systems but then, like Benson (2002) makes a clear statement that online learning is a newer version or, and improved version of distance learning. These authors, like many, beleive that there is a relationship between distance education or learning and online learning but appear unsure in their own descripive narratives.

3. Different learning environment characteristics

The previous list of definitions illustrates several problems, two of which are 1) terms such as online, web-based, and e-Learning are interchanged when describing the learning environment, and 2) some definitions and evaluation instruments discuss and use *courses* (Guilar & Loring, 2008) or *programs* (Clark, 2002) while others are based on *learning objects* (Nesbit, Belfer, & Leacock, 2003; Tavangarian et al., 2004). Not only does the second issue lead to problems related to scope and the instructional characteristics that will be embedded based on the type of learning environment, it also highlights the terms used to define an instance of such learning environments. To illustrate, a *course* can and has been seen as a "program" of instruction, whereas *a program* is referred to a pluralized version of many courses (Clark, 2002; Guilar & Loring, 2008). Though used interchangeably by some, there are many courses in a program but never the reverse; many programs in a course. To further demonstrate the uncertainty, the learning environment can be identified as a *Learning Management System* (LMS), a *Course Management System* (CMS), a *Virtual Learning Environment* (VLE) or even a *Knowledge Management System* (KMS) (Khan, 2001; Nichols, 2003; Spector, 2007; Wilen-Daugenti, 2009). As much as the terms are used synonymously, some see each term differently.

Gagné, Wager, Golas, and Keller (2005) define a CMS as having tools associated with the development and delivery of courses which are placed onto the Internet, further defined as a *Collaborative Learning Environment* (2005, p. 219), but the authors define an LMS as more of management system for the delivery of online learning (2005, p. 339). Nichols (2003) agrees that the LMS is mainly used for online courses and components, yet reverts to the use of the term e-Learning to identify the tools used to deliver the learning experience. Two authors refer to some of the terms synonymously. Wilen-Daugenti (2009) interchanges the terms CMS, LMS and VLE, whereas Wagner (2001) used LMS, KMS and *Knowledge Content Distributors* (KCD), a term stated as the predecessor of all, as the same. Within the last ten years, there seems to be more congruence in the use of the

terms defining learning environments where the definitions all use words, which suggest that learning is occurring in a specific web-based area. One such term is an Online Learning Environment (OLE) and it can be assumed that the above terms can all be referenced by this term (Asunka, 2008; Barnard-Brak, Lan, & Paton, 2010; Khan, 2001; Rhode, 2009; Zhang & Kenny, 2010).

Additional learning environment terms are either referring to tools that can be used within the environment or the type of learning that will be delivered within the system. Learning objects is a term that represents the management of the environment. There is some agreement that learning objects are digital resources that can be reused to assist with learning (Nichols, 2003; Spector, 2007). Although learning object is used synonymously with content object, knowledge object, and reusable information object, it is, in this form, the most commonly used term for this definition (Wagner, 2001).

Another core characteristic of learning environments are the design methodology. Courses, programs, and learning objects, which are available in OLEs, can either be self-paced, self-directed or instructor-led. The most common form of distance-related course-design in traditional educational environments, like universities, is instructor-led described as an environment where an instructor guides learners through the required instruction content. In this type of learning environment, the instructor controls the instructional sequencing and pacing and all learners participate in the same learning activities at specified times (Rhode, 2009). This learning environment is different from learning that occurs in a self-paced environment. Self-paced is a descriptor used for learning environments that enable individuals to study online in their own time and at their own pace, from their own location. This mode of learning provides the learner more autonomy to proceed at their own pace, while their progress is monitored to assess their achievement (Rhode, 2009; Spector et al., 2008). When the term self-directed is used, it is often in reference to all types of distance learning. It is defined by Garrison (2003) as a mode of learning which is learner-controlled; where the learner is more in charge of their own learning and they monitor and manage the cognitive and contextual aspects of their learning. Self-directed can also be perceived as independent learning, which has no learner to learner interactions.

