

This is an electronic reprint of the original article.
This reprint *may differ* from the original in pagination and typographic detail.

Author(s): Pihlajamaa, Johanna; Karukka, Minna; Ålander, Heidi

Title: Comparison of higher education student and teacher perceptions of e-learning

Year: 2016

Version: As published

Please cite the original version:

Pihlajamaa, J., Karukka, M. & Ålander, H. (2016). Comparison of higher education student and teacher perceptions of e-learning. In Proceedings of the 15th European Conference on e-Learning ECEL 2016 (pp. 782-785). Reading, UK: Academic Conferences and Publishing International.

Comparison of Higher Education Student and Teacher Perceptions of E-learning

Johanna Pihlajamaa, Minna Karukka and Heidi Ålander
Oulu University of Applied Sciences, Oulu, Finland

johanna.pihlajamaa@oamk.fi

minna.karukka@oamk.fi

heidi.alander@oamk.fi

Abstract: Currently e-learning is considered an essential part of the everyday learning processes for both teachers and students in higher education. However, the learning results of e-learning are under debate and there is a growing critique on the efficiency and actual results of e-learning. In this paper we present our on-going work for exploring higher education students' and teachers' recent perceptions of their e-learning experiences. Two surveys were conducted in order to investigate and compare the perceived advantages, challenges and needs for support among the students and teachers in higher education. The results indicate that the perceived advantages of e-learning for both teachers and students were fairly similar. Flexibility in use of time and place were found as the most important benefit of e-learning. The main challenges in e-learning for both students and teachers dealt with technical issues and teacher-student interaction. Both students and teachers also experienced problems in directing the learning situation. Based on the studies we suggest that in order to ensure high-quality learning results in e-learning, continuous and relevant training and peer support for educators and students are needed. Additionally it is important to enhance the user experience and to carefully design the content and materials of the courses. Finally, we suggest that in e-learning the interaction between teachers and peer students should be improved.

Keywords: e-learning, technology enhanced learning, higher education

1. Introduction

To date much research defines e-learning as all forms of electronically supported learning and teaching. These educational experiences where skills and knowledge are transferred occur both in and out of classroom and are supported or delivered by technology (Donnelly et al, 2012). Another term for e-learning used is Technology Enhanced Learning (TEL). These terms describe the role of technology as "socio-technical innovations that will support and enhance learning practices of both individuals and organisations" (Manouselis et al, 2011). However the term TEL has also been criticized for being adopted too easily as a useful, inoffensive and descriptive term, when in fact it is actually rather complex and includes possible problematic social, technological and educational changes (see e.g. Bayne 2014). In this paper we understand e-learning as transferring skills and knowledge between teachers and students, the questioning of the content and the creation of new knowledge by means of different technological applications.

The new technologies have expanded the possibilities in relation to where and when teaching and learning could happen. As a result, higher education teachers and staff are expected to act as designers of learning processes and environments as well as developers of collective learning experiences. However the lack of teachers' skills has been seen as a challenge (Weber 1999). In a world changing fast particularly in the fields of technology and globalization, a reform is needed in higher education (Williams, 1999).

According to studies e-learning can facilitate self-paced or instructor-led learning and with the help of media available teachers can produce rich and interactive learning experiences. E-learning is also found equally effective in knowledge transfer and acquisition compared to traditional methods. (Donnelly et al, 2012) Depending on the teaching method used, digital technologies can enhance the teacher-student dialogue and enable certain kinds of activities and feedback that traditional teaching methods lack. Additionally digital technologies have created a significant change in the quality and range of resources available to education. (Laurillard 2012)

The key question today is whether the actual learning outcomes of students have improved when learning is increasingly taking place in electronic learning environments, especially in the case where only lecture videos are being used as the main learning materials (see e.g. Koedinger et al 2015). Also the different pedagogic approaches used in e-learning activities matter. It has been noticed that minimally guided approaches used in delivering online studies might not bring about the best possible learning results (see e.g. Hase & Ellis 2002,

Kirschner et al 2006 and Kirschner & van Merriënboer 2013). We need “more critical understandings of the pedagogic and societal impact of technological change” (Bayne 2014). Students may appreciate e-learning for its opportunities but some students have criticized the acquisition of conceptual and methodical knowledge. Face-to-face learning components are favored when the learning process included conceptual knowledge in the subject matter, skills in the application and use of one's knowledge in practice, knowledge and skills in scientific work routines, or in communication (Paechter & Maier, 2010). As a consequence it is important to study further the perceptions of e-learning to better understand how the students' learning achievements and experiences courses could be improved.

