

Participants' Characteristics for E-Learning

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ABSTRACT

During the last couple of decades e-learning has become an important way of education. In comparison to traditional, face-to-face learning, where all participants are collocated (same place/same time), e-learning represent a radical change in education process, because participants in e-learning process are at physical distance. Due to the physical separation of participants in e-learning process, is e-learning supported with modern information and communication technology (ICT). ICT is a basis and/or central construct which makes e-learning possible. Since e-learning represents a radical change in way of education (i.e. computer-mediated education), several important issues must be addressed. In paper we examine participants' personal characteristics and their importance for incorporation of potential participants in e-learning process. Based on prior theoretical and empirical research, this paper offers an insight into the participants' personal characteristics and proposes a set of participants' characteristics which could lead to success in e-learning process.

Keywords: E-learning, participants' characteristics, self-assessment, successful e-learning.

1. Introduction

Distance learning/education is not a totally new concept (Robinson and Bawden, 2002) and has been in existence for almost a century (Wang and Liu, 2003; Rao, 2006). According to several proposed definitions (Ranson, 1994; Edwards, 1997; Raymond, 2000; Roffe, 2002; Wang and Liu, 2003; Turk, 2006) distance learning refers to any learning in which participants are at a distance from each other (e.g. are not at same place at same time). Distance learning concept has undergone several changes during its existence (Raymond, 2000; Martey, 2004). The very first distance education was through printed and written correspondence (i.e. traditional mail). In last couple of decades advancement in modern ICT has enabled evolution/emergence of electronic learning (e-learning) (Roffe, 2002; Lee et al., 2007; Learning Online, 2008). E-learning typically involves the use of ICT and computers to support learning (Raymond, 2000; Roffe, 2002; Learning Online, 2008). ICT is therefore a central construct which enable and/or support the process of e-learning. E-learning has made a remarkable progress in last two/three decades (Rao, 2006) and represents a great proportion in distance education. In our paper we are focusing on e-learning.

In comparison to traditional learning (i.e. face-to-face learning), e-learning represents a radical change in learning paradigm (Evans and Fan, 2002; Lee et al., 2007), which has influenced various fields in the problematic of e-learning. Due to the use of modern ICT and computers in e-learning process participants need (also) a sufficient level of skills and knowledge for working with modern ICT and computers. Due to the changed nature of e-learning also materials and literature are changed (Robinson and Bawden, 2002; Wools et al., 2002). Another important consideration is also personal characteristics of participants who participate in e-learning process and participants' readiness and interest for such a (changed) way of learning.

Participants' success in e-learning process depends on multiple interdependent factors (e.g. technology, course materials, and participants' personal characteristics) (Wools et al., 2002; Lee et al., 2007; Online Learning, 2008). According to above present problematic of e-learning most important considerations are especially: (1) technical point of view (e.g. hardware and/or software for supporting e-learning) and; (2) appropriate participants' characteristics that contribute to success in an e-learning process. A lot of emphasis in literature about e-learning is devoted to technical point of view (i.e. Roffe, 2002; Wang and Liu, 2003), but on the other hand researchers devote less attention to research participants' characteristics and their interest for participation e-learning process (see: Bose, 2003; Gőnc, 2006).

Purpose of our discussion is to highlight the importance and role of participants' personal characteristics in e-learning process. From the whole problematic of e-learning, we are turning our focus especially on participants' characteristics that contribute to success in the process of e-learning. According to several most common emphasized (needed) personal characteristics (e.g. self-discipline) of e-learning participants, we conduct the survey in which we compared and examine students' personal characteristics which have a possibility to participate in e-learning process. Paper also provides empirical findings from survey about students' personal characteristics.

Participants in e-learning process have different set of personal characteristics. From this point of view, some participants are more suitable for participation in e-learning process and have more prospects to succeed in e-learning process. On the other hand some participants have fewer prospects to succeed in e-learning process.

This paper provides suggestions which are (selected) important personal characteristics of participants' that contribute to success in e-learning process. Participants' characteristics, considered as most important that contribute to success in e-learning process, are a starting point and/or basis for self-evaluation test. Potential participants in e-learning process could evaluate their personal characteristics and (selected) important characteristics for participation in e-learning process, which contribute to success in e-learning process.

2. E-learning

Prefix "e" occurs in many occasions nowadays (i.e. e-business, e-learning) (Roffe, 2002). E-learning is rapidly growing as an acceptable way of education. Remarkable progress has been made in e-learning in couple of last decades (Raymond, 2000; Rao, 2006). A very simple definition defines e-learning as a learning which is supported and/or made possible by the use of modern ICT and computers (Hoppe and Breitner, 2003; Lee et al., 2007; Learning Online, 2008). E-learning is also defined as usage modern ICT to deliver learning and training programs (Newman, 2008).

