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## **„EFFECTIVENESS OF E-LEARNING IN EDUCATIONAL PROCESS: PERSPECTIVES AND INNOVATIONS“\***

### **I**

#### **Introduction to E-Learning and Necessary Prerequisites**

„E-Europe is a roadmap to modernize our economy. At the same time, through its e-Learning component, it offers everyone, but particularly young people, the skills and tools they need to succeed in the new knowledge based economy“ (Prodi). According to the e-learning initiative adopted by the European Council in Lisbon in March 2000, it is estimated that, by 2010, Europe should become the most competitive and dynamic knowledge based economy in the world. The most important component in achieving this goal is e-learning. Therefore, the European Union has created a special e-learning Action Plan for the period 2002-2004 with four major action lines:

- 1) infrastructure and equipment
- 2) training at all levels
- 3) quality content and services
- 4) cooperation and dialogue („Action Plan“).

The official data state that Serbia and Montenegro is a potential candidate to join the EU in the period 2007-2013, which is quite sufficient time to draft

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legislative platforms for the introduction of e-learning and its implementation in the practice. In order to accomplish these aims, we must first provide the necessary conditions („Serbia and Montenegro among potential candidates for EU“).

Two most essential prerequisites for the introduction of e-learning in higher education institutions are:

#### **A) The attitude towards conventional face-to-face education.**

This is a starting point in which the distinct direction line of modern educational processes should be decided. The main question is whether we should substitute conventional education fully or just partially and it has to be raised because face-to-face learning has numerous multi-level advantages. Some of the most powerful arguments in favor of conventional *ex catedra* concept of education point out difficult problems of e-education which concern the lack of social interaction with peers, lack of contact with lecturers, possible distractions in learning environment – both at home and at work, timetable flexibility in regard of low self-motivated students, copyright abuse, anonymity and many more (Rigden, 2001). It has been argued that successful e-learning programs require integrated efforts of several participants including faculty, facilitators, support staff and administrators and especially self-directed and self-disciplined students (Huch, 1999). On the other hand, there is a pluralism of indisputable advantages of online learning. Actually, technology-delivered knowledge and instruction represent a whole new era of education. Possibly the most significant advantage is fast and easy accessibility of information as well as necessary study materials and its availability regardless of geographical limitations which all enables students to choose from a wide variety of international education providers in order to satisfy their intellectual needs. Furthermore, e-learning offers vast opportunities for fast correspondence and communication between students and professors which provides students with immediate feedbacks (Neal, 1997).

#### **B) Technology and technical equipment.**

E-learning means using new multimedia technologies and the internet to improve the quality of learning and can be defined using various criteria (Keegan, 1986). The most striking component of e-education is the use of advanced technical and technological media such as computers, web cameras, audio, video and text resources which all provides remote exchange of information and permanent technology-assisted collaboration. Modern devices and technologies

enable professors and lecturers to organize their lectures in a totally new way. They can manage the curricula using multifunctional web-based applications thus making the materia available to students in very short time. Furthermore, fast flow of information based on internet provides immense opportunities for vivid communication between all the participants in the educational process using e-mail and messaging programs, thematic mailing lists, chat applications, newsgroups, forums and web logs. Virtual classrooms, working groups and workshops can easily be formed in order to transcend the shortages of traditional teaching methods. This could make professional knowledge closer to certain categories of student population such as handicapped students or those suffering from illnesses. It is also highly recommended to share international experiences in e-learning projects so as to find the most efficient ways to use technology in practical education purposes (Dempster and Deepwell, 2003). Certainly, numerous inconvenient issues arise. The first of all is the very question of availability of technique to students as target consumers of e-learning. Financial factors play the important role in purchasing computers and other related equipment which makes it more difficult to extend the range of users of e-learning to a level which can be described as satisfactory. One possible way to solve this problem is to make special sales contracts between educational institutions and computer manufacturers which would provide students with quality e-learning equipment at lower prices than regular and so create or improve the technical basis for e-learning. Another precondition which has to be fulfilled is the organization of trainings so as to teach students who are not familiar with computer technologies to main rules of its usage. Many international conferences have brought conclusions on the importance of online courses and e-trainings for establishing firm bases for functional e-learning realization (Prupis, 1998). Hardware and software incompatibilities are also a burden of e-learning ambitions since many problems can occur in case of disharmony of these components. But, even when there is no incompliance and where students are sufficiently skilled and familiar with technology, there is a specific problem caused by the greater depth of material required for remote teaching than for conventional lectures (Neumann, 1998).