The main problems that plague e-learning are poorly designed packages, inadequate technology, lack of skills, need to integrate a face-to-face teaching component, the time-intensive nature of e-learning and computer anxiety. As a solution for these problems, they offer standardization, funding, integration of e-learning into the curriculum, blended teaching, user-friendly packages, access to technology, skills training, support, employers paying e-learning costs and dedicated work time for the school to deliver e-learning. (Donnelly et al 2012) Furthermore an important factor is the stimulation of learning motivation, the structure and coherence of the learning material and the course and the facilitation of collaborative learning with the help of a professional instructor. (Paechter, Maier & Macher, 2010.)

2. Our Research

The overarching goal for this study is contribute to the debate on how to ensure successful learning outcomes in e-learning environments. To this end, we follow a two-pronged approach: first, we investigate teachers' and students' experiences and perceptions of e-learning. Secondly we compare and contrast these understandings in hopes of determining the e-learning activities with the potential of achieving high quality learning outcomes.

This paper builds upon an earlier study on higher education teachers' perceptions on utilizing distance learning (Ålander & Karukka, 2016) and a recent survey conducted with higher education students. The survey was sent via email to teachers working in higher education at Oulu University of Applied Sciences (OUAS) (n=51). The students' questionnaire was mainly similar and it was published in the OUAS intranet (n=147).

The questions were related to learning experiences, usefulness of e-learning tools and environments (e.g. Optima, Moodle, Adobe Connect Pro and Skype), the possible challenges encountered and the form of support the teachers and students preferred.

2.1 Results

The results of the study for both teachers and students highlighted the importance of independence that e-learning bestows upon them in relation to time, place, flexibility and individual options. However, the flexibility is more emphasized by the students than the teachers. In accordance with the expectations mentioned by Weber (1999), e-learning is seen as flexible in that it enhances students' taking charge of their own studies. 12 % of the teachers perceived e-learning to be more capable than traditional learning to foster active learning environments. This is especially true with reference to increasing student presence, participation as well as collaborative and individual learning. However, this perception is not shared by students. When it comes to learning material provided by the teacher the students preferred traditional PowerPoint-presentations (71 %) and audio-visual materials (47 %). Also learning materials produced by other students were found useful (36 %). These materials were also the ones the teachers used the most.

The main challenges in e-learning for both groups dealt with technical issues related to non-functioning data connections and software. Another common challenge were the difficulties in interaction between teachers and students. However the problems in interaction is more emphasized by the students. Both students (44 %) and teachers (23 %) also experienced problems in steering the learning process. Other pedagogical issues included how to arrange individual tutoring suitable for different students. This result is similar to Paechter and Maier's (2010) study where face-to-face communication was favored in certain areas of educational activities. When it comes to challenges the main differences in between the teachers and students perceptions concerned the skills needed in e-learning. The teachers experienced more challenges with technological skills than the students.

For teachers the most important element regarding support for e-learning from was cooperation between teachers (e.g. sharing ideas and experiences, discussions about technological and pedagogic issues). A third of

the teachers had created digital course materials together or shared their own materials with other teachers, but only a minority had experience of co-teaching, planning courses together or acting as a peer mentor. When it comes to support, students preferred group tutoring, individual guidance and peer support. The students also wanted more information about their possibilities to accomplish studies in e-learning environments.