Authors propose different typologies/formats of e-learning (Raymond, 2000; Bose, 2003; Learning Online, 2008). A common characteristic of all formats is use of ICT and internet to support and deliver instruction (Learning Online, 2008). Several different formats of e-learning are (Robinson and Bawden, 2000; Roffe, 2002; Bose, 2003; Turk, 2006; Learning Online, 2008):

- Web supported – a e-learning format which is complementary to traditional (face-to-face) learning process, where all participants are collocated (class sessions are held in the same place and at the same time). There is a Web site (i.e. portal for distance education) for the class that contains course materials, assignments, goals, exercises and short tests;

- Blended or mixed-mode e-learning – course is structured so that part of the class sessions are held in a traditional (face-to-face) setting and part of them are held with usage of modern ICT over internet. Thus mixture of face-to-face mode (traditional learning) and distance mode (e-learning) has become very popular in nowadays education processes. In face-to-face learning participant (i.e. student) establish a rapport with educator and get clear instructions how to study in distance mode (i.e. submitting of assignments). Many universities have converged to mixed-mode of education (few class sessions, assignments are done and submitted via e-learning);

- Fully online e-learning format – every class session is held in distance mode in comparison to previously mentioned formats, when face-to-face mode is complementary with distance mode.

Most of the possible benefits emphasized in literature are benefits for participants (e.g. students) in e-learning process (See: Wools et al., 2002; Robinson and Bawden, 2002; Global courseware, 2008; Worldwide learn, 2008). Some possible benefits for participants are following:

- Flexibility – because it is possible to attend class and/or using e-learning portal (e.g. making homework) when it is convenient for participant (24 hours per day and 7 day per week);

- Accessibility – participants in e-learning process are not collocated anymore (same time/same place). Participants from various geographic regions can attend to a class which is not locally available. This also lead to reduced travel costs and lost time due traveling;

- Own pace of study – participant can set their own pace of study and can adjust the pace of study to other obligations (e.g. family, work, sport). Participants are not anymore bind to semesters and strict timetables;

- Accommodation of different learning styles of participants through different activities – because for example some participants prefer studying with help of multi-media and other prefer studying with reading text materials.

Benefits of e-learning are also for teachers and establishments (providers of e-learning) (Newman, 2008; E-learning guru, 2008). Most common benefits for teachers are reduced amount of administration and reuse of

materials prepared for a course. For providers of establishments is important benefit global presence and therefore reduced costs for delivering courses and increased number of participants attending in e-learning process.

On the other hand e-learning has also some possible disadvantages. Most common disadvantages from participant point of view are (Wools et al., 2002; Robinson and Bawden, 2002; Newman, 2008):

- Feeling of isolation – participants may feel isolated from their teacher and/or class mates, because there are no physical contacts among participants;
- Technology issues – participants must have a computer with access to internet and other adherent equipment (e.g. printer, loudspeakers). In some places are internet connections inappropriate (e.g. lack of broad band internet). Slow internet connection could cause frustrations;
- Basic computer skills – participants in e-learning must have sufficient level of skills and knowledge how to use modern ICT and computers. Some peoples have phobias concerning using computers and modern ICT. Management of computer files and online software may be difficult for some participants;
- Lack of self-discipline and self-motivation – participants with lack of motivation and/or lower lever of self-discipline may fall behind;
- Problems and open dilemmas about most appropriate method of evaluating participants' work/success in e-learning process.

Possible drawbacks are also for teachers and e-learning providers (E-learning guru, 2008; Newman, 2008). Most common drawback for teachers are very time consuming preparation of course content and course materials and course materials need to be updated often and can not be used for a long period.

Different educators (authors) have different opinions about relevance and/or importance of e-learning in comparison to traditional (face-to-face) learning process (i.e. Gönc, 2006; Rao, 2006; Turk, 2006). Therefore on one hand e-learning has become almost an adequate way of learning in comparison to traditional learning (Rao, 2006). Especially in modern (developed) world e-learning is very valuable way of distance education. But on the other hand in comparison to traditional learning is e-learning significantly different (Robinson and Bawden, 2002; Bose, 2003; Gönc, 2006), because e-learning is not just a traditional education process, which is supported with modern ICT and computers (See: Gönc, 2006; Turk, 2006).