4. Method

4.1. Investigative site and participants

During a 2009 educational technology conference, the authors used a poster session to begin the conversation about terminology discrepancies. They also used this session to gather data. This strategy allowed for better access to conference attendees that have some type of practioner or research-based relationship to the different types of learning environments. Forty-three conference participants from at least four continents (see Fig. 1) completed the nine-question paper survey.

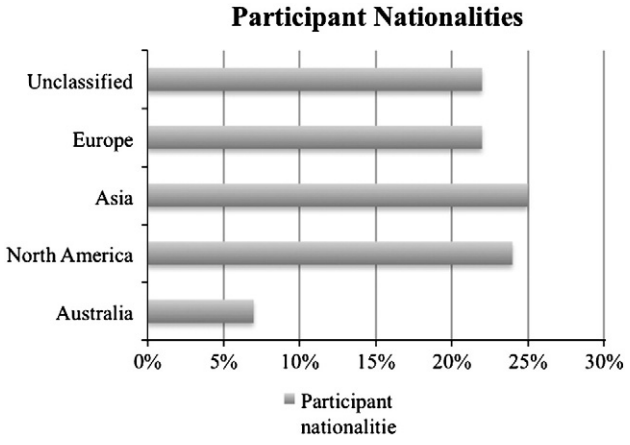

Fig. 1. Demographic information of respondents. This bar chart provides the demographics by continent of the respondents in the study.

4.2. The instrument

The survey included one open-ended question and eight questions each with a number of choices to select via checkboxes. The survey began with the open-ended question that asked respondents to identify the differences between distance learning, e-Learning, and online learning. The second question related to respondents' role(s) within in the learning environment. The third question focused on all of the learning environment characteristics that helped to define the type of environment where the participation occurred. The last four questions were scenario-based and required the respondents to select the best label to describe that particular type of environment. The label choices included learning environment types and possible instructional resources.

4.3. Data collection

Participants were approached in an effort to engage discussion in the topic and a small incentive was used to gain more interests in the topic. Those who seemed interested in the initial discussion were asked to continue their views by completing the survey. The average time to complete the survey was approximately ten minutes. Once all the surveys were completed, the data was collated, coded and analyzed using mixed methods.

4.4. Data analysis

The data from the surveys were entered into a MS Excel spreadsheet and was collated. Question one was analyzed using qualitative methods; the responses were initially analyzed using open codes and then with axial codes to categorize and synthesize emerging themes (Creswell, 2007). Six themes emerged: No Difference, Difference, Hierarchical Relationsip, Access, Interaction, Media Type, and Correspondence. The relationship among the themes is reflected in Fig. 2. General statistics were performed on the remaining survey questions. For most questions, more than one choice could be selected; thus total frequencies will be more than 43 responses.

5. Findings

5.1. Terminology perceptions

The first question in the survey asked: "Is there a difference between distance learning, e-Learning, and online learning? If so, please explain". This seemed to be an intriguing question to many of the participants, as they tried to explain the differences through words or diagrams. Table 1 provides an overview of the different description types, and how they were categorized into themes of "No Difference", "Hierarchical Organization", "Media Type", "Access Type", "Correspondence" and "Interaction Type." Hierarchical Organization was then further defined into a *parent* relationship and *child* relationship where the parent relationship denoted a term that identified as the "broadest" label and the child relationship was a sub-level, or representative of a subset of a larger description of the environment.

The feedback for the survey produced some interesting points. One participant emphasized that the *Distance Learning* label was an "old fashioned" idea that is rarely used, whereas another person mentioned "what difference does it make." The latter comment was an interesting question that led the authors back to the original

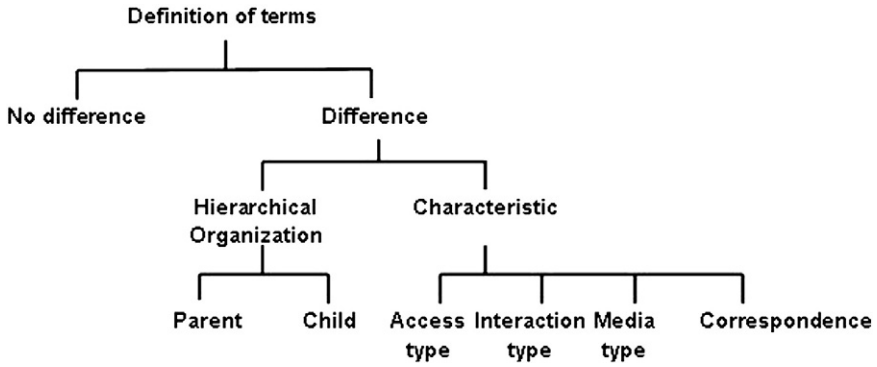

Fig. 2. Emerging themes for defining terms. This provides an illustration of how themes were developed and retained when the data was analyzed.

