The Aspects of e-Learning Products Quality Estimation

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Abstract. The purpose of the work is to estimate the courses of e-learning in the axiological and motivational aspects. It was noted that the estimating methodologies give too little emphasis on the values of training aspects. The quantitative assessments of the quality of the courses of the e-learning are presented, advanced by experts and the students, who used these courses. The expert and student estimation results did not differ significantly (p> 0.05). Students evaluated courses better on the aspects of the attention concentration, relevance, confidence than on the satisfaction by them.

Keywords: e-learning, e-learning products, quality of e-learning products.

1. Introduction

E-learning at various levels of training (general education schools, colleges, universities and business organizations) are becoming more widely used, but is constantly developed and improved by educational, technological and technical aspects.

2. Related work

The results of e-learning quality research analysis [7] showed that the majority of investigators consider e-learning quality by 2013 to be better than traditional teaching. It was established [8] that even 61 percent of professional users of e-learning systems evaluated the overall quality of e-learning systems negatively - as ‘fair’ or ‘poor’.

According to the respondents [8] the most important criteria in assessing the quality of e-learning should be two: the functioning without problems for consumers, the design principles of a clear educational focus for a certain type of student needs and context.

The analysis [9] of e-learning quality estimation showed that there are used a number of models, but different from each other and with different basic hypotheses in the context of. But in this evaluation of the recommendations the value approach of e-learning quality estimation is missing.

The results [3] of student survey on e-learning quality showed that the spectrum of the students’ requirements for e-learning quality is very wide.

It was proposed [4] e-learning quality estimation model EQL (model for quality assessment of e-learning), covering the ten aspects of the quality is very important in assessing the quality of e-learning: material/content structure/virtual environment; communication; cooperation and interaction; student assessment; flexibility and adaptability; aid (for students and staff); staff qualifications and experience; vision and leadership of the institutional; resource allocation, and the holistic aspects of the process. According to the criteria of the published articles assessment [4], in the year 2006–2007 only two articles were found with the holistic and process aspects analyses.

Learner seeks [6] not only for absorbing the training material, getting a good estimation of its achievements, but also the satisfaction of their achievement. The useful work brings pride and further affects the results. High performance is the reason of complete satisfaction - not the consequence of.

In the above discussed studies the value aspect of e-learning quality estimation is missing.

It was proposed [2] the methodology of the evaluating quality of e-learning products in higher education to the aspect of axiology.
3. Methodology

In 2008 was conducted the expertise evaluation of two e-training courses in two universities in Lithuania, to determine how the authors aim to reflect the distance-learning methodologies and content of education, as well as the courses they are studying, students were evaluated (n = 108) at the end of the semester. The students were asked to evaluate the usefulness of these courses under the motivation of the four criteria: attention, relevance, confidence and satisfaction. The experts from four universities, who have experience in e-course designing and implementation, were invited to perform the expertise. The research employed expert assessment method (10 point scale system) [1] which is based on e-teaching product quality assessment criteria dominant in Lithuania. Nine assessment criteria were distinguished – one value aspect (related to interactivity sustainability seeking for affective (emotional) educational goals and eight criteria reflecting a systemic approach to solving educational problems, appropriately prepared information for the learner about the course (goals and “learning guide”), logical structure of presenting the teaching material, application of virtual learning environment in e-learning, implementation of self-assessment tasks, design elements, forms of intermediate assessment, and validity of methods for evaluating gained competencies. The interactivity elements of e-learning courses, oriented towards the emotional goals of education, were evaluated with regard to the value aspect. For this reason, the assessment included those structural elements of e-learning educational technologies which ensure the interactivity of the course involving acceptance, reaction, evaluation and organization of emotional goals.

4. Research results

The results of e-learning courses expert assessment presented in Fig.1.

The results of expert assessment shows that designing e-learning of pedagogical technologies that are provided in virtual environment, the unsolved or difficult-to-solve problems are reflected by four criteria that received the lowest expert assessment scores: forms of assessing the acquired competencies; purposefulness and meaningfulness of the teaching media; value aspects of the course content and validity of methodology for holistic assessment of the acquired competencies.