In our further work, we shall focus on the effectiveness of e-learning in practice in order to find the most suitable way to introduce, perform and improve new educational methods as knowledge posts of the future.

## II

### Perspectives and Innovations

#### A) Survey on technical applications in educational process

In order to give an insight into the perspectives of e-education in Serbia and Montenegro, we present a detailed review of the results of the research done among students at the Faculty of Law in Novi Sad which is a large university centre and the capital city of the region of Vojvodina, the most developed region in our country which makes the results of the research specific as well representative.

The first step is to explore the existing technical applications in educational processes. The past two years have been crucial to the introduction of e-learning since various technical devices have been purchased and installed and are now used for lecturing purposes. Main classrooms are equipped with computer-managed overhead projectors, which has been accepted with wide approval, eagerness and excitement among students who have expressed the need for quality visual presentation of the learning materia. A new multimedia classroom has been rearranged so that large video beam projections can be used both for lectures and conference presentations. Video as a learning tool has been discussed in numerous works (Ellis and Childs, 1999). Probably the most appreciated innovation has been the adaptation of a computer classroom with access to internet which was followed by a special computer course for students and professors so as to get basic computer knowledge.

Since the effectiveness of e-learning depends on the fulfillment of its prerequisites, we have done a survey among the students which shows some indicative results. Total number of surveyed students is 264.

<b>Computer use among students</b>		
	Number	Percent
Students who use computer in any way	258	97.9%
Students that do not use computer at all	6	2.1%

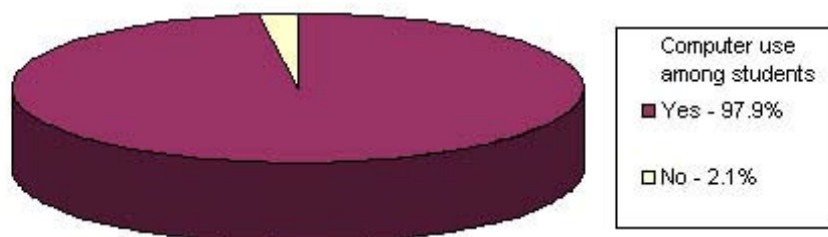
<b>Internet use among students</b>		
	Number	Percent
Students who use internet	237	89.6%
Students who do not use internet	27	10.4%

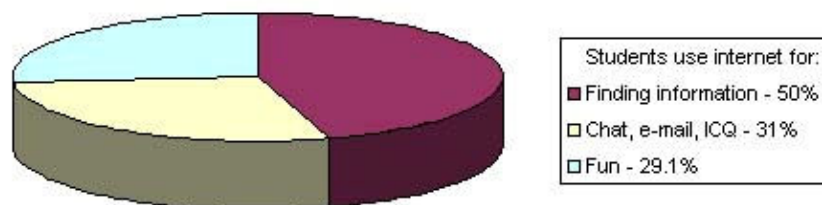
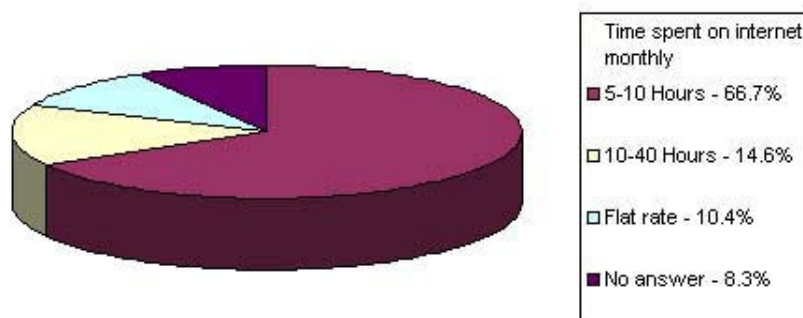
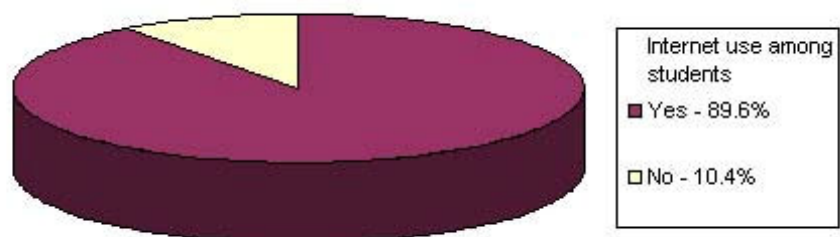
<b>Time spent on internet monthly</b>		
	Number	Percent
5 – 10 hours	176	66.7%
10 – 40 hours	39	14.6%
Flat rate (unlimited access)	27	10.4%
No answer	22	8.3%