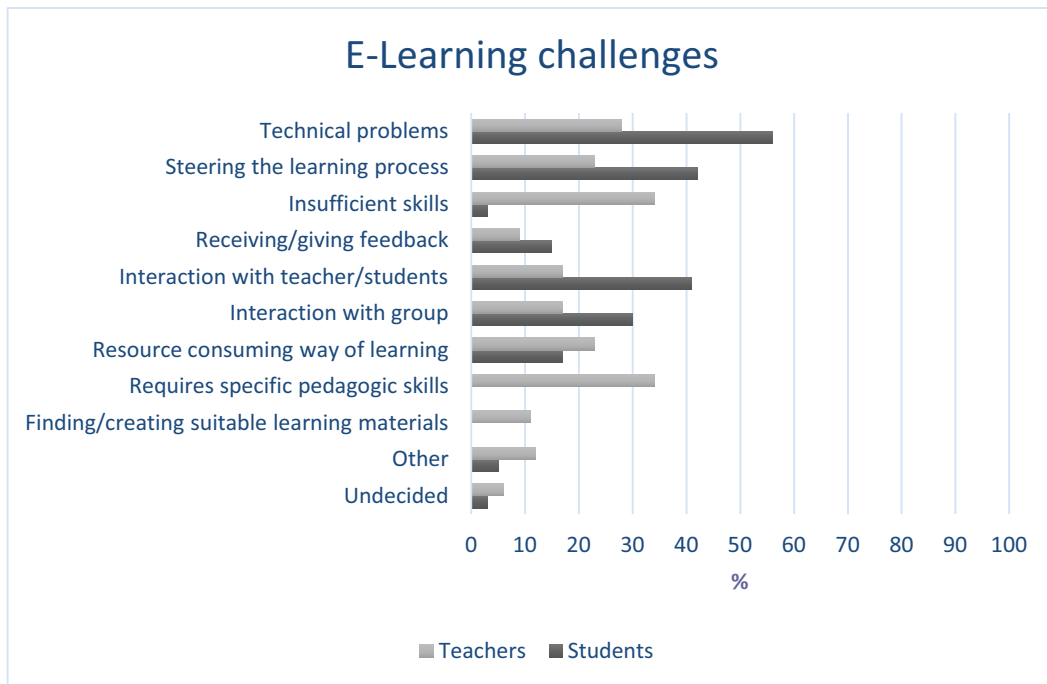


Chart 1: Student and teacher perceptions of e-learning challenges

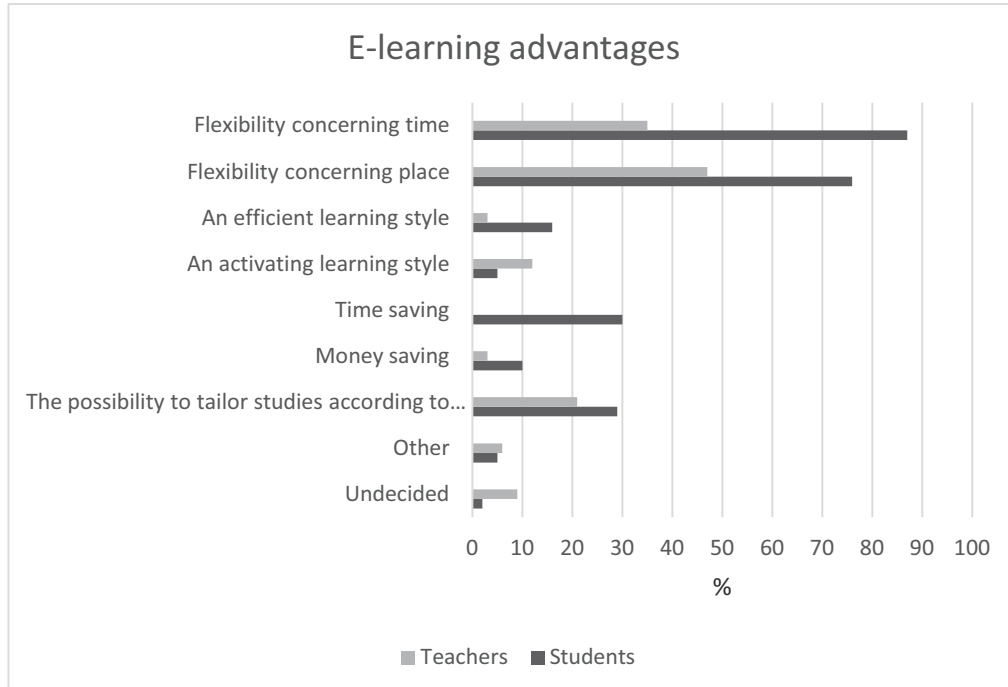


Chart 2: Student and teacher perceptions of e-learning advantages

3. Conclusions and Discussion

The results of the study contribute to an understanding of the features that should be taken into consideration in designing e-learning activities. There are some divergences in views between teachers and students when it comes to e.g. lack of technological or pedagogic skills, interaction between teachers and students and whether

