UNIVERSITY STUDENTS' ATTITUDES TOWARDS E-LEARNING

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ABSTRACT

Background. E-learning is a new paradigm of modern teaching methods. The aim of the paper was to reveal the university students' attitudes towards e-learning.

Methods. Research sample involved undergraduate (first cycle) and postgraduate (second cycle) students of three different universities, 156 men and 278 women. Questionnaire was comprised of 60 questions and statements.

Results. Research reveals that 40% of undergraduates and 42% of postgraduates positively treat e-learning as the method of study content presentation; 23% of undergraduate and 38% postgraduate students believe that study content presented in e-learning environment helps them focus attention; 61% of the undergraduates and 59% of postgraduate students claim that materials accessible in e-learning environment are relevant to their studies. Even 37% of undergraduates and 34% of postgraduates are completely satisfied with their study results achieved by studying materials presented in e-learning environment. Attitudes of male and female students and students from different universities differ significantly ($p < .05$). About 40% of undergraduate and 36% of postgraduate students believe that studying via e-learning is easier than studying based on traditional methods, 48% and 44% respectively think that it is harder. The majority, i.e. 59% of undergraduates and 52% of postgraduates, prefer blended learning methods. About 42% of first cycle students and 43% of second cycle students disagree or partly disagree with the claim that studies via e-learning and studies based on traditional methods do not differ in respect of their quality; 38% of undergraduate and 42% of postgraduate students believe that e-learning and traditional methods lead to the acquisition of the same competences. Students who have part-time jobs and students who have full-time jobs have significantly different ($p < .05$) attitudes towards competences acquired via e-learning and via traditional methods. The opinion that the same competences are acquired via e-learning and via traditional methods is more common among full-time workers. Students (45% of undergraduates and 37% of postgraduates) tend to believe that in the e-learning environment studies were organized as professionally, qualitatively and effectively as studies based on traditional methods. This view is opposed by 22% of undergraduate and 30% of postgraduate students.

Conclusions. Students treat traditional ("live") lectures more favourably than autonomous studies in the e-learning environment. They tend to believe that the blended learning method is the most acceptable. Male students' and female students' attitudes towards study results in the e-learning environment differ significantly. The majority believe that competences acquired via e-learning and the ones acquired via traditional methods do not differ.

Keywords: undergraduate students, postgraduate students, e-learning, traditional study methods.

INTRODUCTION

E-learning is one of modern education methods revealing the main vector of technological progress and tendencies of human behaviour in the age of the vehement technological advance (Calli, Balcikanli, Calli, Cebeci, & Seymen, 2013). Learning via application of modern information and communications technologies (ICT) can be characterized by various concepts (Butrimė, 2011). This is partly due to the technology applied as well as to the educational paradigms on which elaboration and implementation of digital learning tools is based. However, in the documents of the European Commission, this method of learning is identified as e-learning (EFQUEL, 2007).

Thus, the present paper will use the concept of e-learning as the one which distinguishes the learning process where different types of ICT and digital information sources are used to promote efficiency, quality and accessibility of the education process.

In the context of the constructivist learning paradigm, apart from the content and technology, the process and its participants are the other two important factors, and they are even foregrounded as the essential dimensions in the process of quality evaluation (Ehlers & Pawlowski, 2006).

Today e-learning is based on the ideas of constructivism and connectivism, although, in the scientific literature the composite method is considered as the most progressive method of learning. According to the constructivist approach, learning person's consciousness encompasses and synthesizes different elements of previous experience and educational processes, in addition to this, it is claimed that previous experience is the basis for the formation and systematization of knew knowledge. According to connectivism, learning is combining appropriate (relevant) information gained from different sources (Siemens, 2004). For this purpose, the ICT and digital information sources are indispensable.

The results of scientific studies reveal a wide variety of students' attitudes towards e-learning. Swanson (2014) found that the majority of undergraduate students tended to seek factual information in the Internet, and only about 27% of them tended to use any type printed text as a source in their studies. Meanwhile, Chou (2012) studied the screen reading habits and found that postgraduate students no longer preferred reading a text on a computer screen when they needed to examine the text carefully because they lacked possibilities of highlighting, underlining, and noting – i.e. all these functions possible while using printed texts.