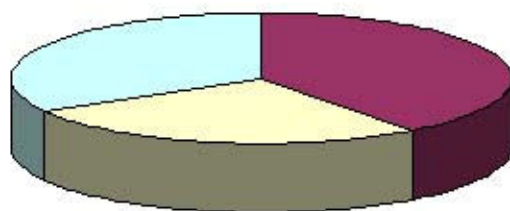
<b>Students use internet for:</b>		
	Number	Percent
Getting information	132	50%
Communication (e-mail, chat, ICQ)	83	31%
Fun	77	29.1%

<b>Current website rating among students</b>		
	Number	Percent
Useful and providing information	105	39.6%
Complicated and with old information	71	27%
Have not seen it	88	33.4%

<b>Would students use e-education if it existed</b>		
	Number	Percent
Yes	198	75%
No	66	25%

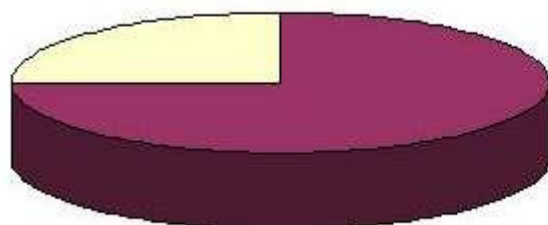






Opinion about current website of the Faculty of Law

- Useful and providing information - 39.6%
- Complicated and with old information - 27%
- Have not seen it - 33.4%



Would students use e-education if it existed?

- Yes - 75%
- No - 25%

As we can see from the results of the survey, vast majority of students use computers and internet (97,9% and 89,6%) in various places – at their homes, faculty, internet cafes and student hostels which is an encouraging fact. Still, technical equipment of students includes mostly modems (81%) which means that connection speeds are low and not enough for permanent online activities such as web-based lectures. The fact that 97,9% of the surveyed students think that internet could help them in education and that 75% would use online education, we are assured that the best way to make innovations at the Faculty of Law in Novi Sad is to create a special Students' Smart Website.

### **B) Students' Smart Website (SSW)**

It is a notorious fact that at the Faculty of Law in Novi Sad it is never an easy task to apply for exams. The system is too slow and the queues are miles long, which is an unnecessary loss of time. For students who do not live in Novi Sad it is often impossible to even know the exact date of the exam without tra-

veling long distance. The official website of the faculty is not supplied with fresh information for students. We face the loss of time again.

Moreover, when students come to attend lectures professors go through long lists of students to check if everyone is present. Loss of time once more.

The reasons for radical changes are obvious and could include the following:

### ***1. Universal Student Card (USC)***

Some people say that in a country where e-banking is newborn, thinking about e-learning is foolish. Let us leave these aside and think of a small piece of plastic which could make students' life a lot easier.

At the beginning of their studies students get students' booklets called *index* in which professors write students' grades and signatures used as a proof of overall presence at lectures during the year. This also causes nerve-wrecking queues which are unpleasant for both students and professors.