Physical distance among participants in learning process is most significant difference which distinguishes traditional (face-to-face) learning and e-learning (Robinson and Bawden, 2002). In traditional learning process all participants are collocated (same place/same time) but in e-learning process are at physical distance. Therefore the possibility for social interaction among e-learning participants (e.g. student - teacher) is reduced. Shift in learn paradigm (Lee et al., 2007) also influenced the form/type of materials which are used in e-learning process (Robinson and Bawden, 2002) and the role of teachers and libraries in e-learning process (Wools et al., 2002).

Important issue which is somehow neglected in literature is also participants (personal) characteristics. In comparison to traditional (face-to-face) learning process in e-learning process participants need or/must have several characteristics that contribute to success in e-learning process (Wools et al., 2002; Bose, 2003; Learning Online, 2008).

3. Participant's characteristics – a case study

Participants' success in e-learning process depends on multiple interdependent factors (e.g. technology, course materials, participants' personal characteristics) (Wools et al., 2002; Lee et al., 2007; Online Learning, 2008). For the purpose of our discussion we are focusing on participants' characteristics. Traditional (face-to-face) learning process and e-learning process differs significantly. Due to the changed nature of e-learning process (e.g. physical distance, home-working) is also important that participants possess and/or have characteristics which are basis for success in e-learning process. In current chapter we are presenting several possible needed participants' characteristics from theoretical point of view, which could contribute to success in e-learning process. At the end of the chapter we present results from survey about needed characteristics among undergraduate students.

According to presented starting points we assume that participant characteristics is a partial characteristic (and/or part of complex characteristic) which importantly influence success in e-learning process. Most probable

and possible participants' characteristics needed to succeed in e-learning process are (Robinson and Bawden, 2002; Bose, 2003; Learning Online, 2008):

- Level of skills and knowledge for working with computer and ICT – since e-learning is supported with modern ICT and computers, participants need sufficient/appropriate level of skills and knowledge for working with computers and modern ICT;
- Self – motivation and motivation for learning – due to the nature of e-learning (i.e. physical distance among participants and educator), participant need to independently direct their learning;
- Self-discipline – participants in e-learning process must be aware, that they are responsible for their performance. They have much freedom, with certain limits (e.g. semester), to set their own pace of study. Participants in e-learning must also be very autonomous and be able to act independently;
- Attitudes towards e-learning – participants must be interested in participation in such a way of education;
- Attitudes towards usage of e-literature – participants must have positive attitudes towards usage of e-literature, because almost all materials are online and in electronic version. Also tests and assignments must be done with computer and submitted via internet;
- Feeling of isolation – participants with positive attitudes towards home working (or in general at distance) will perceive e-learning as excellent way of learning. On the other hand participants with higher needs for social interaction and personal contact may experience e-learning as very boring;
- Independence – participants must have ability to work well with minimal structure (e.g. few instructions are offered to participants);
- Good thinking skills – participants must be able to use higher-order thinking (e.g. synthesis, evaluation), especially due to the lack of interaction with lecturer and peers.
- Good problem solver – participants must be able to resolve problem mainly on their own, because it is difficult to get a tip from a peer whom you do not know (trust could become an issue). On the other hand participant has possibility to get in contact with lecturer but it is maybe very time consuming.
- Good time manager – participant in e-learning process must manage its time very well. Participant must be able to develop a schedule, establish goals and meet due dates.

We emphasized most probable and possible participants' characteristics needed to succeed in e-learning. For the purpose of our discussion we conducted a research. We examined students' characteristics and analyze them according to previously emphasized (most probable and common) participants' characteristics, which could lead to success in e-learning. In research we also ask participants how important are different values for them. Participants evaluated importance of selected value on Likert's scale, from 0 (value is not important) to 5 (value is very important). In discussion section we will discuss results from survey into more details.

The research about e-learning was conducted among undergraduate students (2nd and 3rd year of study) at the Faculty of Economics and Business, Maribor, Slovenia. Primary aim of research was to examine students' attitudes towards e-learning. For the purpose of our paper focus was on students' characteristics, which are considered as a basis for success in e-learning process. Among 177 answered questionnaires, 155 questionnaires were completed and therefore usable. Due to the limited space and according to emphasized participants' characteristics we present some findings from research about participants' characteristics:

- Attitudes towards usage of modern ICT – some general findings from research are: (1) All 155 participants in research has a computer at home, use internet for studying purpose and has at least one active e-mail address; (2) most of students use computers everywhere (e.g. at home, at public places, in library); (3) 98.1 % of students use portal for distance education; (4) 87.7 % of students are using student's forum; (5) 60% of students in research using their self-phone mainly for calling and also for writing short messages, and also 38 % students use WAP services; and (6) 98.7 % of students think, that use of e-literature in traditional education process will enrich traditional education process. Participants in research have very positive attitudes towards usage of modern ICT. Participants were asked to evaluate the importance of value – usage of modern ICT on Likert's scale. For 80 % of participants in research the value – usage of modern ICT is important (grade 4) and very important (grade 5). Therefore we can conclude that usage of modern ICT among participants in research is relatively high;
- Skills and knowledge for working with modern ICT and computers – students were asked to evaluate their knowledge and skills for working with computer and modern ICT, on Lickert's scale, from 0 (very poor) to 5 (excellent). 50.3 % of students asked, evaluate their knowledge and skills for working with computer and modern ICT as very good (with grade 4), 35 % as good (with grade 3) and 10.3 % as excellent (with grade 5). Therefore we can assume that student's knowledge and skills for working with computer and modern ICT are relatively good, because more than 95 % of student evaluate their knowledge and skills for working with computer and modern ICT as good or even better (as very good and excellent);

- Motivation for studying – participants evaluated their motivation for studying on Likert's scale, from 0 (very low motivation) to 5 (very high motivation). More than a half of the participants (52 %) are moderately good motivated for studying (grade 3). Another 28 % of students are high motivated (grade 4); just 7 % of students are very high motivated for studying;

- Self-discipline – we consider self-discipline as a value. Therefore participants were asked to evaluate importance of self-discipline on Likert's scale from 0 (not important) to 5 (very important). Almost half of participants (49 %) evaluated self-discipline as important (grade 4) and almost 20 % evaluated self-discipline as very important. Only a few (4 %) participants evaluated self-discipline as not important value.

- Interests for participation in e-learning process – participants were asked if they are willing to participate in e-learning process (online class). More than 90 % of asked students are interested in e-learning. Suitability of e-learning is importantly dependent upon students' readiness and/or interest for participation in such a way of education. Therefore just asking question if some is ready and/or interested to participate in e-learning process is too simplistic approach (view).

- Usage of e-literature – another important field is literature. Due to the nature of e-learning process the literature is mainly in electronic form (e.g. pdf format). Participants were asked if they would like to use e-literature instead of traditional literature (e.g. hard copy books, notes). 76 % of asked participants are interested to use e-literature other are more interested in traditional literature. Participants choose among 10 options what a good e-literature is. According to finding from research good and/or appropriate e-literature must be especially easy to use (36 %) and understandable to students (37 %). Less important characteristics are: clearness of text (11%), good appearance (2 %), interactive test for reiteration (3 %), entertaining content (2 %), quotation of references for additional study literature (2 %), etc;

- Feeling of isolation – due to the nature of e-learning, participants are at physical distance. In research participants were asked if they would miss social interaction with peers and teacher if they participate in e-learning process. On Likert's scale participants decided/evaluated if they would not feel very lonely (0) or if they would feel very lonely (5). Only 13 % of students won't be missing social interactions with their peers and teachers. On the other hand 26 % of students will miss social interaction very much. But the majority of students (around 60 %) is more close to the extreme where students preferring social interaction with their peers and teachers. Another question was asking about how important is for an individual person the sense of belongingness (as a value) to a group and/or team. Most of the participants in research (more than 80 %) emphasized that sense of belongingness is very important to them.

Selected participants' characteristics, which could lead to success in e-learning process, were emphasized and empirically tested. According to the results from the research and our experience from practice we are suggesting and/or proposing a set of common personal characteristics, which a participant in e-learning process should have and/or are needed for participants' success in e-learning process. Proposed set of personal characteristics can be used to evaluate participants' suitability for incorporation in e-learning process.

5. Discussion

In following section we are focusing on participants' characteristics and its importance and influence on participants' success in e-learning process. Neither a cutting edge technology is not enough (and/or is not a guarantee) for success in e-learning process.

Participants in e-learning process have different set of personal characteristics, as we defined above. From this point of view, some participants are more suitable for participation in e-learning process and have more prospects to succeed in e-learning process. On the other hand some participants, according to their set of personal characteristics have fewer prospects to succeed in e-learning process.

For positioning (potential) participants of e-learning process, according to their personal characteristics, we defined a continuum. On one extreme are participants who have very favorable characteristics and therefore good prospects to succeed in e-learning process; on the other extreme are participants, who have less favorable characteristics and therefore fewer prospects to succeed in e-learning process.

