



EDUCATION THROUGH E-LEARNING: CASE OF SERBIA

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Abstract. The objective of this paper is to analyze education through e-learning. The author presents an overview of some recent projects with focus on Serbia and uses their results to discuss advantages of using e-learning as an alternative opportunity and support to “face-to-face” education. From the author’s viewpoint, it is believed that online learning will not replace face-to-face learning but still should be offered as a style of learning that suits students needs. Through the research done on this subject, it has been identified that online learning can assist in complementing studies when coupled with face-to-face learning. In addition, the author’s findings suggest that without good policy and financial support there is no good interaction between e-learning (classroom learning)or face-to-face learning and e-learning .

Keywords: e-learning, online courses, education, educational technology, universities, Serbia.

1. Introduction

Proponents of educational technology for years have stated that faculties need to focus more on teaching “21st-century skills,” such as problem solving, critical thinking, and collaboration. The 21st century learners will need to meet the complex demands of the new economy and society in a globalized form (Radović Marković 2007b). The workplace of tomorrow will increasingly require 21st century learners to work in teams, collaborating across companies, communities, and continents. Certain skills cannot be developed solely by simple multiple-choice exams. New education programmes must be based on exchanging good practice through studies and networks among strategic partners .To address individual needs of learners, attention must be paid to adaptability of the curriculum and the learning environment. A worthy institution views quality issues as primary and integral throughout the conceptual design of its education programs. True quality institutions must govern their curriculum, instruction, and support services by policies and standards established to assure future success of the participants (Capogrossi 2002). In many occasions, the assessment

and examination vehicles have been evaluative measures of knowledge and competencies of learners measured against learning objectives derived from the needs of the industry and professions. Successful institutions must design their learning objectives to serve the demonstrated needs of the desired student audience. The academic and professional needs of the student audience will be at the foundation of the curriculum, and the subject matter objectives will become the focus of quality control process (Capogrossi 2007).

One of the key attributes of e-learning is the flexibility that it offers employees – they can learn at home and/or in the office in their own time and/or their employer’s time. The most flexible way is to provide stand-alone software for installation on each student’s computer. This option limits the use of shareware and evaluation and allows only limited functionality of the software. More advanced courses may require access to a more functional commercial software (Beconytė *et al.* 2008).

In keeping with the above, new educational programs have appeared, as well as new modes of studying. Accordingly, everywhere in the world the existing education system is being redefined and educational pro-

grams that have to closely relate to practice are being improved. For that sake, “new schools” are founded, which are based on modern programs and courses meant for various groups of business people, men and women. Very popular are virtual faculties which are founded all around the world and which enable connection between business people and business students with lecturers from all around the world, no matter where they actually might be. Participating in courses and testing over the Internet, essentially change previous way of gaining knowledge in classical classrooms.

The above way of learning contributes to fast information exchange, more access to the newest knowledge and experiences in this domain and save the time and money. Consequently, in this millennium the classic way of education will be slowly substituted with some other forms of education, in which learning from homes and offices with the help of computers were true. The implementation of new technologies can substantially reduce training costs (e.g., travel, food, housing) related to bringing geographically dispersed employees to one central training location. These technologies allow trainers to build into training many of the desirable features of the learning environment (Kumpikaite 2008). In other words, interactive education should provide a completely new dimension of gaining knowledge and to make it easier for those who attend certain courses to learn faster and easier.

2. Definition of E-learning

E-learning research is a young field. Firstly, it is still eclectic in nature, not yet clearly defined and scoped. Secondly, much of the current research is criticized for being too anecdotal, lacking theoretical underpinning (Mitchell 2000). This means more systematic research but also a better understanding of the benefits and limitations of different methods. Research and practice must develop new methods of interchange. User-oriented research has to be implemented as quickly as possible in the practice of education and training organisations.

The term “e-Learning” was coined in the late 1990s to describe the use of technology to deliver learning and training programs. According to the European Commission (2001) the *e-learning* is defined as: “*The use of new multimedia technologies and the Internet to improve the quality of learning by facilitating access to resources and services as well as remote exchanges and collaboration.*”

This term describes education that occurs only through the Web, that is, it does not consist of any physical

learning materials issued to students or actual face-to-face contact. It accomplishes this through the use of tools such as:

- Online resources and materials;
- Electronic and virtual libraries;
- Real time and non-real time discussion boards, e.g. mycsu myforums;
- Chat;
- Email;
- A range of knowledge sharing application software.