The approach towards e-learning tools depends on previous application experiences. For example, Ainsa (2015) found those students who used e-learning tools 10 or more hours a week preferred e-materials to traditional printed texts, i.e. they were better adapted to the digital media. Research shows that proper preparation of e-learning tools contributes to the realization of the constructivist learning model with the emphasis on the learner and their needs (Dumčienė, Sipavičienė, (2010). Friesenbichler (2011) notes that we should carefully assess whether e-learning offers many opportunities to meet general principles of teaching and learning highlighted in the strategic documents of universities. While it is important to strengthen the role of e-leaning as a tool to "boost" quality of higher education, we need to be sure that e-learning itself meets certain quality requirements.

Kılıē-Ēakmak, Karataş, and Akif Ocak (2009) emphasize the main factors that predestine the effectiveness of e-learning – i.e. disintegration of attention in e-learning, no working habits in the evening hours, increasing responsibilities and demanding self-regulated learning, seeing themselves as teacher, and failure to follow a strict timeline to work and do homework. Students prefer more "live" consultation and regret the lack of timely feedback. Nevertheless, they treat chat sessions quite ambiguously, in part, with view to the schedule of these sessions. Study performed by Calli et al. (2013) showed that students positively evaluated such factors of e-learning as fun, easiness of the application of its content, and effectiveness (in respect to the target outcomes of studies).

The aim of the paper was to reveal the university students' attitudes towards e-learning.

METHODS

In the research, a questionnaire consisting of 60 questions and statements was applied. The first part of the questionnaire was comprised of socio-demographic questions. The second part of the questionnaire was designed to reveal students' attitudes towards study materials presented in the e-learning environment (11 claims). The Likert scale (a 5 point scale), where 1 means "strongly disagree" and 5 – "totally agree", was used to assess students' responses to the claims of the second part of the questionnaire. In the third part of the questionnaire, a version of ARCS Model JM Keller questionnaire (Keller, 1987; 36 claims) was applied. Responses were assessed using a 5-point Likert scale, where 1 means "completely disagree", 2 – "disagree", 3 – "neither agree nor disagree", 4 – "agree", 5 – "strongly agree". Questions of ARCS questionnaire comprised four groups: the first aimed at the concentration of attention (12 items), the second – at relevance (9 items), the third – at reliance (9 items), and the fourth – at satisfaction (6 items).

Finally, the fourth part of the questionnaire was composed to reveal students' views on e-learning (7 questions and statements).

1. "Is distance learning easier or harder than traditional studies?" Answers were assessed

using a five-point Likert scale, where 1 means "is harder than the traditional", 2 – "partly harder than the traditional" "3 – "equally hard", 4 – "partly easier than the traditional", 5 – "easier than the traditional".

2. "Which form of education is the most attractive?" Answer options: a) "Studies in the classroom when a teacher says what must be done", b) "Studies in classroom when one listens, writes, and then studies more deeply by themselves"; c) "Distance e-learning courses when one independently studies materials prepared by the teacher completing tasks at the convenient time"; d) "Individual tasks" e) "Live lectures and then studying the learning materials in the e-learning environment".
3. "Which model of distance learning is the most attractive?" Response options provided: a) "synchronous (students and teachers are involved in the study process at the same time)"; b) "asynchronous (students and teachers participate in the educational process at different times)"; c) "mixed" and d) "other".
4. "How do you assess the quality of distance learning compared to traditional studies?" (4 statements).
   4.1. "In respect to quality, scope, content and requirements e-learning does not differ from traditional study programs."
   4.2. "E-learning ensures the same competencies as traditional studies."
   4.3. "Do information technologies facilitate communication between student and teacher?"
   4.4. "E-learning environment studies are organized professionally, qualitatively and effectively as traditional studies."

Statements were assessed using a five-point Likert scale, where 1 means "do not agree", 2 – "partly disagree", 3 – "neither agree nor disagree", 4 – "partly agree", 5 – "agree with the statement".