purpose of the survey: being able to specifically understand and expect certain characteristics of the learning environment based on the label that is being used. This was found to be impossible without the details of the delivery system and how learners access the environment.

5.2. Participant demographics and usage

The respondents represented at least twelve different countries. Three participants were from Australia, eleven from Asia, ten from Europe, eleven from North America and ten were unclassified. The respondents were asked to identify whether they have participated in distance, online, or e-Learning. Twenty-four respondents (i.e., 56%) indicated participation in all learning envirnonments (see Table 2). More participants from Europe, Asia, and Australia selected distance learning events than the other continents. There were no significant differences in the country of origin of those who participated in online and e-Learning events. Those that originated from the continents of Europe, Australia, and Asia selected twice as many forms of the learning environments compared to those originating from the continent of North America.

Table 1
Terminology differences.

Category	Type	Description	Frequency
No difference	Distance learning, e-Learning, online learning	The same	6
	Distance learning, online learning	The same	3
Hierarchy organization	Distance learning	Broadest term	4
	e-Learning	Sub-level of distance learning	4
	e-Learning	Broadest term	1
	Online learning	Sub-level of distance learning	3
	Online learning	Sub-level of e-Learning	3
Media type	Distance learning	Postal mail, paper-based	2
	e-Learning	Electronic/multimedia device	12
	e-Learning	Computer or Internet	2
	Online learning	Web tools/Internet	14
Access type	Distance learning	Remote access to a variety of media	3
	Distance learning	No face-to-face	8
	e-Learning	Remote or non-remote (online)	2
	e-Learning	Blended with face-to-face	2
	Online learning	On campus and off-campus	1
	Online learning	Partial online/hybrid	1
	Online learning	Totally online	1
Correspondence	Distance learning	Online correspondence/ teleconference	2
	e-Learning	Must have correspondence/ interaction	1
	Online learning	Must have correspondence/ interaction	1
Interaction	e-Learning	Synchronous and asynchronous	1
	e-Learning, online learning	Depends on the type of interaction	1

5.3. Roles in the learning environment

The participation roles in the learning environments are shown in Fig. 3. The majority was either a “student” (31 responses) or “instructor” (30). Nine respondents selected all of the roles (i.e., student, instructor/facilitator, designer, and evaluator). There were two people who did not select a role: in the “other” field, the first noted “researcher” and the second stated “teacher.”

5.4. Learning environment characteristics and tools

The respondent's experience with instructional characteristics and tools within the learning environment were also collected (see Fig. 4). For the instructional characteristics, the respondent selections were “assignments” (33), “other students” (32), “modules” (29), “deadlines” (31), and “instructor/facilitator” (33) in their learning environment. Twenty-one of the respondents stated their learning environment had all of the instructional characteristics mentioned above.

In regards to technology tools/techniques in the learning environment, the highest reported tools were discussion boards and email (See Fig. 5). Only one person stated that the environment they used had all of the technology tools/techniques that were listed.

Table 2
Participation in learning environments.

Types of environments	Frequency of recorded participation in stated environment(s)
Distance learning	1
e-Learning	6
Online learning	4
Distance learning and e-Learning	0
Distance learning and online learning	2
e-Learning and online learning	6
All learning environments	24

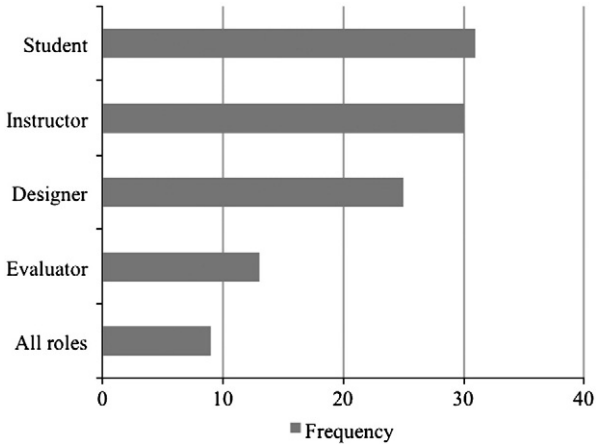

Fig. 3. Role in the learning environments. This bar chart illustrates the number of respondents who stated which role they played in all of the learning environments.

