

# Information Society and E-learning

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**Abstract:** In the late 1970s and the early 1980s, the term and the idea of the information society emerged. Since then, it has been witnessed the substantial changes in society as a whole, the changes that stemmed from the development of the new information and communication technologies. The Internet has been changing the world we live in and its popularity has been shaping up the need for education. E-learning, a segment of the information society, is today transforming from the basic utilization of ICT as means of learning into new forms of education and training that emphasize creativity and team work as the new requirements imposed by the society of knowledge. This fact in turn requires a substantial shift of stress from technology, network links and the Internet to an enhanced study of the context of learning and the need for cooperation and communication.

## I. INTRODUCTION

When using the words education, learning process and learning, the majority of people primarily think of an educational institution where lectures are given. In accordance with some research, a teacher has the central role in the learning process. However, the contemporary times of an exponential increase in the information and communication technologies development offer, besides the traditional ways of learning, some new opportunities of acquiring knowledge as well thus allowing for a choice of the time, the place and the pace of learning. Today, a variety of computer technologies are used to create and deliver learning materials, to support (substituting a

teacher partially or fully) and to manage a learning process. Various researchers in the field have used various terms to indicate some possible ways and approaches to the teaching process and learning.

## II. E-LEARNING

E-learning is a term used to denote the educational process enhanced by means of the use of the new information and communication technologies (ICT). "The information society can be defined as a phase of development in which information sector, information production, information capital, and qualified human factor have gained importance through introduction of new technologies and the continuity of education has come into prominence" [1]. "The concept of information society is obviously of Japanese origin, but it has often been considered a logical extension or expansion of Daniel Bell's notion of the post-industrial society from the early 1970's" [2]. "Information technology (IT) worldwide is undergoing an increasingly strong paradigm shift that is affecting diversescientific disciplines in a variety of fields, including social, political, cultural, economic, and industrial areas and building information societies" [3]. This implies any form of learning, lecturing or education that are primarily supported by the technologies based on the Internet (the web).

"Computer or some other electronic device-supported learning (that should not in turn be remote) can be implemented in a way in which a teacher and students

share the same room although they can as well be separated“ [4].

E-education can be said to comprise many aspects of the use of ICT in education, ranging from the simplest use of a computer in a classroom for the purpose of the traditional teaching process (PowerPoint presentations, computer simulations, presentations based on multimedial materials, the use of web contents) or for the purpose of the mixed or hybrid teaching process blended from a direct contact in a classroom and on-line activities up to the teaching process that is fully organized in on-line surroundings within which all the activities of a teacher and the students are performed remotely, without a direct contact among the teacher and the students. The mobile (phone) technology has recently entered the field of e-learning as well.

It is to be emphasized at this point that the term e-learning has increasingly been related to new education in terms of its quality that is to provide for a two-way, interactive process among the teacher and the students by means of electronic media; the teaching process is student (instead of teacher) – oriented and it thus gives a spur to an active acquisition and use of new knowledge and to a quality cooperation of teachers and students.

### III. E-LEARNING OBJECTIVES

“As human beings, we live in societies where we are inherently tied to different social connections“ [5]. The new ICT technology is more and more present and accessible from day to day. Schools and universities have become more and more equipped and the access to the Internet has been made possible from more and more points. Consequently, the appropriate software support has become more and more developed so that the teaching process has been enhanced as well in terms of quality.

It is to be born in mind here that, if the technology-supported teaching process is to be really effective, it has to be structured well and organized carefully in terms of not only technics and technology but education and teaching technique principles as well.

The chosen strategies are to motivate students so that the layered information (knowledge) should be processed in an appropriate manner; furthermore, care is to be taken of the individual differences between students and meaningful learning is to be promoted. Once there is a positive communication with the teacher and an interaction among students, it is easier to obtain feedback, to provide for the contextual learning and to give a continual support in the course of learning.

### IV. MISSION AND VISION OF E-LEARNING

E-learning enables the development of the surroundings in various aspects: the intellectual, social

and economic development of its surroundings by means of offering a high quality services in education and research results.