The Universal Student Card would be a great addition to *index*. With a microchip embedded into it (like a credit card) USC would serve as a multi-service student's record. At the very start of the faculty year students would pay to get a certain amount of credits on their USC. These credits would be used to pay for exam and semester applications and other purposes where money is involved.

USC would be an efficient way to form a unique list of students who attend lectures in a matter of seconds by simply putting it into pre-installed terminals when students come to classrooms and confirming their presence by using it again when a lecture is over.

Besides, when a student wants to apply for exams using the Students' Smart Website – the USC and his PIN number would serve both as ID and a quick paying method.

### ***2. One website – unlimited information***

Combining the power of database and internet access, the new and improved faculty website would serve as an online starting point for students and professors. All information concerning the studies would be available at one place.

On the SSW, students would apply for exams using USC, find lectures schedules and exam timetables, download and upload literature (legal acts, scripts etc.) or find information about theaters, cinemas or concerts.

Professors would have their section on the SSW with information on seminars and lectures. The SSW would also feature a mailing list open for every professor and student and would be divided into departments.



A well-known fact is that there is no good website without a forum, so one would be a good place for latest information along with questions and answers both from professors and students. This type of communication is popular and effective so it should be implemented into the studies.

### ***3. Online lectures – near future***

Although most of the students still use modems, we have to admit that modem times are behind us. Broadband connection is not such a luxury any more. The fact that only 10,7% of surveyed students use cable internet is not satisfactory, but this is surely a firm perspective of educational methods. Some sources emphasize that synchronous communication between professors and students is very important since the opposite slows down the educational process and limits the amount and depth of interactions regarding course materials and procedures (Wang and Newlin, 2001).

A simple web cam is a powerful tool and an easy way to provide live video feed to students who stay at home from one reason or another. It is not a substitute for actual attendance at lectures, but a way to avoid overcrowded classrooms which make lectures less effective.

It would also be a good way to have guest professors more often and share lectures with people around the globe. In short, it is having a guest professor without traveling and expenses.

### ***4. Computers to the people!***

Having in mind the financial and economic factors explained earlier in the paper, we should not forget that a computer is mostly an expensive gadget, but since computers suitable for internet use and text processing are an e-learning prerequisite, providing around 500 of these from major domestic or international computer companies would be an efficient way to establish technical basis for e-learning. There should be one of these machines in every student's room and in every classroom. Laptops and tablet PCs are even more suitable but also a lot more expensive than desktop machines. The use of Linux operating systems and freeware software would reduce the price of student PCs even more.

### ***5. Web logs***

One of the hypes of the season 2003/2004 on internet was definitely a web log i.e. blog – a new form of diary which is available for all to see and

comment. This is a way to share thoughts, photos, poetry and art, but it could also be a way to have students' electronic portfolios which could stimulate deep learning (Barrett, 2004).

One of the key components of the new SSW would be a blog engine which would allow both students and professors to write their own diaries which could contain numerous learning tips, explanations and instructions. This means sharing experiences online in a way which could be compared to writing a text-book. Analyzing and reading someone's blog would be a way to crack difficult and hard problems.

### III Conclusion

The advantages of e-learning are evident, therefore it should become part of the higher education program. On the other hand, e-learning has certain important drawbacks. The main disadvantage is the fact that e-learning as a concept relies on technique and technology, which puts aside the social elements of education. There is a hidden danger of alienation of the participants in the educational processes. We should never neglect the fact that human beings live together in a society which is threatened to be substituted by virtual reality.

Lastly, all that has been said leads us to the general solution which should be acceptable for all faculties and all social environments. E-learning should be understood as an enrichment of traditional educational methods. This is a perspective which would improve the effectiveness of education and keep numerous positive sides of both methods which would then be integrated into a fully functional concept. It is up to every higher education institution to make its own program of e-learning according to the existing conditions and its policy in order to harmonize two streams of education. The battle between conventional and electronic education remains unresolved. The invisible hand of the future will mould the best way to unify two educational roads into an educational highway.

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