

2nd World Conference on Educational Technology Researches – WCETR2012

A Delphi Investigation into the Future of E-learning

Noa Aharony^a*, Jenny Bronstein^b

^a Bar-Ilan university, Ramat-Gan, 52900, Israel

^b Bar-Ilan university, Ramat-Gan, 52900, Israel

Abstract

The purpose of this study is to investigate the views and opinions of e-learning experts regarding the replacement of traditional education with e-learning settings and the advantages that the application of social and mobile technologies can bring to e-learning methods. The Delphi technique was chosen as a method of study. This technique is an efficient and effective group communication process designed to systematically elicit judgments from experts in their selected area of expertise. The 35 experts that participated in the study were asked to rate 16 statements according to what they think will probably happen (probability) and what they would like to see happen (desirability). Findings show that the majority of experts foresee as highly probable and highly desirable that the use of new technologies in e-learning will change current educational theories and methodologies and that e-learning instructors will have to acquire a new set of skills in order to succeed in the e-learning field. In addition, findings show that the majority of experts believe it is highly probable and highly desirable that social technologies may improve e-learning experience as they create an atmosphere of cooperation and easy interaction among users and that mobile technologies emphasize the convenience and flexibility of e-learning offered by the “anytime, anywhere” concept.

© 2013 The Authors. Published by Elsevier Ltd. Open access under [CC BY-NC-ND license](https://creativecommons.org/licenses/by-nc-nd/4.0/).

Selection and/or peer-review under responsibility of Prof. Dr. Hafize Keser Ankara University, Turkey

Keywords: e-learning, collaborative learning, Delphi technique, social technologies, mobile technologies

1. Introduction

The quick and massive development of technology in the last twenty years has caused many changes in the education field. More and more educational institutions use technology as a major instructional channel, and more and more courses have become online courses. This popular phenomenon is known as online learning, distance learning, e-learning, blended learning etc. As a result of the advent of the social web one of the main questions is where e-learning is headed. The purpose of this study is to investigate the views and opinions of e-learning experts regarding the following aspects: Will e-learning methods replace traditional education? Is there a need to modify e-learning methodologies to adapt them to new technological environments? What advantages will the application of

* Corresponding Author: Noa Aharony Tel: +55 76234

E-mail address: Noa.Aharony@biu.ac.il

Web 2.0 technologies bring to e-learning methods? What role social networking sites play in transforming e-learning methods? Will the use of mobile communications be effective in e-learning methods?

2. Literature review

The current study deals with two main themes. The first theme investigated several general issues regarding e-learning methods. The first issue in question is the instructor's role in e-learning, the skills needed and the nature and frequency of their feedback to students. Sammons (2003) posits that teachers have a different role when they teach online courses that requires a different training and support. Moreover, Keeton (2004) reports that online teachers gave higher ratings to online instructional strategies that required and encouraged inquiry, elicited reflection by learners and broadened the learner's experience of the topic. Instructor's feedback has also been recognized as critical to the learning process in many studies (Moore, 2002).

The second issue examined in the study is the assessment in e-learning. It is known that assessment is a critical aspect of the learning and teaching environment (Benson, 2003), and that effective assessment techniques can improve an instructor's understanding of students' needs (Beebe, Vonderwell & Boboc, 2010). The question which arises is whether we should implement the same assessment tools in traditional and in e-learning settings (Benson, 2003). The last issue in the first theme is the future of e-learning. A number of studies propose different future scenarios. Attwell (2007) proposes that personal learning environment is the future of e-learning.

The second theme investigated in the study is the impact social and mobile technologies have on e-learning methods. Social media tools may improve e-learning experience as they create an atmosphere of cooperation and easy interaction among users (Rodrigues, Sabino & Zhou, 2010). In addition, students no longer have the passive role in the process of learning as they may edit, posit new content and participate in discussions with other learners and teachers (Vassieleva, 2008).