Participants who have good prospects to succeed in e-learning process should have following personal characteristics:

- Very positive attitudes towards usage of modern ICT – because ICT is a central construct and a basis for e-learning process existence and/or operation, participants must have very positive attitudes towards usage of modern ICT. Therefore positive attitudes towards modern ICT are almost prerequisite for participation in e-learning process;

- High level of skills and knowledge for working with modern ICT and computers – because e-learning process is mainly computer-mediated, participants need appropriate and/or sufficient level of skills and knowledge for working with ICT and computers. Therefore sufficient level of skills and knowledge is a prerequisite and basis for success in e-learning process;

- High motivation for studying – participants with higher motivation have good prospects for succeed in any (e.g. traditional, e-learning) type of learning. Due to the lack of social interaction with lecturer in e-learning process is especially important participants' self-motivation;

- High level of self-discipline – participants in e-learning process can set their own pace of study. Assignments needs to be done in e-learning process, no mater when and where. Participants have a lot of freedom on one hand, but on the other hand participants must be very self-disciplined in order to succeed in e-learning process;

- High interest for participation in e-learning process – participants with higher interest for participation in e-learning process have more prospects to succeed;

- Very positive attitudes towards usage of e-literature – a great proportion of literature in e-learning process is in electronic form. Participants who like to use mainly e-literature in comparison to traditional literature (e.g. hard copy books) are more suitable for e-learning process;

- Low need for social interaction with peers – participants in e-learning process almost never meet face to face. Therefore participants who have low need for social interaction with peers are very suitable for participation in e-learning process.

On the other hand, participants who have fewer prospects to succeed in e-learning process have mainly following personal characteristics:

- Very negative attitudes towards usage of modern ICT – participants are not very keen to use modern ICT and rather avoid its usage. Therefore they are not very suitable for participation in e-learning process;

- Low level of skills and knowledge for working with modern ICT and computers – could become a serious obstacle for participants in e-learning process, since e-learning process is computer-meditated. Participants with lower level of skills and knowledge for working with modern ICT and computers could experience serious troubles in e-learning process;

- Low motivation for study – participants with low motivation for studying are less suitable especially for participation in e-learning process, where is no direct supervision of a lecturer;

- Low level of self-discipline – is probably one among most important obstacles in e-learning process. Participants who are not able to establish appropriate balance between study and other obligations (e.g. work, leisure) are not suitable for participation in e-learning process. Lack of self-discipline is even more obviously seen in e-learning process in comparison to traditional learning process;

- Low interest for participation in e-learning process – participants with low interest for e-learning could have difficulties. This could leads to poor results;

- Very negative attitudes towards usage of e-literature – participants who prefer traditional literature (e.g. hard copy books) may have difficulties in using e-literature. This could lead to poor results in e-learning process;

- High need for social interaction with peers – participants who prefer social interaction with peers could experience very severe experience in e-learning process (e.g. felling of isolation). Therefore participants, who prefer social interaction and face-to-face contacts with peers, are not very suitable for participating in e-learning process.

Determined personal characteristics which could importantly influence participants' success in e-learning process could be used also as a self-evaluation test. Potential participants who are interested in participation in e-learning process can determine their suitability for such a way of learning. On the other hand also providers of e-learning could determine suitability of potential participants according to selected set of personal characteristics.

With our discussion we are re-opening (again) the question about the importance of participants' characteristics in e-learning process. The filed of participants' characteristics is often neglected in literature about e-learning and is not often discussed, especially from practical point of view.

6. Conclusion

During last couple of decades, e-learning has become an important way of education. In our paper we examined a problematic of participants' characteristics and its importance for success of e-learning, which is somehow neglected in the literature about e-learning. In our research we emphasized possible and probably most common participants' characteristics which are a basis for success in e-learning process. According to

selected characteristics we conduct a research, which primary aim was to examine students' characteristics and to highlight the role and importance of personal characteristics in e-learning process. Participants' characteristics importantly influence success in e-learning process. With the paper we make a contribution to understanding the role and importance of participants' characteristics for the success of e-learning process.

We limited our research only one among important field, which greatly influence participants' success in e-learning process. In long run, a longitudinal study could be made in which we can examine the impact of different participants' characteristics and its impact on a participants' success in e-learning process.

Proposed set of needed personal characteristics could be used for evaluation of suitability of potential participants for e-learning. Participants could make a self-evaluation to see if their personal characteristics match with proposed personal characteristics, which contribute to success in e-learning process. On the basis of the self-evaluation test potential candidate can make decision about participation in e-learning process.

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