Before each survey the students were explained the research purpose and filling instructions, the study ensured anonymity and opportunity to refuse to participate in the survey. All the students participated in the research voluntarily and were aware of the confidentiality of the research data. Research was carried out following the principles of the Declaration of Helsinki.

Research sample. The social science students from three different universities of Kaunas were the participants of the research.

X University students were selected using a convenience-sampling method; 434 completed questionnaires suitable for analyses were collected. All in all, 156 male (36%) and 278 female students (64%) were interviewed; 337 (77.6%) undergraduate (first cycle) students and 93 (21.4%) postgraduate (second cycle) students participated in the interview; 4 questionnaires (0.9%) did not provide the study level. Respondents' average age was 22.3 ± 4.35 years. With respect to employment (occupation), respondents dispersed as follows: 101 (23.3%) reported that they were studying and had a full-time job; 157 (36.2%) stated that they were studying and had a part-time job; 161 (37.1%) indicated that they were only studying; 13 respondents (3%) indicated that they were engaged in other activities (the most common were sports training and volunteering); 2 respondents (0.5%) did not specify their occupation.

Y University students were selected for the interview using convenience-sampling method. Only 80 filled in questionnaires were suitable for further analysis. This respondent group included 11 (13.8%) male and 69 (86.3%) female students. The average age of respondents was 20.48 ± 2.19 years. Most of the respondents (74 or 92.5%) were undergraduate students, the rest (6 or 7.5%) were postgraduate students. With respect to employment, respondents dispersed as follows: three respondents (3.8%) reported that they were studying and working full-time; 17 (21.3%) indicated that they were studying and working part-time; 59 (73.8%) indicated that they were studying only; 1 respondent indicated to be engaged in other activities.

Z University students were selected using, as in previous cases, a convenience-sampling method. Only 87 questionnaires suitable for further statistical analysis were received. In this group, there were 16 (18.4%) male and 71 (81.6%) female students. Respondents' average age was 19.43 ± 3.06 years. All respondents indicated to be undergraduate students. With respect to employment, dispersion of respondents was as follows: three (3.4%) reported to be studying and working full-time; 11 (12.6%) indicated to have part-time jobs and to study; 73 (83.9%) indicated that they were studying only.

Statistical methods. The data was processed using IBM SPSS V.20 program. In data processing, descriptive and nonparametric statistics was applied: Chi-square, Mann-Whitney and Kruskal-Wallis tests. The 95% ($p < .05$) confidence

interval was chosen in the research. Cronbach's alpha coefficient in the part of the questionnaire (11 questions) aiming at collecting information about study materials presented in e-learning environment was .889. Cronbach's alpha coefficient in the standardized ARCS model (36 questions) was equal to .895. Cronbach's alpha coefficient in the remaining part of the questionnaire (7 questions and statements) was .693. Cronbach's alpha coefficient of the entire questionnaire was equal to .927.

Factor analysis in the second part of the questionnaire ("Study materials presented in the e-learning environment are …") allowed distinguishing two factors. The value of Kaiser-Mayer-Olkin test was .925; *p*-value of the Bartlett's sphericity test was .0. The following factors were distinguished: 1) suitability of study content; 2) form of study content presentation. The factors were evaluated on a scale from 1 to 5, where 1 means "very bad", 2 – "bad", 3 – "neither bad nor good", 4 – "good", 5 – "very good".

RESULTS

Research reveals that undergraduate and postgraduate students, irrespective of their employment, treat suitability of study content in a similar way; there were no statistically significant differences between students who had full-time jobs and the ones who had part-time jobs ($p > .05$). Even 39% of students from X University, 45% of students from Y University and 45% of respondents from Z University reported the suitability of study content presented in the e-learning environment to be very good or good. Attitudes of social science students from different universities towards the suitability of study content presented in e-learning environment differed significantly ($p < .05$).