e-learning is time saving or not. Based on the study we suggest that in order to ensure the high-quality learning outcomes in e-learning continuous and relevant training and peer support for educators and students are needed. Additionally it is important to enhance the user experience of the devices and software. Further the content and materials of the courses should be designed carefully and content should be supportive and appropriate for each group. We also suggest that in e-learning the interaction between teachers and students as well as between peer students should be improved. As a future work we would like to conduct a field study observing the usage of e-learning tools in practice to gain deeper understanding of possibilities and challenges of transferring skills and knowledge by means of different e-learning applications.

Acknowledgements

This research was financially supported by the European Social Fund as a part of project CREATO – Growth and Strength into Business Through Creative Competence.

References

- Ally, M. (2004) Foundations of Educational Theory for Online Learning. in Anderson, T. & Elloumi, F. (Ed.) Theory and Practice of Online Learning. Athabasca: Athabasca University.
- Bayne, S. (2014) What's the matter with 'technology enhanced learning'? Learning Media and Technology vol 40, no.1, p.5-20.
- Donnelly, P., Benson J., and Kirk, P. (2012). How to Succeed at E-learning. Somerset, GB: Wiley-Blackwell.
- Hase, S. & Ellis, A. (2002) Problems with online learning are systemic, not technical in Stephenson J. (Ed.) Teaching and Learning Online. Pedagogies for new Technologies. Kogan Page Limited, UK.
- Kirschner, P.A. & van Merriënboer, J.G. (2013). Do Learners Really Know Best? Urban Legends in Education, Educational Psychologist, 48:3, p. 169-183
- Kirschner, P.A., Sweller, J. & Clark, R.E. (2006) Why Minimal Guidance During Instruction Does Not Work: An Analysis of the Failure of Constructivist, Discovery, Problem-Based, Experiential and Inquiry-Based Teaching, Educational Psychologist, 41:2, p. 75-86
- Koedinger, K.R., Kim, J., Zhuxin Jia, J., McLaughlin, E.A. & Bier, N.L. Learning is Not a Spectator Sport: Doing is Better than Watching for Learning from a MOOC. L@S '15 Proceedings of the Second (2015) ACM Conference on Learning @ Scale. p. 111-120
- Laurillard, D. (2012) Teaching as a Design Science. Building Pedagogical Patterns for Learning and Technology. Routledge, New York and London.
- Manouselis, N., Drachsler, H., Vuorikari, R., Hummel H. & Koper, R. (2011) Recommender Systems in Technology Enhanced Learning. Springer US.
- Paechter, M., Maier, B. & Macher, D. 2010. Students' expectations of, and experiences in e-learning: Their relation to learning achievements and course satisfaction. Computers & Education, 54, p. 222-229
- Paechter, M. & Maier, B. (2010) Online or face-to-face students' experiences and preferences in e-learning. The Internet and Higher Education, 13, p. 292-297.
- Williams, H.M. (1999) The Economics of Higher Education in the United States. What Can Other Developed Countries Learn from It? in Hirsch, W.Z. & Weber, L.E. (Ed.) Challenges Facing Higher Education at the Millennium. American Council On Education. Oryx Press Series on Higher Education. USA
- Weber, L.E. (1999) Survey of the Main Challenges Facing Higher Education at the Millennium in Hirsch, W.Z. & Weber, L.E. (Ed.) Challenges Facing Higher Education at the Millennium. American Council On Education. Oryx Press Series on Higher Education. USA
- Ålander, H. & Karukka, M. (2016) Charting Teachers' Perspective on Utilizing Distance Learning in Higher Education. Proceedings of INTCESS2016 3rd International Conference on Education and Social Sciences. Istanbul, Turkey.