Online learning can be organised in different ways, from programmes that emphasise individual flexibility on one side of a continuum to programmes that emphasise group work and collaborative learning.

3. A Comparison between E-learning and C-learning

The concept and the use of e-learning were firstly adapted in the mid-1980s by several institutes in the United States. By 2003, approximately 1.9 million learners participate in e-learning at institutes of higher education, a million of which are from Australia, New Zealand and the United Kingdom. The number of people applying for e-learning courses increase at a rate of 25 percent each year.

The online learning environment is quite different from a traditional classroom. In other words, online courses require participants to take on new and different teaching/ learning behaviors. Recent research has compared online learning to face-to-face learning (Hoben *et al.* 2002), explored the effectiveness of online tools such as discussion boards and chat rooms (Spatariu *et al.* 2004), addressed evaluating effective online instruction (Graham *et al.* 2001; Wentling and Johnson 1999), and assessed the value of online courses in specific fields of study (McCombs (2000). Draves (2002) provides a list of reasons why he believes the Internet enhances learning, including such advantages as being able to learn at a peak time of the day, learning at your own speed, accessibility to much information, an ability to track personal progress, and the capability to test personal learning efforts. He also believes cognitive learning via the Internet is actually better than in-person learning. Kirka (1996) mentions the time and place flexibility of the Internet in supporting SDL. Ruelland and Brisebois (2002) like how the e-world provides flexibility in the learning rhythm. Candy (2004) stresses the liberating value of the Internet in terms of continuous access to information and no geographic boundaries or restrictions.

Research on the satisfaction and achievement of students in online versus classroom courses has produced mixed results; some findings suggest that students in

online courses are not as successful or not as satisfied with their courses as students in face-to-face courses and others suggest that online students perform just as well or better than students in face-to-face classes (e.g., Kassop 2003, Spooner *et al.* 1999). The main reason are highly motivated teachers who now have the ability to create a learning environment for students that is interactive, informative, and interesting. Wuensch *et al.* (2008), in their research asked students at 46 different universities in the United States to evaluate the pedagogical characteristics of their most recently completed face-to-face class and their most recently completed online class. The results show that students rate online classes as greatly superior to face-to-face classes in terms of convenience and allowing self-pacing. In addition, the e-learning students were in an environment where professors respond to their needs on demand. Namely, teaching and learning takes on a more collaborative feel in an e-learning environment. One-on-one instructional procedures have been viewed as highly effective for students with diverse needs.

Online programs range from 1-hour courses on self-development to an entire doctoral degree program. However, the most significant contribution of online programs is having the opportunity to self-pace within a desired time frame. Students are empowered to learn on their own. They are usually far more writing-intensive than traditional classes have ever been. In an online course, general discussions, requests for elaboration or assistance, answers to directed questions, group projects, most assignments, and many tests and quizzes are in writing. In addition, online education fosters self-motivated education, giving precedence to the autonomy of the learner. University of Phoenix's Flex Net goes one step further by using a common model (1/3 classroom, 2/3 online) to maximize utilization of its classroom facilities. This improves access by increasing the number of available courses and thus number of students served.

Through the online programs, learners can complete projects whether at work, home, or selected locations. On many occasions, a busy executive may not be able to leave the office, and yet, assignments, term papers and even research projects have to be finalized somehow; the magic of getting the assignments complete may be made possible through the online mode. Many of the course instructional concepts are developed through discussion using discussion forums in D2L, Blackboard and Moodle. Timely participation and regular check-ins are essential for successful discussion-based interaction. The discussion board's most vital use is to exchange ideas with other class participants.

Students will be asked to complete a minimum of three meaningful postings per week during the course; this will include reacting to readings, discussing the topic/issue of the week, sharing information and resources with classmates, or responding to a problem posted by peers or facilitator. It was found that in online learning students felt more comfortable participating in online discussions as they could form their responses/posts better through written word, rather than on-the-spot face-to-face discussions (Kassop 2003). He also concluded that when students begin using the electronic communication methods, discussion usually becomes more thought-out and precise. Online education fosters higher-quality discussion. Before students respond to an instructor's discussion question or to classmates' posted comments, they can refer to their course materials and think through their answers. As a result, students have the opportunity to post well-considered comments without the demands of the immediate, anxiety-producing face-to-face discussion, which often elicits the first response that comes to mind rather than the best possible response. It could be also concluded that although face-to-face learning does motivate the students to learn, it does not prepare them with all the important life-long learning skills of being able to find and learn information on their own or with assistance through discussion with other students.