Evaluating the form of the e-learning content presentation, 40% of undergraduate and 42% of postgraduate students expressed opinion that content presentation was good or very good, while 42% of undergraduate and 34% of postgraduate students reported it to be bad or very bad. With respect to employment, respondents' opinions differed as follows: 43% students who had full-time jobs assessed the presentation of study materials as very good or good; 39% of part-time workers reported that the form of study materials' presentation in the e-learning environment was very good or good; 39% of nonworking students rated the form of study content presentation as very good or good. There were no statistically significant differences in the evaluation of the form of study materials' presentation in respect to study cycle and having a job (full-time, par-time, $p > .05$). Even 63% of students from Z University, 39% of students from Y University and 35% of students from X University gave the highest ratings to the form of study materials' presentation in the e-learning environment. Attitudes of social science students from three universities toward the form of study materials' presentation in the e-learning environment differed statistically significantly ($p < .05$).

The study revealed that 23% of undergraduate and 38% postgraduate students agreed and 9% of undergraduate and 15% of postgraduate students did not agree that study materials' presentation in e-learning helped to focus attention. With respect to the study cycle, employment and university attended, there were no statistically significant differences in students' opinions whether study materials presented in the e-learning environment helped them focus attention ($p > .05$).

Distribution of students' evaluations of the relevance of study materials presented in the e-learning environment is shown in Figure.

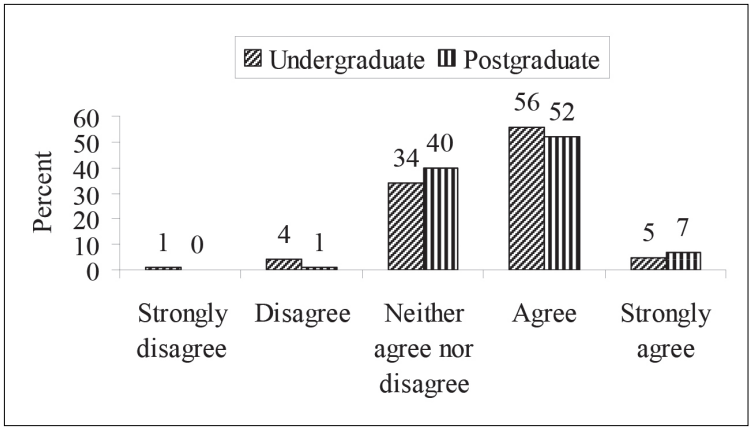

Figure. **Distribution of undergraduate and postgraduate students' evaluations of the relevance of study materials presented in the e-learning environment**

Attitudes towards the relevance of study materials presented in the e-learning environment did not differ significantly in respect to the study cycle, job involvement, or the university attended ($p > .05$).

Research showed that 33% of undergraduate and 36% postgraduate students trusted the study materials presented in the e-learning environment. Only 11% and 9% respectively expressed distrust in such materials. Only 10% of undergraduates did not trust and only 1% absolutely did not trust study materials presented in the e-learning environment. There were no statistically significant differences between students' opinions with respect to their study cycle and employment ($p > .05$). Even 32% of students from X University, 48% of students from Y University, and 15% of students from Z University admitted that e-learning environment and the materials presented there fostered confidence. Only less than 10% of students from these universities did not agree to it. Nevertheless, evaluations of students from different universities differed significantly ($p < .05$).

We found that 37% of undergraduate and 34% of postgraduate students were satisfied or fully satisfied with the learning outcomes studying the materials presented in the e-learning environment. The assessment of students' satisfaction with the outcomes did not provide statistically significant differences with regard to the study cycle or employment ($p > .05$). Research results showed that male students more enjoyed e-learning than female students. Male students wanted to have more study subjects in the e-learning environment. With respect to gender, opinions about satisfaction with study outcomes in the e-learning environment differed significantly ($p < .05$).

Research data concerning students' opinions about the effectiveness of different learning forms is presented in Table.

Thus, majority of students from different universities shared the opinion that the most effective learning form was studies in the classroom when the teacher gave lectures and tasks to perform. This opinion was shared by 74% of X University students, 80% of Y University students, and 80% of Z University students. Only 19% of X University, 11% of Y University and 14% of Z University students replied that they preferred lectures paralleled with studying materials in the e-learning environment. According to respondents, individual learning was the worst learning method. Nevertheless, differences in the opinions of students from different universities were not statistically significant.