“Before an organization can evaluate any offerings from an e-learning provider or implement any internal initiative, it must first create a cohesive strategy that clearly defines and documents the value each program must deliver—before any program moves beyond the concept stage“ [6]. The implementation of e-learning is conducive to generating the positive changes of quality of the teaching process by means of providing for the basic prerequisites (infrastructural support systems, education system in the field of the new teaching techniques and the use of ICT in teaching, quality control systems...) for all the participants in the process (students, teachers and the people employed in the support systems). Hybrid physical and network learning communities can enhance teacher and student interaction environments. “The structure network learning society architecture helps users to integrate both network and physical learning communities“ [7].

It is to be pointed out though that each and every new technology yields some free shooters as well, namely some teachers that implement the new technologies into their teaching process on their own; Such a way of implementing e-learning eventually becomes expensive and ineffective when compared to a planned teaching process enhancement on the whole institution level. In order to provide for high quality and profitable results, e-learning experts recommend the project approach to e-learning implementation, the approach that considers all the project elements (i.e. envisaging the appropriate e-learning implementation strategy and action plan) prior to the implementation of the project itself.

To what extent this approach has been successful in Croatia, or, in other words, what the guidelines are at the beginnings of e-learning is the topic of this paper.

Keeping a record of contemporary events is a prerequisite for completing the mission. The Bologna model is conducive to e-learning quality by means of providing the students with acquisition of knowledge and/or competences when supporting the optimal development of an individual is concerned. The implementation of e-learning into the teaching process requires changes in the educational and teaching techniques aspects of the teaching process. “The reasons for the lack of integration of e-Learning into school curricula are a complex mix of the level of access to ICT, teacher motivation and the relationship between pedagogy and the available technologies“ [8]. The objective is to form a quality and modern teaching process and to join the European education community. It is to be emphasized at this point that the implementation of e-learning is merely a tool for attaining objectives within the strategy of enhancing the quality of teaching process and learning. “The quality should in these terms be monitored in a formal way“ [9].

The IC technologies will be implemented into the teaching process gradually - in most cases, up to a hybrid teaching process level and, in some cases, up to a level of

the fully on-line teaching process. The on-line teaching process will be highly appropriate in cases of specialist lifelong education courses and postgraduate courses.

## V. RESEARCH METHODS

The research method used was a survey. The surveyed were not given any eliminating or preliminary question. All the survey questionnaires were filled in correctly. The surveyed could give up at any stage of surveying and they could accept or not accept the survey, so it could be presumed that the obtained data are relevant.

The research sample comprised of 164 persons. The research was being done in three towns with different age groups as follows:

Pula, 13.4 % (n=22) of the surveyed, the participants of an adult training course; Karlovac, 52.4% (n=86) of the surveyed, students of Business Department and akovec, 34.2% (n=56) of the surveyed, students from two secondary school classes (the first and the second year web designer / media technician courses).

65% persons in the sample were females (n=106), whereas the rest of 35% (n=58) were males. The average age of the surveyed was 21.5. The youngest surveyed person was 15 and the oldest one was 58.

The survey was anonymous and comprised of questions among which there was not any eliminating ones. The first four questions were of sociological importance. The rest of the questions were of multiple-choice type. As much as six questions were structured in a way that the surveyed had to state whether they agree with the questions offered.

The objective of the survey was to obtain feedback on the following:

- To what extent is the term e-learning generally known,
- What is the relation between the traditional teaching process and e-learning in the mind of an individual and
- The awareness of the use of e-learning.

Secondary school students (SS), university students (US) and adult training course participants (AT) assessed the awareness of the term e-learning, its recognizability and the association quality by means of the following questions:

- Are you familiar with the term e-learning?
- Where did you come across the term e-education for the first time?
- Which term associates you most with e-knowledge acquisition?
- Do you think that e-learning is going to replace the traditional teaching process?