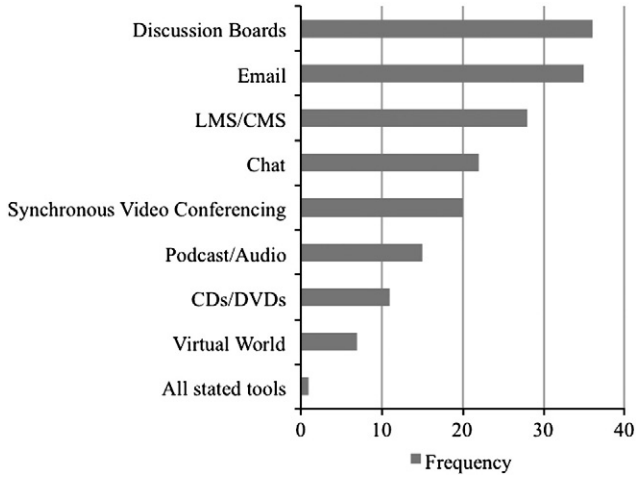

Fig. 5. Technology tools/techniques in learning environment. This bar chart illustrates the different technology tools and/or techniques of learning environments and the number of respondents who reported that they participated in environments with such.

5.5. Classification of environments based on scenarios

For the final survey questions, respondents were provided learning environment scenarios (see Table 3), and were to select the most relevant term from a list of nine choices. Fig. 6 demonstrates the variances in responses for the four top choices that were selected by the respondents. For Scenario 1, approximately 57% of respondents identified this as *online* learning, and then 19% selected both *e-Learning* and *online*. Scenario 2 is very similar to Scenario 1, but included face-to-face interactions between the students and the instructor. The majority (51%) selected *blended* environment while 22% identified it as online learning. Scenario 3 demonstrated less agreement with 43% choosing *e-Learning* environment, and 14% each for *online* and *other*. The remaining 33% was scattered among five other choices. Scenario 4 does not include interactions among students or with the instructor. Thirty-two percent selected *online* in comparison to 19% for *e-Learning*. There were 6 respondents who chose more than three terms for each scenario, because they could not identify one item that was the most relevant. Thus, these survey responses were not included in the above stated analysis.

6. Discussion

Overall, there seemed to be some agreement that there was a difference between each of the terms and that this difference was somehow attributed to the characteristics of each of the environments. There also seemed to be a difference in how each term was used from continent to continent which could also imply that there was a difference in usage from country to country. There were some respondents from the continent of Asia who grouped "blended learning" and "e-learning" as the same. This created a situation whereby the authors did not think that introducing the term blended learning would have added to the challenges in finding clear delineations for each of the terms; this seemingly added to the lack of consistency found in the use of the terms.

Not only were there inconsistencies with terms and their meanings, but also with the spelling of the term used to represent electronic learning, i.e. e-learning, e-Learning, E-Learning, and elearning. We did not notice a trend in regards to how it is spelled based on country or discipline, but assume that authors will adopt certain spellings based on what seems the most popular during the writing of an article. A good example of inconsistencies is the difference in how the term is spelled in journal titles, such as *eLearn Magazine*, *International Journal on E-Learning*, and *Electronic Journal of e-Learning*. Similar to how email dropped the use of "e-mail", we expect the same could happen with e-Learning.

