

EÖTVÖS LORÁND UNIVERSITY  
FACULTY OF EDUCATION AND PSYCHOLOGY  
DOCTORAL SCHOOL OF EDUCATION  
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Miklós Kovács

**THE PEDAGOGICAL ASPECTS OF THE QUALITY  
ASSURANCE OF E-LEARNING IN HIGHER EDUCATION**

PhD THESES

Consultant: Dr. Beáta Kotschy, PhD.

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# **The Pedagogical Aspects of the Quality Assurance of E-learning in Higher Education**

## **1. Introduction to the topic of the thesis**

Today social and economic processes are characterized by increasingly rapid changes. As a result of scientific and technological development the previously acquired knowledge becomes out-of-date. Employees must continuously renew their knowledge to obtain or keep their jobs on the market. Lifelong learning is therefore essential, more and more people would like to participate in some kind of training.

The traditional forms of training, which are based on the physical attendance of students, do not meet the expectations of those who would like take part in these trainings. They often do not have enough time to personally participate in consultations due to their commitments at work and in the family. Distance learning based training can solve this problem if it includes the following characteristics:

- it is able to adapt to the schedule of students;
- its curricula can be learnt efficiently;
- its curricula can be quickly distributed in good quality;
- its content can be flexibly revised according to the changing demands.

The trainings which incorporate the above expectations are currently based on the application of ICT (information and communication technologies). The students get the curricula via Internet and they learn independently. If they have any questions or problems they can contact the tutors also via Internet. This kind of education is called e-learning. (In the thesis there is a more exact definition of e-learning.)

E-learning based education and face-to-face training differs from the point of view of methodology, therefore the quality assurance systems of these education forms are also different. Széchenyi István University introduced purely e-learning

based training in 2004. In this thesis, this form of training is examined from pedagogical and methodological aspects. The quality assurance system of e-learning has been developed on the basis of these considerations.

## 2. The aim of the research

The aim of the research is to explore

- the conditions of successful e-learning based education;
- the characteristics conforming to the quality assurance system;
- the opportunities and results for continuous development of e-learning with the assistance of action research.

The research worked out

- the fundamental approaches of selecting the e-learning framework system;
- the practice of how to prepare the students and tutors for e-learning based learning and teaching;
- the principles of how to develop an e-learning based curricula;

Examples will be shown on how e-learning affects face-to-face training.

## 3. Hypotheses and methods of the research

1. **Students have to be prepared for e-learning based education.** This hypothesis is proven on the grounds of literature research.
2. **The preparation for e-learning is possible using e-learning methods.** There is a special subject for preparing students for e-learning. This hypothesis is proven by the analysis of completing this subject. Students' exam results were also examined. The grades indicate that students have learned the methods of independent learning.
3. **Students are more satisfied with e-learning than with face-to-face training.** This hypothesis is proven by analyzing questionnaires filled out by the students.

4. **E-learning based training is more effective than face-to-face training.**

This hypothesis is proven by analyzing students' results at the final exams.

5. **The experience gained in e-learning by tutors, has a positive impact on their work as instructors in face-to face training.**

This hypothesis is proven by analyzing the work of instructors in face-to-face training.

#### **4. The results of the research**

The first hypothesis is proven by researching literature and by our own experience. Summarizing the results of the literature research it can be stated that the most important characteristic of e-learning is independent learning. Students' learning was previously lead by the teacher. Adults are not prepared for independent learning, they have to learn the methods of how to acquire knowledge on their own.

According to the second hypothesis the preparation for e-learning is possible with e-learning methods. A special subject called „Pro-seminarium“ was introduced for this purpose. The content of this subject comprises how to use the e-learning framework system and the methods of independent learning.

More than 90% of the students have successfully learned the use of the framework system and performed the given tasks within the framework (they sent e-mails to the tutor, solved the exercises for self-checking, or wrote comments on the forum). None of the students indicated towards the tutor that they had problems with the material.

The success of preparing the students for independent learning is confirmed by comparing the grades at the final exam of the students who take part in e-learning and face-to-face training. The results of the final exams and grades of their theses were compared. The evaluation of the final exams and theses are the same in both forms of training.

The results of students participating in face-to-face training from 2003-2006 were compared to the results of e-learning students from 2007. The results of e-

learning students were better. Within the official training term (6 semesters) a higher percentage of e-learning students passed all subjects compared to face-to-face students. These indicate the success of the preparation for e-learning. These results also prove the fourth hypothesis.

According to the third hypothesis students are more satisfied with e-learning than with face-to-face training. This hypothesis is proven by analyzing questionnaires. Student satisfaction was examined among different groups of students:

- Students in the same major. Some students learned all subjects in e-learning, other students learned all subjects in face-to-face training.
- Students of different majors. They learned some subjects in e-learning, other subjects in face-to-face training.

Analysis of the questionnaires revealed that students are more satisfied with e-learning.

The satisfaction of students can also be measured in connection with course registration. Students majoring in Business and Management had the option to choose between e-learning and face-to-face subjects. The students who began learning in the face-to-face system, chose more and more e-learning subjects in the later semesters (in the sixth semester 24%). On the other hand, less than 3% of e-learning students chose face-to-face subjects. These facts indicate that e-learning meets the expectations of students better than face-to-face training.

The fifth hypothesis analyzes the impact of e-learning on face-to-face training. Using elements of e-learning in face-to-face training is typical in the following fields:

- In the case of large groups in face-to-face training, they organize electronic (computerized) exams instead of oral exams;
- The multimedia elements (animations, videos) of e-learning subjects are used in face-to-face lectures;

- The elements of the curricula that face-to-face students can learn independently, are given to them in the form of e-learning , so the lecturers only have to deal with the difficult parts of the curricula.

## **5. Using the results of thesis**

The results of the thesis will be used at Széchenyi István University in developing e-learning based curricula and in organizing e-learning based trainings.

The results of this work can also help other institutions in the following fields:

- Planning and organizing e-learning based trainings;
- Creating learning guides for students for independent learning;
- Choosing the e-learning framework;
- Preparing students and tutors for e-learning;
- Using the e-learning curricula in face-to-face training.

The formulated and proven hypotheses may contribute to enrich the theoretical knowlegde in the topic of e-learning.