5th World Conference on Learning, Teaching and Educational Leadership, WCLTA 2014

Education 2.0: E-Learning Methods

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Abstract

Information and communication tools (ICT), Web 2.0 applications and the impact that these resources are having on education are rapidly creating new challenges for teachers and learners faced with learning online. Teaching and learning in an e-learning environment happens differently than in the traditional classroom and can present new challenges to professors and learners participating in this online learning environment. Objectives: The purpose of this article is to provide a framework for teachers for a better e-interaction with students. Approach: It shows the literature and research that focus on e-learning statistics. Results: Continuing to learn and try new methods of communication will aid in improved learning and foster teacher-student respect and collaboration. Value: There are effective techniques to presenting face-to-face material in the online environment that will allow the student to achieve a higher level of satisfaction of learning and cognitive understanding of the course material.

Keywords: e-learning, education, communication, challenges, access, flexibility.

1. Introduction

Oxford presents the concept of e-learning as being a type of "learning conducted via electronic media, typically on the Internet".

In the Canadian Council on Learning's recent report was stated that e-learning is "the development of knowledge and skills through the use of information and communication technologies (ICTs), particularly to support

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interactions for learning – interactions with content, with learning activities and tools, and with other people" (Abrami et al., 2008). This definition focuses on the idea of "interaction" as a key feature of e-learning and it is close to acknowledging the key role pedagogy plays in effective learning.

As seen in recent years, it can be quickly understood that the Internet is transforming the way we work and even the way we learn. We have been witnesses to the increasingly high interest in e-learning, not only from the commercial organizations, but also from the academic institutions. At a global level, it can be well observed that the market for educational products and services is rapidly expanding.

E-learning has become of increasing importance for various reasons, such as the rise of information and global economy and the emergence of a consumer culture. Students of the 21st century demand a flexible structure that allows them to study, work and participate in family life at the same time. This flexibility is reflected in alternative delivery methods that include Internet use. People have also become more sensitive to cultural and gender differences, and to the learning needs of the challenged, needs that might be addressed by e-learning (Harriman).

2. E-learning in higher education

As IT becomes more robust and easier to use, it increasingly infiltrates academic activities in higher education. Course management systems let teachers easily integrate technology into their instruction. Online communication and information access expand a course's range to wherever and whenever a professor or student logs on. Higher network bandwidth provides a quick and efficient conduit to accomplish these activities (Andersson and Grönlund, 2009).

As an increasing number of institutions adopt e-learning strategies, their successes depend not only on the availability of technology but also on the extent to which faculty and students are supported as they explore and develop innovative ways to integrate technology into the learning experience. Pedagogical practices must be adapted, technical proficiency becomes more important, and a reliable and robust technical infrastructure must be maintained in order to use e-learning effectively. These demands are translated into a host of new professor and student support requirements that institutions must address (Wright, 2010).

The use of technology in education, commonly defined as e-learning, has become a standard component in many courses. Technology applications are not limited to the classroom – they are also placing some classroom sessions with virtual sessions or fully replacing classroom courses with online courses.

2.1. Key e-learning issues

As institutions adopt e-learning, some important new issues arise:
- institutions must provide an adequate and reliable technical infrastructure to support e-learning activities;
- teachers and students must possess the technical skills to use e-learning tools;
- professors must redesign their courses to incorporate e-learning effectively into their pedagogy.

The term "e-learning" has many connotations and forms. In this study, we focus on three types of e-learning courses (Wan, Wang, and Haggerty, 2008):
- *Online distance-learning courses*: The professor conducts class sessions online, not via e-mail or telephone. This usually requires no face-to-face meetings between students and teacher either in the classroom or via video during the course.
- *Traditional courses supplemented with technology*: The instructor teaches all sessions in the classroom, but incorporates technology in some or all classes (using PowerPoint, Web-based activities, online testing, etc.).
- *Hybrid courses*: The professor combines elements of online distance learning courses and traditional courses to replace some classroom sessions with virtual sessions.

3. Conceptual framework on inhibiting and facilitating factors for e-learning

By using a framework consisting of 36 enabling and disabling factors, this paper will identify the major challenges for e-learning in Romania. The conceptual framework was generated using the findings from an extensive literature study on facilitating and inhibiting factors for e-learning. The framework consists of 36 factors belonging to eight different categories: student, teacher, technology, course, institution, support, costs and society (Table 1).

Table 1. Inhibiting and facilitating factors for e-learning.