As for the myriad of instructional characteristics that can be found in any learning environment, it can be difficult to compare research results when authors assume that the reader will know the

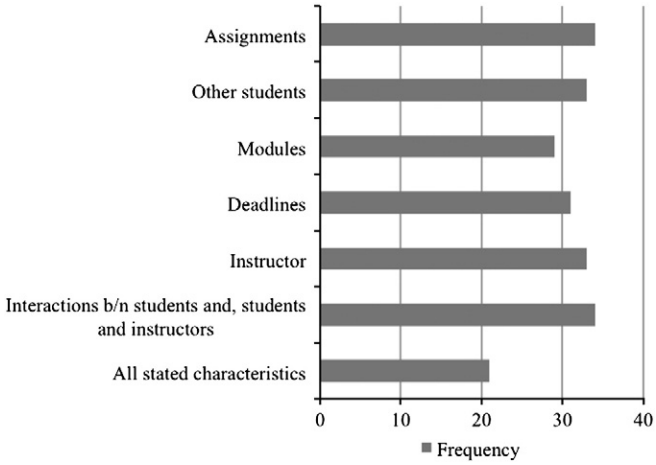

Fig. 4. Characteristics of learning environment. This bar chart illustrates the different characteristics of learning environments and the number of respondents who reported that they participated in environments with such characteristics.

Table 3
Survey scenario descriptions.

No.	Scenario description
1	You are in a learning experience where the material is provided by an instructor in a course management system (e.g. Blackboard, Sakai, etc.) which must be accessed via the Internet. You can interact with the instructor and your fellow class mates via email and/or chat forum. There is a discussion board and you never have official meetings with the instructor or your class mates.
2	You are in a learning experience where the material is provided by an instructor in a course management system (e.g. Blackboard, Sakai, etc.) which must be accessed via the Internet. You can interact with the instructor and your fellow class mates via email, discussion board, or chat forum along with face-to-face meetings.
3	You are in a learning experience where the material is provided on CDs via postal mail. You can interact with the instructor via email or telephone, but not other students.
4	You are in a learning experience where the material is provided in a course management system (e.g. Blackboard, Sakai, etc.) which must be accessed via the Internet. You cannot interact with an instructor or class mates.

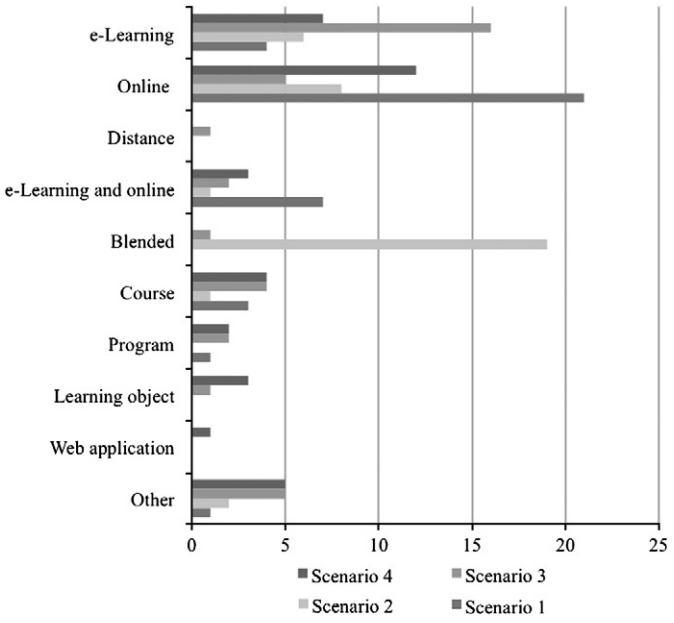

Fig. 6. Scenario responses. This bar chart illustrates the number of respondents who related a particular scenario to either a learning environment or a learning resource.

characteristics based on the descriptive term that is used for the learning environment. All learning environments are not alike, even within a traditional face-to-face setting; thus it is not surprising to discover disagreement about the meaning of distance learning, e-Learning, and online learning. However, a description of the instructional characteristics is essential for illustrating the important components of the learning environment, more so than the term that is used.

The findings led to additional questions, some of which could not be answered because of the survey design. For future studies, data should be collected which clearly identifies more demographics, such as the nationality of the respondent and whether the respondent worked in academia or in the corporate world. This may determine how the terms are used and if there are differences between industry usage and academic usage which may further contribute to the disparities.