In our study, 59% of undergraduate and 52% of postgraduate students identified blended learning as the most fascinating. Asynchronous mode of learning in virtual environments looked fascinating to 27% of undergraduate and 33% of postgraduate respondents. There were no statistically significant differences in respect to study cycle and employment ($p > .05$). More than half of respondents from different universities identified blended distance learning as the most attractive. Even 57% of X University students, 53% of Y University students, and 55% of Z University students would chose individual learning with a strictly limited number of contact hours.

Research showed that 42% of undergraduate and 43% of postgraduate students disagreed or partly disagreed with the statement that with respect to its quality, scope, and requirements, studies in the e-learning environment did not differ from traditional studies. Only 28% of undergraduate and 32% of postgraduate students agreed or partly agreed with this statement. Assessing study outcomes, there were no statistically significant differences with respect to study cycle or to employment ($p > .05$).

Table. **Distribution of students' evaluations of the effectiveness of different learning forms**

Learning form	Undergraduates (%)	Postgraduates (%)
Studies in the classroom when the teacher says what has to be done	43	31
Studies in the classroom when one listens, writes, and then studies more deeply by themselves	34	31
E-learning courses when the teacher prepares reading materials, and students complete tasks at the convenient time	17	28
Individual learning	2	3
Lectures paralleled with studying the materials in the e-learning environment	4	6

Even 38% of the first cycle and 42% of the second cycle students admitted that with respect to the competencies acquired, e-learning was identical to traditional learning methods. This statement was rejected by 39% of undergraduate and 38% of postgraduate students. In this case, the difference in the opinions was statistically insignificant ($p > .05$).

With respect to employment, students' opinions whether e-learning provides the same competencies as traditional learning differed statistically significantly ($p < .05$). Students who had full-time jobs were inclined to think that the same competencies were provided either via e-learning or using traditional methods.

38% of X University students, 43% of Y University students, and 52% of Z University students shared the opinion that both methods – e-learning and traditional learning – ensured the same competencies. Attitudes of students from different universities towards acquired competencies did not differ significantly ($p < .05$).

According to the survey, 49% of undergraduate and 38% of postgraduate students agree that information technology fosters closer collaboration between teacher and student. However, 24% of undergraduate and 32% of postgraduate students disagree with that claim. In this respect, statistically significant differences were not found. However, comparisons of students from different universities showed that their opinions differed significantly ($p < .05$). Even 46% of X University students, 61% of Y University students and 63% of Z University students agreed with the statement that information technology promotes collaboration between teachers and students.

Students (45% undergraduate and 37% postgraduate) tend to believe that in e-learning environment studies are organized as professionally, qualitatively and effectively as in traditional studies. However, the surveyed students' opinions differed insignificantly ($p > .05$); 43% of X University students, 48% of Y University students and 67% of Z University students pointed out that in terms of professionalism, quality and effectiveness, studies in e-learning environment did not differ from traditional studies. Nevertheless, in this respect, attitudes of students from different universities did not differ significantly ($p < .05$).

DISCUSSION

Part of interviewed students pointed out that distance learning was easier; however, another part of respondents thought it was harder. There were no statistically significant differences in all three aspects. After all, it should be noted that the European Union shares general principles which encourage a shift to open education and open education sources (Camilleri, Ehlers, & Pawlowski, 2014). Open internet course is a brand new tendency in nowadays education (Hill, 2012).

According to the survey, more than 50% of respondents prefer blended (integrated) mode of learning. Research performed by Bentley, Selassie, and Shegunshi (2012) emphasized advantages of novel learning method in educational systems of such countries as Great Britain, Germany, France, Poland, etc. We should concede that in these countries there are more technological opportunities to use e-learning method and internet educational sources than in our country. According to Callaway (2012), blended learning is an easiest way to blur boundaries between traditional and innovative education.