STUDENT	TEACHER	TECHNOLOGY
motivation	technological confidence	access
conflicting priorities (time)	new learning style confidence	software and interface design
academic confidence	motivation and commitment	costs
technological confidence		
learning style		
gender		
age		
COURSE	INSTITUTION	SUPPORT
curriculum design	knowledge management	support for the faculty's students
pedagogical model	training of teachers and staff	social support for students
subject content		support for faculty
teaching and learning activities		
flexibility (delivery mode)		
localization		
availability of educational resources		
COSTS	SOCIETY	
technology	role of teacher and student attitudes on e-learning and IT	
access rates		
tuition, course fees	rules and regulations	
books		
institutional economy and funding		

Source: According to Andersson (2008), *Seven major challenges for e-learning in developing countries*: Case study eBIT, Sri Lanka, International Journal of Education and Development using Information and Communication Technology (IJEDICT), *Vol. 4*, Issue 3, p. 46.

Whereas other frameworks and models focus on one or a few factors such as computer anxiety (Brown et al., 2006) or culture (Burn et al., 2005; Pagram et al., 2006), this framework takes a holistic view by arguing that one cannot exclusively look at technological or individual factors when discussing e-learning enablers and disablers. Important factors are also found in the surrounding society, in the support functions provided, at the institutional arrangement etc.

3.1. Major challenges for e-learning in developing countries

Researchers on the field (Andersson, 2008) have noticed that there are a few factors – which are persistent over time for both students and teachers – that can be considered major challenges for e-learning. These factors are the following ones: support, flexibility, teaching and learning activities, access, academic confidence, localization and attitudes (Li, Irby, 2008).

■ **Support and guidance for students** → this refers to the support systems needed for the student to easily make it through the course. Contact or intervention from the institution to its students and support from the tutor and other staff (including IT help desk) are said to improve learning and pass rates (Li, Irby, 2008).

■ **Flexibility** → it refers to the classical mantra of e-learning being learning for "anyone, anytime, anywhere". The factor concerns many issues, such as whether students should be allowed to learn at self-pace and take the examinations when they want and if they should be allowed to choose the medium of content delivery. Above all, flexibility in assignment pace and course delivery has proven to lead to good results (Li, Irby, 2008).

■ **Teaching and learning activities** → this challenge refers to the different teaching and learning activities that can be undertaken during a course. Research shows that activities that affect students' performance are the level of interactivity, the level of collaboration and interaction with peers and the possibility for hands on practice for students (Andersson, 2008).

■ **Access** → the use of ICT for distance education makes access to the technology an enabling or disabling factor, but access also refers to the quality of the connectivity (Bon, 2007). The reliability of this connection and the bandwidth will affect the users' ability to access the full range of the content needed.

■ **Academic confidence** → refers to the students' previous academic experience and qualifications. The student's academic confidence is a good predictor of a student's success or failure in e-learning courses and, according to some research, academic factors outnumber other important factors in discriminating between successful and non-successful web-based students (Li, Irby, 2008).

■ **Localization of content** → it is about how the course material is adapted in order to fit local culture, traditions and religious beliefs. For instance, images and symbols should be appropriate for the local culture in order to not be offensive or simply confusing (Pagram et al., 2006).

■ **Attitudes on IT and e-learning** → positive or negative attitudes come from society, politicians, students and teachers themselves and can be made visible in the political agenda or in how people perceive e-learning as not being "as good" as face-to-face teaching (Gammill et al., 2005). Attitudes can become major challenges for e-learning if not addressed correctly and openly.

4. Conclusions

If "outcomes" is understood to include wider social, cognitive and affective effects, then it is possible to say that e-learning affordances have a positive effect on outcomes. The nature of the existing evidence indicates that, when good teaching occurs in tandem with appropriate e-learning technologies, then students are more likely to benefit and be able to work and learn in ways that feel more natural to them. The studies in this field also point to a greater focus on specific tools, rather than the teaching and learning processes by which they are successfully used.

As for the practices that maximize the benefits of e-learning, pedagogies which privilege collaboration, communication, sharing, problem-solving and risk-taking appear to lead to greater student engagement and sustained concentration – elements which are key aspects of achievement. These mainly co-constructive pedagogical practices appear to develop even when teachers have not deliberately included such approaches; this may be because they fit with students' preferred ways of using these technologies. The preponderance of social networking in young people's technological lives may also contribute to this way of learning. And while many students are digital natives in the sense of being "at home" with technology, they nevertheless are new to using these same tools in an educative way and beyond social or immediate purposes.

It is still the role of the teacher to connect these tools purposefully and to teach students to benefit from using these universal tools for learning. A key component of effective learning is the development of critical thinking and metacognition. These go hand in hand with effective literacy practices in schools, and integrating key components of programs realized in order to create the best possible conditions for students' learning. These points also accentuate the importance of the "C" in ICT: *communication* (of ideas, concepts, methods, practices, knowledge) is a fundamental component of the types of pedagogies that link closely to fixed, integrated uses of e-learning, and link to positive achievement outcomes for students over time.

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