Another concept that should be explored is as technology and its use, evolves, so would the terms [by definition and use]. For example, most participants seem to be more familiar with the terms e-Learning and online learning whereas distance learning recorded the least amount of participation from the participants. This discovery could be explained by having the age of the respondents included in the instrument, thus adding to the interpretation of the data.

7. Conclusions

The definitions found in various articles mirror the conflicting responses provided by the respondents in this study. The lack of consistency in terminology inevitably affects not only the researchers who would like to build upon the findings, but also impacts designers who are creating similar types of environments. Terminology also poses a problem when the specific context of the learning environment is not described in sufficient detail or when its identification is not very prominent in both the discussion of the methods and the other sections of the paper. This not only impacts the evaluation of such learning experiences but also the future of successfully delivered distance learning events. The findings show great differences in the meaning of foundational terms that are used in the field, but also provide implications internationally for the referencing, sharing, and the collaboration of results detailed in varying research studies.

References

Ally, M. (2004). Foundations of educational theory for online learning. In Terry (Ed.), *The theory and practice of online learning* (pp. 3—31). (2nd ed). Athabasca, AB: Athabasca University. Retrieved from http://desarrollo.uces.edu.ar:8180/dspace/bitstream/123456789/586/1/Theory%20and%20Practice%20of%20online%20learning.pdf#page=227

Asunka, S. (2008). Online learning in higher education in Sub-Saharan Africa: Ghanaian University students' experiences and perceptions.*The International Review of Research in Open and Distance Learning*, *9*(3). Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/586/1130

Barnard-Brak, L., Lan, W. Y., & Paton, V. O. (2010). Profiles in self-regulated learning in the online learning environment.*The International Review of Research in Open and Distance Learning*, *11*(1). Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/769/1480

Benson, A. (2002). Using online learning to meet workforce demand: A case study of stakeholder influence. *Quarterly Review of Distance Education*, *3*(4), 443—452.

Benson, L., Elliot, D., Grant, M., Holschuh, D., Kim, B., Kim, H., et al. (2002). Usability and instructional design heuristics for e-Learning evaluation. In P., & S. (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2002* (pp. 1615—1621).Presented at the World Conference on Educational Multimedia, Hypermedia and Telecommunications (EDMEDIA) Chesapeake, VA: AACE.

Carliner, S. (2004). *An overview of online learning* (2nd ed.). Armherst, MA: Human Resource Development Press.

Clark, R. (2002). Six principles of effective e-Learning: What works and why. *The e-Learning Developer's Journal*, 1—10.

Conrad, D. (2002). Deep in the hearts of learners: Insights into the nature of online community. *Journal of Distance Education*, *17*(1), 1—19.

Conrad, D. (2006). E-Learning and social change: An apparent contradiction. In In. M. Beaudoin (Ed.), *Perspectives on higher education in the digital age* (pp. 21—33). New York: Nova Science Publishers.

Creswell, J. W. (2007). *Qualitative inquiry & research design* (2nd ed.). Thousand Oaks, CA: Sage Publications.

Dede, C. (1996). The evolution of distance education: Emerging technologies and distributed learning. *The American Journal of Distance Education*, *10*(2), 4—36.

Dringus, L. P., & Cohen, M. S. (2005). An adaptable usability heuristic checklist for online courses. *35th Annual FIE '05. Presented at the Frontiers in Education*.

Ellis, R. (2004). Down with boring e-learning! Interview with e-learning guru Dr. Michael W. Allen. Learning circuits. Retrieved from. http://www.astd.org/LC/2004/0704_allen.htm

Gagné, R. M., Wager, W. W., Golas, K. C., & Keller, J. M. (2005). *Principles of instructional design* (5th ed.). Belmont, CA: Thomson Wadsworth.

Garrison, D. R. (2003). Cognitive presence for effective asynchronous online learning: The role of reflective inquiry, self-direction and metacognition. In J., & J. C. (Eds.), *Elements of quality online education: Practice and direction* (pp. 47—58). Needham, MA: Sloan - C.

Guilar, J., & Loring, A. (2008). Dialogue and community in online learning: Lessons from Royal Roads University. *Journal of Distance Education*, *22*(3), 19—40.

