

A THEORETICAL FRAMEWORK FOR QUALITY INDICATORS IN ELEARNING

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ABSTRACT

Advances in information and communication technologies, especially in Multimedia, Networking and Software Engineering allow the appearance of a new generation of computer-based training systems. Despite its obvious advantages in terms of reduced costs, simplified training programs and flexibility, e-learning was not always the miracle solution. Conceived as a powerful educational tool, e-learning was destined to change the face of learning but unfortunately, this change wasn't exactly the intended one. The constant interest in researching and testing the use of Information and Communication Technologies (ICT), eLearning and multimedia in the learning process led to educational imperatives about the indicators that can reveal the level of quality for teaching and management of the course. Modern eLearning solutions now recognize the importance of learning as a social process and offer possibilities for collaboration with other learners, for interaction with the learning content and for guidance from teachers, trainers and tutors. Our aim is to analyze the importance of using ICT in a "learning society".

The present paper focuses on the strong potential that ICT provides, in order to develop the learning possibilities among students. The great challenge is to draw up a quality indicators framework which can represent an instrument for teachers on how to organize their online course – including ways of developing the teaching methods.

Keywords: e-learning critique, e-learning indicators, e-learning quality

INTRODUCTION

In the last decade, the tremendous increase in the amount of available information was made possible through the enhancement of the access to computers and to the Internet. The information era enables increased information accessibility through more sophisticated tools. Education is facing many challenges in order to be made more relevant for the information society. In this society citizens have to be life-long learners, workers are expected to acquire knowledge and skills independently and to be able to communicate in a variety of contexts and by using a variety of means. This requires an important transformation of education, and Information and Communication Technologies (ICT) can be the means to realize that transformation (Fredriksson, Jedeskog, Plomp 2007).

Thus, one of the goals of the educational system should be to prepare students to take an independent and responsible role in the information society. Furthermore, this goal will be achieved only if the students acquire the necessary skills for working with large amounts of information from a wide range of sources (Barzilai, Zohar 2007; Land, Greene 2000; Salomon 2000). ICT-mediated learning has become an integral component of the education and training systems. Moreover, with the rise of information and communication technologies era, new competencies have become vital. Digital literacy, the ability to use ICT, is among the most important. Despite its obvious advantages in terms of reduced costs, simplified training programs and flexibility, e-learning is not always the miracle solution. Conceived as a powerful educational tool, e-learning was destined to change the face of learning. And, to be fair, it has. But unfortunately this change wasn't exactly the intended one. Despite the benefits, corporate e-learning has real problems in all stages of implementation:

Initial Design Issues

- Lack of identification of real needs;
- Lack of analysis of the need even when it was identified;
- Poor overall strategic design decisions in areas such as: structure of the course, methods and media to be used, and course management and evaluation.

Instructional Design and Development Issues

- Lack of detailed instructional design;
- Failure to develop important instructional design elements such as authoring or graphic design;
- Lack of evaluation and revision of the instructional design resulting in no reiterative improvements.

Dissemination and Implementation Issues

- Problems in production, reproduction and distribution;
- Poor implementation and use of the e-learning that was delivered;
- Long term management and evaluation problems (Romiszowski, 2004).

If we take into account these problems, we can state that a lot of corporate e-learning initiatives are failures; we mean that *the intended learning* was not actually achieved. Technologies such as Learning Management Systems (LMS) and Learning Content Management Systems (LCMS) are widely spread but they do not lead to the intended learning. All the technologies *with no effective online instruction* will not produce any significant learning results. There are some explanations for these shortcomings (Woodill, 2004):

- The rush to launch the new educational courseware and educational technology on the market without a proper testing;
- Focus on new technology, not on instructional design;
- Lack of understanding of learning and teaching
- Lack of understanding of the unique teaching advantages of electronic media.

In these circumstances there are lessons to be learned by the software providers. Technology-obsessed course developers who create highly interactive, very spectacular and very expensive multimedia courseware that dazzle the eye without informing the

mind, as well as courseware creators that offer numerous (maybe too numerous) simple programs, a kind of page-turners that are little more than PowerPoint presentations, need to take into account solid quality standards for e-learning and need to provide products that are based on sound educational principles.