In addition, the concept of using online modules has several advantages compared to the traditional university courses for full-time employees (Beconyť *et al.* 2008) as follows:

- Possible extension of the modules over a longer time span for full-time employees;
- Flexibility to choose only appropriate parts for students who are already professionally active;
- Modules can easily be adapted to fit specific training environments (e.g. advanced geography, geodesy, environment, IT specialists, GIS users, governmental employees –planners and decision-makers).

Implementation of new technologies to deliver training and to store and communicate knowledge means that trainers must be technologically literate. That is, they must understand the strengths and weaknesses of new technologies and implementation issues such as overcoming users' resistance to change (Kumpikaitė, Čiarnienė 2008).

Distance learning is also becoming increasingly attractive for women, as shown by some research studies. Namely, more than 60% of those over 25 years of age and female opt for this type of development and education in the world (Radović Marković 2007a).

Table 1. A Comparison between E-learning and C-learning

	E-learning	C-learning
Instructor's sense of control	Less sense of instructor control Easier for participants to ignore instructor	More sense of leadership from Instructor Not so easy to ignore instructor
Condition of meeting	No waiting for participants to arrive No latecomers or early leavers, etc.	Often have to wait for others to arrive People leave during the meeting, etc.
Mode	Discussions through text only; can be structured; dense; permanent; limited; stark	Verbal discussions: a more common mode, but impermanent
Physical context	Do not meet in a room; no shared physical context	Meet in a room; strong physical context
Work/discussion	<ol style="list-style-type: none"> 1. Work on multiple issues at the same time 2. Work not condensed – fluid and interwoven with other activities 3. Group contact continually maintained 4. Depth of analysis often increased online 5. Discussion often stops for periods of time, then is picked up and restarted 6. Members sometimes lose sense of where they are in the discussions over long periods of time (information overload) 7. Level of reflection high 8. Able to reshape conversations on the basis of ongoing understandings and reflection 	<ol style="list-style-type: none"> 1. Usually work on one issue at a time and advance through agenda item by item 2. Work is condensed and focused 3. Little group contact in-between meetings 4. Analysis varies, often dependent on time available 5. Discussions usually completed during meeting 6. Discussions occur within a set time frame, therefore less likely that members will lose sense of where they are 7. Often little time for reflection during meetings 8. Less likelihood of conversations being reshaped during meeting
Group dynamics	<ol style="list-style-type: none"> 1. Group dynamics not same as face-to-face; participants have to learn how to interpret them online 2. Less sense of anxiety 3. More equal participation, especially for females; participants can take control of this 4. Less hierarchies, etc. 5. Dynamics are 'hidden' but traceable 6. No breaks – constantly in the meeting 7. Can be active listening without participation 8. Medium (technology) has an impact on dynamics 9. Different expectations about participation 10. Slower – time delays in interactions/discussions 	<ol style="list-style-type: none"> 1. Dynamics 'understandable' to most participants because they have experienced them before 2. Anxiety at beginning/during meetings 3. Participation unequal and often dominated by males, but group may try to share time equally among members 4. More chance of hierarchies 5. Dynamics evident but lost after the event 6. Breaks between meetings 7. Listening without participation may be frowned upon 8. Medium (room) may have less impact 9. Certain 'accepted' expectations about participation 10. Quicker – immediacy of interactions/discussions
Total effort of group	Greater, using online learning	Less than with online learning

Source: McConnell, D. (2000) (adopted to requirements of this paper)

The reason for this lies in the fact that this method of learning offers numerous advantages. Among the most prominent benefits, the following may be pointed out:

a) The flexibility of the learning process (learners study at the time most convenient to them).

b) Achieving a better balance between personal and other commitments (they may spend more time at home with their families).

c) Minimizing costs (both time and money savings are made).

- d) A deeper sense of self-fulfilment (acquiring relevant and useful knowledge and achieving professional goals).