Harasim, L. (2000). Shift happens: Online education as a new paradigm in learning. *The Internet and Higher Education*, *2*(1–2), 41—61, doi:10.1016/S1096-7516(00)00032-4

Hiltz, S. R., & Turoff, M. (2005). Education goes digital: The evolution of online learning and the revolution in higher education. *Communications of the ACM*, *48*(10), 59—64, doi:10.1145/1089107.1089139

Keegan, D. (1996). *Foundations of distance education* (3rd ed.). London: Routledge.

Khan, B. (2001). *Web-based training.* Englewood Cliffs, NJ: Educational Technology Publications.

King, F., Young, M. F., Drivere-Richmond, K., & Schrader, P. G. (2001). Defining distance learning and distance education. *AACE journal*, *9*(1), 1—14.

Lowenthal, P., & Wilson, B. G. (2010). Labels do matter! A critique of AECT's redefinition of the field. *TechTrends*, *54*(1), 38—46, doi:10.1007/s11528-009-0362-y

Lowenthal, P., Wilson, B. G., & Parrish, P. (2009). Context matters: A description and typology of the online learning landscape. *AECT International Convention, Louisville, KY. Presented at the 2009 AECT International Convention, Louisville, KY*.

Moore, M. G. (1990). Background and overview of contemporary American distance education. *Contemporary issues in American distance education* (pp. xii—xxvi). New York: Pergamon Press.

Nesbit, J., Belfer, K., & Leacock, T. (2003). Learning object review instrument (LORI) manual 1.5. Retrieved from. http://www.elera.net/eLera/Home/Articles/LORI%201.5.pdf

Newby, T., Stepich, D., Lehman, J., & Russell, J. (2000). *Instructional technology for teaching and learning: Designing instruction, integrating computers, and using media* (2nd ed.). Columbus, OH: Prentice-Hall.

Nichols, M. (2003). A theory of eLearning. *Educational Technology & Society*, *6*(2), 1—10.

Oblinger, D. G., & Oblinger, J. L. (2005). Educating the net generation. EDUCAUSE. Retrieved from. http://net.educause.edu/ir/library/pdf/pub7101.pdf

Phipps, R. A., & Merisotis, J. P. (1999). *What's the difference? A review of contemporary research on the effectiveness of distance learning in higher education.* Washington, DC: The Institute for Higher Education Policy.

Rekkedal, T., Qvist-Eriksen, S., Keegan, D., Súilleabháin, G.Ó., Coughlan, R., Fritsch, H., et al. (2003). *Internet based e-learning, pedagogy and support systems.* Norway: NKI Distance Education.

Rhode, J. F. (2009). Interaction equivalency in self-paced online learning environments: An exploration of learner preferences.*The International Review of Research in Open and Distance Learning*, *10*(1). Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/603/1179

Spector, J. M. (2007). *Finding your online voice: Stories told by experienced online educators.* Mahwah, New Jersey: Lawrence Erlbaum Associates.
Spector, J. M., Merrill, M. D., Merrienboer, J. V., & Driscoll, M. P. (2008). *Handbook of research on educational communications and technology* (3rd ed.). New York, London: Lawrence Erlbaum Associates.
Tavangarian, D., Leypold, M. E., Nölting, K., Röser, M., & Voigt, D. (2004). Is e-Learning the solution for individual learning? *Electronic Journal of e-Learning*, *2*(2), 273−280.
Triacca, L., Bolchini, D., Botturi, L., & Inversini, A. (2004). Mile: Systematic usability evaluation for e-Learning web applications. *AACE Journal*, *12*(4).
Volery, T., & Lord, D. (2000). Critical success factors in online education. *International Journal of Educational Management*, *14*(5), 216−223.
Wagner, E. D. (2001). Emerging learning trends and the world wide web. *Web-based Training* (pp. 33−50). Englewood Cliffs, NJ: Educational Technology Publications.
Wilen-Daugenti, T. (2009). *.edu — Technology and learning environments in higher education.* New York: Peter Lang.
Zhang, Z., & Kenny, R. (2010). Learning in an online distance education course: Experiences of three international students.*The International Review of Research in Open and Distance Learning*, *11*(1). Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/775/1481