It has been found (Taylor & Park, 2014) that nowadays students want e-learning materials to be provided via multimedia (i.e. PowerPoint presentations, video clips, diagrams, audio recordings, etc.). Another aspect of great importance is public attitude toward e-learning.

According to Poulsen, Lam, Cisneros, and Trust (2008), in order to increase attractiveness of e-learning materials, the later should be made (via suitable examples and modelling) more adequate to the practical need of the students. Students tend to believe (Taylor & Park, 2014) that the main factor that determines effectiveness of teaching and learning is relevance of the subject (or lecture theme). In this research, collaboration was given only the tenth place in the top-list. Taylor and Park (2014) emphasize that in the assessment of e-education environment, emotional climate and variety of multimedia tools are the most significant aspects for students today.

Summarizing the results of longitudinal research concerning character and extent of the internet education in United States, Allen and Seaman (2013) claim that in universities and colleges, interest in internet studies even increased during the past decade in comparison with traditional studies. According to their research, 77% leading universities share the opinion that e-learning provides the same or even better results than traditional methods. According to our research, less than a half of undergraduate and postgraduate respondents are satisfied with their e-learning outcomes.

Kransow (2013) point out that satisfaction with e-learning experience encourages students to continue their studies (do not change the study program or even university). Our research makes evident that those students who have full-time jobs are most satisfied with e-learning.

Palmer and Holt (2009) found that students' satisfaction with e-learning was related to the level of technology used. According to our research, students are satisfied with their studies when teachers give lectures and provide e-learning materials for individual work. It was not a task of our research to find out whether this aspect was related to the specific ICT technologies. The same tendencies were identified by other researchers. Among other things, it was found (Morais, Morais & Paiva, 2014) that, in general, quite many students remain sceptical about e-learning and studies using ICT. According to them, educational management systems do provide variety of functions, although, are not properly orientated toward application convenience and user experience.

According to the Cole, Shelley, and Swartz's (2014) research results, among the most important factors related to contentment with e-learning, students identify convenience. Those who were dissatisfied emphasized the lack of interaction between students and teachers as the main cause of dissatisfaction. Our research has revealed that in two universities more than half of respondents were content with educational communication via ICT.

According to Kirby, Sharpe, Bourgeois, and Griene (2010), despite the fact that most students prefer face-to-face learning, they tend to believe that experience gained via e-learning will be useful in the future.

Lambrinidis' (2014) study has shown that integrating video clips, synchronous online tutorials and online discussion groups in e-learning facilitate the use of interactive learning materials, increase its intelligibility and create a stronger bonds between students, teachers and learning material.

Harrison, Gemmell, and Reed (2014) have found that postgraduates who use only e-learning as the main method are, in general, content with their studies. Thus, this method can become a priority in the second cycle studies. This does not contradict to the results of our study. In Omidian and Keyvanifard's (2012) research, postgraduates prefer e-learning because it lessens travel stress and expenses (especially for the working students), therefore e-learning opportunities should be developed in the future.

According to Siemens et al. (2015), properly organized and supported e-learning is associated with lower education costs, efficiency improvements and popularity of study programs (retention of students).

CONCLUSIONS

Working students are more inclined to attend e-learning courses and give higher value to this method, although, irrespective of employment and study cycle, students prefer live lectures to a greater extent than individual studies in e-learning environment. Blended learning seems to be the most acceptable to them.

More than half of respondents share opinion that study materials presented in e-learning environment are relevant, although only about one-third of respondents think that these materials help concentrate attention. The same proportions of interviewed students are absolutely satisfied or satisfied with learning outcomes in e-learning. In terms of satisfaction with learning outcomes in e-learning, attitudes of male students and female students differed significantly.

Less than a one-third of respondents shared attitudes that e-learning did not differ from traditional learning methods in terms of quality, scope, and requirements. There were more respondents who believed that the competencies acquired via e-learning and those acquired via traditional methods were the same. This opinion was common among working students mostly.

With respect to the university attended, students' attitudes whether studies in e-learning environment were organized to the same extent professionally, qualitatively and effectively as in traditional studies, differed significantly.

More students pointed out that application of e-learning method was more difficult than studies via traditional methods.

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