Furthermore, women at a certain age, over the age typical for learners (18–22 years of age), consider virtual classrooms to minimize the embarrassment and alienation factor (Capogrossi 2002). In addition to these advantages provided to women by online studying, distance learning also enables women to choose a certified course, offered by more than 90% of faculties in the world (Radović Marković 2007b). Accordingly, women are given the opportunity of choosing some of the programs from a broader range, the ones that best suit their professional interests and goals, without the requirement to move geographically. In other words, women are no longer limited to the local educational institutions, but have at their disposal a more comprehensive choice of educational programs offered worldwide. Studying over the Internet enables women permanent development thus reducing the educational gap in comparison to men. At the same time, the social status and life quality of women are being improved. Higher qualifications enable women to contribute more to their community.

4. E-learning in Serbia

Serbia does not have extensive experience deploying online studies and virtual faculties. Forming an international learning network may enhance e-learning opportunities in Serbia as well as in countries that are developing or in transition (Radović Marković 2007b). Because the functionality of the technologies and the benefits of virtual learning to learners and professors have been misunderstood, the entrepreneurial process although improved in Serbia has been impacted due to the lack of awareness (Radović Marković 2007a). If Serbians or citizens of other nations become more familiar with the techniques, potential learners as well as educators may be able to effectively discern the pros and cons of how e-learning is enhancing and improving education.

Methodologies and findings

Professor Marković conducted a study in 2009 that aimed to measure the role of online learning and how much the process has been accepted among learners and entrepreneurs in Serbia. Marković interviewed and asked 54 participants (34 women and 20 men) between the ages of 18 and 30 the following associated sub-questions:

- a) What do you think about online learning?
- b) What do you think about virtual professors?
- c) What is the interaction between students, students and professors?
- d) Does new technology isolate students from teachers?
- e) Do you prefer online learning rather than face-to-face? Why yes or why not?
- f) Does gender matter in online learning for entrepreneurs?
- g) What are online learning outcomes vs. Face-to-Face?

Although the majority of participants (68%), think that online learning is great as a new alternative for learning, the great amount of participants (63%) are not familiar with online courses for entrepreneurs and are unsure how virtual faculties function. Although it is fair to state that virtual learning will not obviously inspire every learner, it is fair to state that since a lack of knowledge exists concerning the process, most learners will consider the alternative as means to achieve knowledge in most subject areas, thereby stimulating human progress (Radović Marković *et al.* 2009).

Thirty percent of participants stated that lots of reasons exist for taking online courses. Low cost was a primary reason. Several participants (45%) proposed that women and elderly learners are more motivated to enroll in some online course because they are better at communicating online and scheduling their learning. Seventy percent of opined, “anytime, anyplace” nature of online learning suits female students more than male, whereby women are fitting their education in among their regular work. It is fair to conclude that women more so than men utilize management skills to complete their studies, driving human progress.

Although 50% of the participants do not desire to have discussions with other learners and professors who cannot be seen, most participants (95%) stated that computer literacy is the most significant for online studying. Although women choose some computing courses when offered in combination with other disciplines that emphasize social issues and computer applications, women think that online studying and virtual faculties are not so much popular in Serbia because of the lack of computer literacy, especially among women. It is fair to state that if women in Serbia as well as in other nations readily enrol in virtual courses due to the low costs, women may not (a) be readily participant in discussions due to computer literacy or (b) be open during discussions due to resistance, thereby, limiting human progress.

5. Conclusion

In spite of many different approaches to the topic, E-learning is now an essential component of education. E-learning has changed the face of education, training and vocational learning forever. But also it should be pointed out that in education, e-learning is not only changing the way students learn or how teachers teach; it is rather changing how knowledge is delivered and where educators train. It could be expected in the near future that open communication and management approaches will become the driving techniques to enhance learning skills in virtual environments, which will meet new requirements of societies. The most universities, polytechnics, and other training providers are presently using *study-away approach* capitalizing on the online potentials of the Internet programs delivery as and when services are warranted. More and more, learners completing a traditional degree and people who want to expand their skill sets are reverting to online programs. The selection is partly due to convenience and effectiveness and partly because the programs as a whole are affordable. As with any other program, a certificate is earned upon the successful completion of the program as well as an official transcript of academic record.

Building a more inclusive distance learning environment in Serbia involves making technological choices built on flexibility and an ability to respond quickly to changes in constantly evolving technology and informational resources. Collaboration, involving teachers, mentors, and instructional designers who truly represent hard to reach learners, and willingness to invest monies in developing a cyber infrastructure that reaches all learners regardless of where they live will be crucial.

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