![Figure 1. Results of e-learning courses expert estimation](image)

It continues in Fig. 2: A – realization of systemic approach of training tasks (problems); B – quality of the preparation of the self-evaluation tasks; C – logical structuring of the training materials; D – whole relevance of the e-course interface design elements; E – completeness and intelligibility of the information about the course; F – suitability estimation of the competences acquired forms; G – The meaningfulness and expediency of the learning environment used in training courses; H – valuable aspect of the content of courses (Interactivity (relevance, quality) for the implementation of emotional (affective) educational goals, (expressed in the form of affective educational goals)); I – The methodologies reasonableness of the competences acquired in whole estimation (including the value aspect of expression).

The results of e-learning courses students’ estimation is presented in Fig. 2.

![Figure 2. Results of e-learning courses students’ estimation](image)
The results of students’ estimation statistically significant, does not differ from the results of expert assessment (p>0.05), although the average estimate less (5.14) than experts (5.24). The expert and student assessment of the mutual correlation coefficient is r = 0.995. However, some differences of four students on a scale to assess the minimum criteria: valuable course content emotional aspect of the realization of educational objectives; methodologies reasonableness of competences acquired in whole estimation; the training courses, media targeting and meaningfulness; the whole e-course interface design elements of eligibility.

Consequently, the experts and students of the highest point assessed distance learning courses for the training tasks (problems) the realization of a systematic approach, and the smallest point evaluated under different criteria. If the experts most dislike the acquired competences whole feasibility estimation of methodology reasonableness, the students valuable course content emotional aspect of the realization of educational objectives.

The expert and student assessment in essence overlap, so the students competence in assessing the e-learning courses, and good enough in their opinions, so while improving courses it must be taken into account. Students have an opinion that it is most important to improve the emotional aspect of courses. It is especially [5] because for the development of emotional intellect increasing attention is paid.

The students’ estimation of e-learning courses by the aspect of quantifying attention presented in Fig. 3.

Most of the students (56 percent) on the concentration used in the courses evaluated only fair. This can be one of the basic reasons, which weaken student’s e-learning motivation. It was established [10] that 75 percent of the students surveyed indicated that they are disciplined and have sufficient skills in e-learning. However, only 3 percent of them noted that they are motivated in the study of e-learning technologies.

The e-learning courses students’ estimation by the aspect of relevance is presented in Fig. 4.

The vast majority of students (77 percent) evaluated the relevance of course material perfectly.

The e-learning courses students’ estimation by the aspect of confidence presented in Fig. 5.

Many students (72 percent) used for remote-learning courses in confidence as a valued aspect of a very well-trained and perfect.

The use of e-learning courses students quantifying estimation by the aspect of satisfaction presented in Fig. 6.
Most of the students (96 percent) expressed satisfaction by the use of distance learning courses. Most of the courses studied by these students were given the traditional pedagogical techniques to assess the course.

The results of investigating the opinion of students show that with the development of e-courses it is important to consider the principles of pedagogy. This is noted also by the authors of a study [8].

The variety of the criteria of evaluation of the quality of e-courses used hampers the comparison of the results obtained in different studies, but in this case it is possible to assert that the students more positively estimated the quality of e-courses, with exception of the concentration of attention how it is represented in review [8]. The proposed aspects of the estimation of the quality of e-learning products it can supplement the system of criteria, as it is noted in the work [9].

5. Conclusions
1. The aspects of values and motivation are underemphasized in the methods used for quality assessment of e-learning courses.
2. The aspects of values have to be strengthened in the technological tools used for distance education in order to maintain e-learning interactivity and in this way to create distance education environment oriented to individual learning needs.
3. Students evaluated different aspects of e-learning professionally and there is no significant difference between their evaluations and the evaluations given by experts (p>0.05); the correlation coefficient between these two variables r = 0.995.
4. Students gave positive feedback about concentration of attention, relevance and confidence in the distance education courses attended by them. The majority of students were satisfied with their participation in the courses.

6. References