ON QUALITY IN E-LEARNING

At first, Information and Communication Technologies (ICT) were means for the development of knowledge both for teachers and students. Now, ICT represents a facilitator for courses design and organization, for checkup and assessment the students' acquisitions. Moreover, through ICT we can shift the emphasis from a content centered learning to a student centered one – valuing the personality of the learner, their own learning pace, resources and limits. At the same time, learners develop computer using skills through the proposed exercises and tasks and the main advantage is that the teaching process emphasizes expanding skills, attitudes, personality and not only cognitive perspectives.

Definitions and usage of the terms *standards* and *quality* vary and may depend on the aims/purposes of the educational and historical context. Quality is used with much variability in meaning and may refer to a number of things, including individual student performance, the outputs and the content of an educational program, the student learning experience, the teaching provided etc.

- We can mention some approaches to the *quality* concept:
- Quality as excellence – the traditional (often implicit) academic view which aims to demonstrate high academic standards.
- Quality as *zero errors* – most relevant in mass industry where detailed product specifications can be established and standardized measurements of uniform products can show conformity to them; in higher education it might be applied, e.g. to learning materials.
- Quality as *fitness for purposes* – focuses on “customers” (or stakeholders) “needs” (e.g. of students, employers, the academic community, government, or society), and/or as defined by the stated aims and *learning outcomes* of a curricula.
- Quality as enhancement – emphasizes continuous improvement.
- Quality as transformation – applies either to students' behavior and goals changing as a result of their studies or to socio-political transformation achieved through higher education.
- Quality as threshold – refers to meeting a minimum standard, as in *subject benchmarking*. Minimum standards are defined in most European higher education systems to enable a minimum, objective comparability of units or programs (Harvey, Burrows, Green, 1992).

Quality of online teaching reflects the attributes of any effective teaching, whether in the traditional classroom or online. Both traditional classroom teachers and online teachers need to know their subjects and how to teach them. They also must know their students, stay up to date in their subject areas, and manage and monitor students' academic progress to ensure success. Quality in e-learning has a twofold significance in Europe: first, e-learning is associated in many discussion papers and plans with an increase in the quality of educational opportunities, ensuring that the shift to the information society is more successful.

This context is called 'quality through e-learning'. Second, there is a separate but associated debate about ways of improving the quality of e-learning itself. This context is called 'quality for e-learning' (Ehlers, U. D., Goertz, L., Hildebrandt, B., Pawlowski, J. M., 2005).

The eLearning domain is involved in a deep standardization process. Advances in information and communication technologies, and especially in Multimedia, Networking and Software Engineering allow the emergence of a new generation of computer-based training systems. Thus, institutional users of educational software are joining their efforts to achieve standards and recommendations to support the interoperation of heterogeneous learning systems. One of the main aspects subject to standardization is educational content organization (models to describe static and dynamic course structure). The course needs to facilitate the students' interaction with a dynamic content. This is an active, continuously evolving process that will last for years to come, until a clear, precise and generally accepted set of standards for educational-related systems is developed (Kloos D.C., Pardo, A., 2004).

Describing the standards and indicators for teaching and organizing courses in eLearning is a complex process, which occurs at several levels:

First, when talking about courses content, it is necessary to have a clearly specified aim, and the course objectives must be very specific (determining the cognitive operations and practical skills for students to achieve). It is also important to make teaching resource materials available to students (before the start of the course); the course content and timetable are stated in a clear, complete and explicit way. Tasks fulfilled at the course need to be clearly defined and stated in accordance with the purposes and objectives. Information on how to get in touch and to communicate with the teacher is offered to the students, parents and mentors (we include here the information on technical issues). Students are given information about the use of bibliographic materials – with a high emphasis on copyright (they have the responsibility to always specify the source of information). Also, measures must be taken that secure data is transmitted in the process of eLearning.

Expectations concerning academic integrity and standards/rules for Internet use are clearly specified for the teaching activities, online discussions, communicating by e-mail and plagiarism. Another indicator of quality is that referring to the resources available to the teacher - to be included in the common database to all learners. The teacher is the one that provides clarifications on how students will be evaluated. It is important that the teacher should have the prerequisite technology skills to teach online. This includes operations such as: ability to effectively use word-processing, spreadsheet and presentation software; effective use of Internet browsers, e-mail applications; ability to incorporate multimedia and visual resources into an online module; troubleshoot typical software and hardware problems; ability to use and incorporate subject-specific and appropriate software in an online learning module. As regards to *the course design*, its structure should reflect openness to the needs of learners and to include different ways of integrating multiple levels of information and approach to content. The course is organized into chapters and lessons; each chapter of the course introduces a clear description of objectives, activities and material resources and also includes a description of activities and the main information of each chapter. At the beginning of each lesson general information on the segments mentioned above will be provided to the students.