3. Methodology

The purpose of this study is to review experts' opinions and views on the several issues in e-learning. The experts were asked to rate 16 statements according to two variables: (1) what they think will probably happen (probability); (2) what they would like to see happen (desirability). The Delphi technique was chosen as a method of study. The panel of experts in the current study included Israeli academic experts at all levels who are directly involved in the design and development of e-learning technologies as well as university teachers that teach e-learning courses on a regular basis. Of the seventy experts that were invited to participate, 35 experts responded to the first round of the survey resulting in 50% response rate. An online survey was specifically design and built for the present study. A consensus amongst the experts was reached in the first round for most statements; however, twenty participants' answers fell out of the group consensus. The second round was limited to those twenty participants and they were asked (via email) to explain their answers. Twelve participants responded to the email and provided explanations to their answers.

4. Results

Findings on the first theme present the experts' views on general issues regarding e-learning methods. When asked their opinion about whether they think the development and usage of e-learning technologies will change the current educational theories and methodologies, the experts foresee this development as highly probable (91.42%) and highly desirable (71.42%). These views are shared by Sammons (2003) who alleged that instructors have a different role when they teach online, a role that requires a different training in order to shift from teaching in a face-to-face

to an online setting. Concerning instructor's feedback, participants were asked whether they think that the lack of immediate feedback from the instructor is one of the major drawbacks of e-learning; hence there is a need for solutions that will improve the interaction channels between instructor and learner. Findings show that a large percentage of participants view the opportunity of a new solution as mostly probable (71.42%) and mostly desirable (71.43%). However, several experts present a different view on the importance of the instructor's feedback. One of the experts proposes that other forms of feedback such as peer learning are valid and can replace the traditional instructor's feedback. This idea is also shared by Maor (2003) who concludes that since distance education is a student-centered setting the instructor should play the role of facilitator; thus the role of peer learning is enhanced.

The next general issue is the assessment process which takes place in e-learning. Experts were asked whether they believe that the assessment process of an e-learning course should be different from a frontal course. Findings show that the majority of experts agree on the need to develop different assessment measures for a distance course: 88.57% found this change highly probable and 68.57% found it highly desirable. These findings are in accordance with Beebe, Vonderwell and Boboc's findings (2010), who state that the instructor's role in e-learning requires rethinking and reconstructing of assessment practices.

The last general issue focuses on the future of e-learning. Experts were asked their opinion on the tendency towards the provision of full e-learning degrees in the future. Findings show that almost half of the experts (48.56%) view the provision of full e-learning degrees as highly probable and 71.42% of experts see it as highly desirable. In another question, experts were asked whether they believed that e-learning methods will replace completely traditional education methods in the future. Findings show that 62.84% of experts foresee that it is highly improbable that e-learning methods will completely replace traditional education methods and 60% believe this development will be highly undesirable. The analysis of the last two findings is intriguing, suggesting that on one hand experts assume that the tendency towards the provision of full online degrees will increase in the future, but on the other hand, they do not believe that e-learning methods will completely replace traditional education methods in the future, and furthermore, they think that this development is undesirable.

The second theme examined in the study is the impact that social and mobile technologies have on distance education methods. When asked whether social networks such as Facebook and Twitter will have a great impact on e-learning, the majority of experts foresee as highly probable (62.84%) that social networks will have a significant impact on e-learning methods. Yet, about half of them (57.13%) saw this impact as desirable. A difference between the probability and the desirability of the issue is also revealed in the next statement which proposes that the use of social technologies in e-learning should be based on new and different pedagogical theories. Findings show that although the majority of experts believe that the implementation of social technologies into e-learning methods should be based on new pedagogical theories (80%), only half of the (51.42%) experts saw this theoretical change as desirable. Experts' answers to this statement are interesting and reflect an ambiguous attitude towards the development of new pedagogical theories. On one hand there is a general understanding (80%) that the use of social technologies in distance education should be based on new pedagogical theories, however, only half of the participants believe it is desirable, maybe understanding that it will be difficult to begin working and assimilating new pedagogical theories.