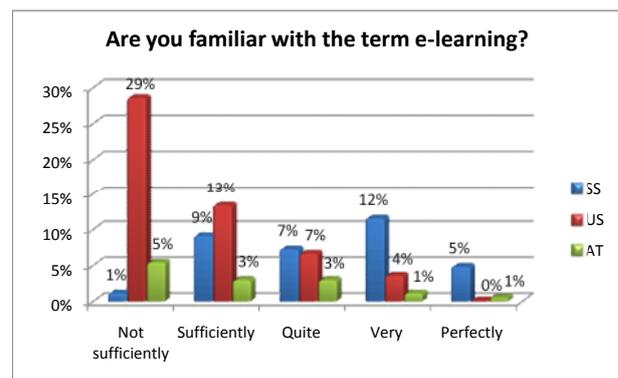
The following statements were used (by means of the affirmative "yes" and the negative "no") to assess the personal knowledge of an individual of the e-learning term and procedures:

- I consider the term e-learning to mean that the teaching process is performed via the Internet
- The term e-learning means a teaching process without a teacher!
- E-learning means remote teaching!
- With e-learning, I do not have any help from a teacher!
- When I learn from some e-learning materials, I am allowed to see the materials only once!
- With e-learning, I do not have a chance to communicate with my friends (colleagues)!

## VI. RESULTS

The results analysis is voluminous, so only the important data and the data showing a significant deviation are presented.

The results of the question *Are you familiar with the term e-learning?* seemed significant. Namely, the graph shows that 29% of university students and 5% of adult training course participants are insufficiently familiar with the term e-learning as opposed to the secondary school students (1%) who are, in turn, stressedly marked with positive figures when the familiarity with the term is concerned. The answers to the question are presented in Graph 1.

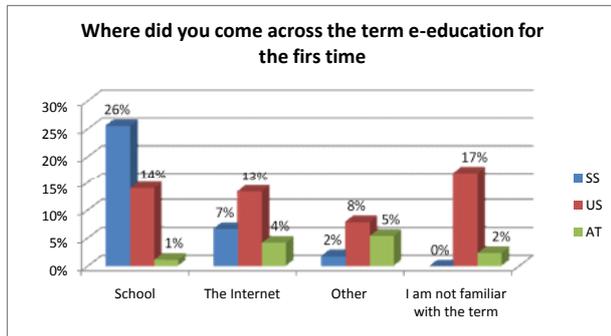


Graph 1. Students' familiarity with e-learning

The answers given by the university students and the adult training course participants indicated that they were not familiar with the term e-learning.

However this is not a surprise regarding the fact that the implementation of the e-learning requires both informing at the earliest stage and learning and training for work in the virtual surroundings at the earliest stage.

This is where the question *Where did you come across the term e-education for the first time?* gave us the information in favour of the above-mentioned conclusion.



Graph 2. Students' familiarity with e-education

The Graph 2. shows that the surveyed from the AT participants group were familiar with the term e-education regardless of their age and it was supposed (the term e-learning is comparatively new) that they came across the term within their informal adult education courses.

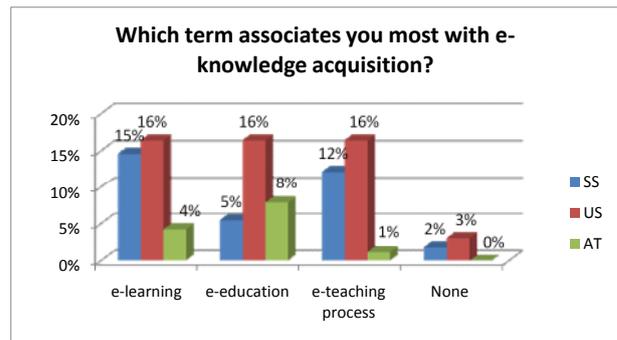
It is then, in other hand, easy to understand a high percentage of the secondary school students that knew the term due to encountering the term at school, within their regular teaching process.

In fact, what was surprising indeed is the fact that as much as 28% of the university students of Business and 29% of the university students of Safety and Protection had never even heard of the term; As for the Nutrition course students, in other hand, only 13% of them answered that they did not know for the term.

The relevant data is shown in Table 1.