The course is structured so as to enable students to assimilate the knowledge and skills in a well developed manner; it includes active learning activities for the students. The course is designed in a manner that provides a wide range of possibilities to learn, to assimilate the information, based on the learners needs. The course provides opportunities for the students to use critical thinking, logical reasoning and to develop cognitive structures through learning strategies used. Also, the course will adjust to the principles and strategies of intercultural education - the data used will be correct, accurate, current and impartial. The teacher will take into account the students' preferences and learning styles and will offer them a variety of ways to relate to the content. He has the freedom to adapt learning activities to the students' needs, requirements and expectations.

The courses' design should develop appropriate ways for teacher-student interaction, including relevant feedback about the progress of each student. The course offers opportunities for development of proper teacher-student and student-student interaction, including a plan for monitoring the quality of these types of interactions. It will take into account that an effective interaction between the participants leads to an accurate understanding and assimilation of the material. Both organization and implementation of an online course raise many more questions than the organization of a traditional course.

The initiator of an on-line course has to answer certain questions: who will create and improve the electronic material used; what technical skills are necessary for students to access this material; who will offer students optimal feed-back; how comprehensive must the material provided be and which is the optimal degree of difficulty of the tasks (it is known that a material considered too facile generates disinterest, while one that is too difficult may generate difficulties on learning/working); how easily can students develop attitudes, skills and capacity to achieve performance in learning; which is the way students will be evaluated; how enjoyable it is for the student to work online.

STANDARDS IN E-LEARNING

Going into the *standards of teacher academic preparation*, we can mention first, that the teacher *has to have obtained vocational skills* through higher educational studies *and teaching skills*.

As indicators for achieving this standard we can state: developing specific academic skills on the subject they teach; knowing very well the content to be taught and the teaching methods to help the teacher in this regard; building the course structure based on students' learning styles; holding certifications which testify his professional qualification in the field of study; frequent updating of knowledge and of practical skills.

Regarding the standard which states that *the teacher should provide examples and to encourage lawful, ethical and proper behavior in using the available technology*, it is needed (in the framework of eLearning as a teacher): to stimulate the studies undertaken by trainees in connection with the ethical rules regarding the use of ICT in the society; to establish standards for the use of the Internet and assignments written by students; to know how the obstacles of technology might influence the learners' efficiency; to draw up the course in such a way as to respect the rights for intellectual

property and standards of fair use; to possess knowledge and skills related to online technology resources which should enable him to find solutions for any issues that may arise (from improper use of new technologies); to inform students about the rules of confidentiality and conditions in which their identity can be disclosed to colleagues.

Of major importance in the context of eLearning *is the teacher's ability to provide students with quick feedback, prompt response and clear tasks*; this ability helps them to have good results such as:

- to know how to lead in communicating effectively to students;
- to use learning strategies to encourage collaborative learning, student-student interaction and active learning;
- to adapt the instructional style to the students' learning styles;
- to know how to continue his efforts (in a consistent manner)
- to help students obtain the best results;
- to establish teacher-student, student-student, teacher-parent relationships;
- to provide an online syllabus which offers details about the relations established during the eLearning process about teacher and student roles , about the criteria for passage from one level of training to another, about what is considered an undesirable behavior for both teacher and student;
- to provide a curriculum which will very concisely specify the course objectives, basic concepts that must be learned and the results of the learning process; to assist students to organize their time more efficiently, to monitor the progress of each individual student and to help (by special programs) the students who are experiencing difficulties.

Another standard is that *the teacher understands and is receptive to students with special needs*. In this case, the teacher needs to develop some skills such as: the ability to understand that students are different and, as a consequence, he should use appropriate methods to include all the students in the learning process; the capacity to use the activities, possibly modified, to meet all the learners' needs; the ability to adapt the educational process so that the educational goals are achieved in different ways; the capacity to encourage the collaboration and interaction between all students, to evaluate students' knowledge in a variety of forms.

Teacher's experience as a student who has used the eLearning process is decisive to the success of the educational process because they will be able to anticipate any kind of problems that may arise for the students, and also solutions that can be applied in such situations. Also, he will know how *to anticipate and prevent these problematic situations*.