Experts were also asked about the possibility that social technologies may enhance deep independent learning. The majority of experts (77.14%) believe that this development is highly probable and only half of the experts believed it is desirable (54.28%). These findings echo Vassieleva' (2008) assumption that as using Web 2.0 tools in e-learning, students may be involved in a collaborative atmosphere which may enrich their learning process.

The last issue examined on the second theme is the impact that mobile technologies might have on e-learning methods. Results show that the majority of experts see as highly probable (80%) and highly desirable (71.43%) that mobile technologies will greatly impact e-learning methods. These findings concur with studies that highlight the

convenience and flexibility of distance learning offered by the “anytime, anywhere” concept (Matthews, 1999), which is particularly true in mobile technologies that allow learners to access the course content practically anywhere and at any time.

Conclusions

The experts that participated in this study believe that the use of new technologies will change current educational theories and methodologies, and will have impact on instructor's skills, efforts, feedback and interaction as well as on the process of learning assessment. However, concerning the future of e-learning, participants view a future tendency towards the provision of full online degrees, yet, they are skeptical; stating that e-learning setting will not completely replace the traditional educational setting. Regarding the impact of social and mobile technologies on e-learning, it seems that experts assume that the assimilation of social and mobile technologies will influence e-learning methods and pedagogies, yet, they do not think that this change is desirable. This finding can be associated with the fact that experts did not like the notion that social technologies can enhance neither deep, independent learning, nor an independent, motivated learner. These surprising findings may reflect experts' attitude and understanding, that it will be difficult and complicated to begin working according to new theories and pedagogies. Finally, findings show that experts perceive the role of social and mobile technologies as facilitators in the transfer and sharing of information in distance education settings.

References

- Anderson, R. S. (1998). Why talk about different ways to grade? The shift from traditional assessment to alternative assessment', in Anderson, R. S. and Speck, B. W. (ed.) *Changing the way we grade student performance: Classroom assessment and the new learning paradigm*. New Directions for Teaching and Learning, No. 74. San Francisco: Jossey-Bass.
- Attwell, G. (2007). Personal learning environments - the future of eLearning? *eLearning Papers*, 2 (1).
- Azevedo, R., Moos, D. C., Greene, J. A., Winters, F. I., & Cromley, J. G. (2008). Why is externally facilitated regulated learning more effective than self-regulated learning with hypermedia? *Education Technology Research and Development*, 56, 45–72.
- Beebe, R., Vonderwell, S. , & Boboc, M. (2010). Emerging patterns in transferring assessment practices from f2f to online environments. *Electronic Journal of e-Learning*, 8(1), 1-12.
- Benson, A. D. (2003). Assessing participant learning in online environments. *New Directions for Adult and Continuing Education*, 100, 69-78.
- Keeton, M. T. (2004). Best online instructional practices: Report of phase I of an ongoing study. *Journal of Asynchronous Learning Networks*, 8(2), 75–100.
- Maor, D. (2003). The teacher's role in developing interaction and reflection in an online learning community. *Computer Mediated Communication*, 40 (1/2), 127-137.
- Matthews, D.(1999). The origins of distance education and its use in the United States. *T.H.E.Journal*, 27 (2), 54-66.
- Moore, M. G. (2002). What does research say about learners using computer- mediated communication in distance learning. *The American Journal of Distance Education*, 16 (2), 61–64.
- Rodrigues, J. ., Sabino, F. ., & Zhou, L. (2010). Enhancing e-learning experience with online social networks. *IET Communication*. DOI: 10.1049/iet-com.2010.0409
- Sammons, M. (2003). Exploring the new conception of teaching and learning in distance education. In M. G. Moore & W. G. Anderson (Eds.), *Handbook of distance education* (pp. 387-397). Mahwah, NJ: Lawrence Erlbaum Associates.
- Vassileva, J. (2008). Toward social learning environments. *IEEE Trans. Learn. Technol.*, (4), 199–214.