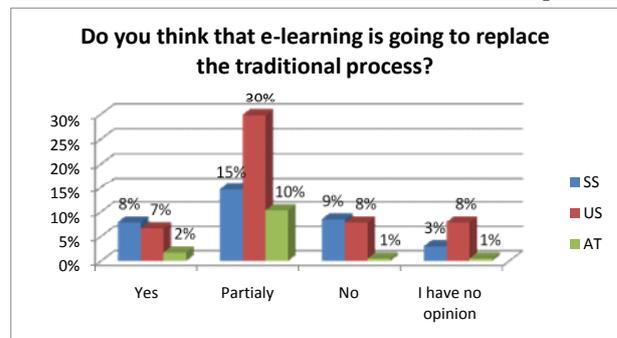
Course	Total number	Number of participants who did not know the term
Safety and protection	28	8
Nutrition	24	3
Business	61	17

It can as well be related with the question *Which term associates you most with e-knowledge acquisition?* What was supposed to be obtained is the data on perception and association of the term e-education in the scope of a wide range of the surveyed. The results are shown in Graph 3.



Graph 3. Students' familiarity with e-knowledge

Pursuant to the question *Do you think that e-learning is going to replace the traditional teaching process?*, the majority of the surveyed think that e-learning is going to replace the traditional teaching process, whereas there was more or less equal number of the surveyed who do not have their opinion as to the matter or consider any of the extremes correct. The results are shown in Graph 4.



Graph 4. Students' familiarity with e-learning

Tables 2 and 3 show the cumulative group data for all the surveyed. It is obvious that all the surveyed (even 100% of the AT course participants group) understood that one can read the material several times. Up to 30% of the surveyed think that this way of learning requires learning without any help from a teacher.

Table 2.

ANSWER	YES-NO	SS	US	AT
Performed via the Internet	YES	54	75	11
	NO	2	11	11
Without a teacher	YES	17	26	5
	NO	39	60	17
Remotely	YES	47	74	13
	NO	9	12	9
No help from a teacher	YES	7	12	2
	NO	49	74	20
Read once	YES	5	4	0
	NO	51	82	22

No communication with colleagues	YES	8	17	4
	NO	48	69	18

The majority of the surveyed consider e-learning to be performed via the Internet – as much as 96% of the secondary school students and 50% of the AT course participants. In accordance with the previous question and the respective answers, 86% of the university students and 59% of the AT course participants consider e-learning synonymous with remote learning. Less than 20% of all age groups think that there is not communication with colleagues.

Table 3.

ANSWER	YES-NO	SS	US	AT
Performed via the Internet	YES	96%	87%	50%
	NO	4%	13%	50%
Without a teacher	YES	30%	30%	23%
	NO	70%	70%	77%
Remotely	YES	84%	86%	59%
	NO	16%	14%	41%
No help from a teacher	YES	13%	14%	9%
	NO	88%	86%	91%
Read once	YES	9%	5%	0%
	NO	91%	95%	100%
No communication with colleagues	YES	14%	20%	18%
	NO	86%	18%	82%

The survey questions showed that there was an imbalance in familiarity with the term e-learning, the perception of it and the associations related to it.

## VII. CONCLUSION

In Croatia, computers are still used as an accessory for obtaining information and this is still a far cry from the European trends of using the Internet and computers for the purposes of development.

As it was stated in the research, the majority of the surveyed took for granted that the Internet was the means of e-education. The majority of the surveyed considered as well that e-education is a synonym for distance learning. One fifth of the surveyed from all the age groups consider that there was no communication with colleagues when e-education is implied. It has been noticed that the field of e-learning is fragmented and features many open questions as to how to utilize the potential of ICT in education. A wide partnership among various interest groups such as industry, education, public

sector and civil society is to be attained so that Europe can make use of all the advances of ICT and e-learning in the knowledge society. In this sense, the academic community in Croatia does not lag behind the EU trends as it has taken part in numerous EU projects.

Regarding the obtained results, a more comprehensive research is to be done that would tell apart the differences that have arisen. It is especially intriguing a fact that the surveyed university students knew very little about e-education in comparison with other age groups. The results lead to the conclusion that all what was said represents reasons more than sufficient for a further development of e-learning system, as well as an enhanced perception of it and a more intense and more exact implementation of it into the regular teaching system.

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