Indicators describing the performance of this standard are: teacher applies the experiences gained as a student involved in activities of eLearning as a resource to develop strategies and methods of teaching online; he holds the ability to anticipate problems and challenges that may arise in online classes. As regards the eLearning training methodology, the teacher must plan, develop and use strategies to encourage active learning, interaction, participation and collaboration in the online learning frame. With the development of ICT, education was practically revolutionized, the

permanent interaction between students, between students and tutor, but also between students and content resulting in a higher quality for on-line education, often more effective than traditional education. Thus, an on-line course offers a number of advantages: individual learning, developing metacognitive skills and capabilities operating on the text, developing the processes of knowledge, changing the traditional roles of the teacher, flexibility in choosing strategies.

The teacher demonstrates that he has methods, strategies and techniques that actively involve students in the learning process (e.g. solving tasks as a team; analysis and synthesis rather than passive reading); facilitates the interaction between students and encourages learning in a working group; builds and maintains relationships based on trust between students, helping to develop the necessary skills and supporting the spirit of creativity, critical thinking and independence in thinking; leads learning groups that are centered on objectives, conducts surveys, polls projects; knows how to respond to the needs and requirements of the learners belonging to other cultures and who are not native speakers of English; the teaching process differs depending on the students's learning styles assists/advises them in assimilating and understanding information correctly ; he is familiar with the pedagogical investigations which enable him to know the teaching methods and strategies.

From the perspective of the *technology used*, building online learning platforms will enable the teacher to add content, practical activities and/or evaluation procedures to extend the ways of learning. Browsing the online course pages should be easy; the course will use up possibility offered by cyberspace and will make resources available to students through various means: e.g. video, CD, iPod's. Specific tools and software, appropriate to the content will be used.

It is important for the teacher to have an engineer who can handle the coordination of technology. The course will be structured according to the principles of design applied to any context, being thus able to give access to it to all students. The engineer will advise the teacher on issues of technical support and course management. A prerequisite is the average level of knowledge of using the new technologies by both students and the teacher.

Assessment strategies are related to the purpose and objectives of the course - properly defined at the beginning of the educational process: this is the main dimension of the subject that underlines the quality of *students/learners' assessment*. Assessment in eLearning should be designed so that students can not pass on to the following sequence if they have not learned the one before. If the results are unsatisfactory, the students should be guided to a sequence which provides further explanations or supporting elements. Because this is a way of improvement, evaluation has to represent an opportunity to enhance learning, in other words, exercises and homework proposed on the assessment tests represent possibilities to learn and not just a way of checking the knowledge acquired

The teacher will *demonstrate that he has skills that are necessary for assessments in eLearning so that methods and instruments used for assessment be valid and reliable*. He will make or select appropriate tools for assessing learning; will implement materials and online assessment tools.

Assessment strategies and instruments used in these meaning make students become aware of their progress (beyond the grades obtained – which do not always indicate the true knowledge level of the individual). The most effective strategies for assessment are hardly predictable and very flexible.

The teacher will use effective strategies involving self-evaluation (both for him and for the students). He uses assessment methods of the initial students' preparation, of their ability to understand the course content and he proposes ways to self-evaluation, giving the students such opportunities at the end of each chapter. Analysis of *the course management and evaluation* involves making available to any interested person the students' evaluations about the effectiveness of the course. The course is periodically evaluated and the results are used as the basis for its development. Accreditation by specialized institutions is important (one must remember that assessment is done technically too). The most important trend of the researches and studies in eLearning quality was based on the following dimensions:

- learners must play a key part in determining the quality of e-learning services;
- countries must develop a culture of quality in education and training;
- quality must play a central role in education and training policy;
- quality must not be the preserve of large organizations;
- support structures must be established to provide competent, service-oriented assistance for organizations' quality development;
- open quality standards must be further developed and widely implemented;
- interdisciplinary quality research must become established in future as an independent academic discipline;
- research and practice must develop new methods of interchange;
- quality development must be designed jointly by all those involved;
- appropriate business models must be developed for services in the field of quality. (Ehlers, Goertz, Hildebrandt, Pawlowski, 2005).

We believe that future shapes of eLearning (including courses' design) will engage the learner in a two-way type of learning that involves simulation of real world events and any kind of collaboration with the other learners and the instructor (Brian W. Rutenbur, Ginger C. Spickler, 2000). As ICT has penetrated rapidly in almost all areas of activity, it is not possible to minimize their role in education. ELearning involvement in the teaching process has brought significant contributions to the development of all educational dimensions. Therefore, it is necessary to try to establish and improve appropriate standards of eLearning quality.

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