BEGINNINGS OF INTERNET BASED DISTANCE EDUCATION IN SLOVENIA

Dr. Dušan Lesjak, University of Maribor, dusan.lesjak@uni-mb.si
Mag.Viktorija Sulèiè, SEPŠ, viktorija.sulcic@guest.arnes.si

ABSTRACT

Presence or expansion of Internet based distance education (DE) is one of the characteristics of the information society by which we can estimate the level of its development. As we witnessed many changes in Slovenia in the last decade we were interested in what is happening in DE arena especially because Internet has so successfully penetrating into the Slovene society.

Keywords: distance education, Internet and WWW, Slovenia

INTRODUCTION

Lately, knowledge has been given increasing importance, yet more and more knowledge gained at schools quickly becomes out-of-date and therefore it must be updated. The act of "updating" the existing knowledge is mostly done by the active part of the population, which can hardly afford to leave their work and begin to study. Nevertheless, in the last decade, various forms of education have been developed, which help to solve this problem. One of them is Internet based distance education (DE).

Internet based DE belongs to the phenomena of the information society, which – with regard to its wide use – can indicate the development of a country (indicator of development by RIS (8)). It is therefore likely that Slovenia will follow developed countries and that the introduction of Internet based DE is inevitable.

Because of that we started to research Internet based DE in Slovenia through the investigation of web pages of (not only but to a great extend higher) institutions that are involved in DE and have their activities represented on the Internet.

DE WEB SITES IN SLOVENIA

Research Methods

We expected that all DE institutions have their web pages on the Internet. That is why our research of DE is based on the survey and analysis of Web pages, by using search engines on Slovene Web portals twice (in July 2000 and in February 2001) mainly to be able to check the development of DE in Slovenia.

The following Slovene engines were used: Matľkurja (http://www.matkurja.com), Pehta (http://www.pehta.com), PIVI (http://www.siol.net/iskalnik/query.aps), Portal EON.si. (http://www.eon.si), SIO - Slovensko izobraž evalno omrež je (http://sio.edus.si), SIS - Spletni

imenik Slovenije (http://www.sis.si), SloVista (http://www.slovista.net), SloWWWenia.com (http://www.slowwwenia.com), TOBI (http://slo-web.com), Najdi.si (http://www.najdi.si)

Web pages of DE institutions were found with the help of key words:
- distance learning (in Slovene "ucenje daljavo")
- distance education (in Slovene "studij daljavo")

We also included others DE pages, which we had found indirectly through various links.

DE (Web site) Evaluation Model

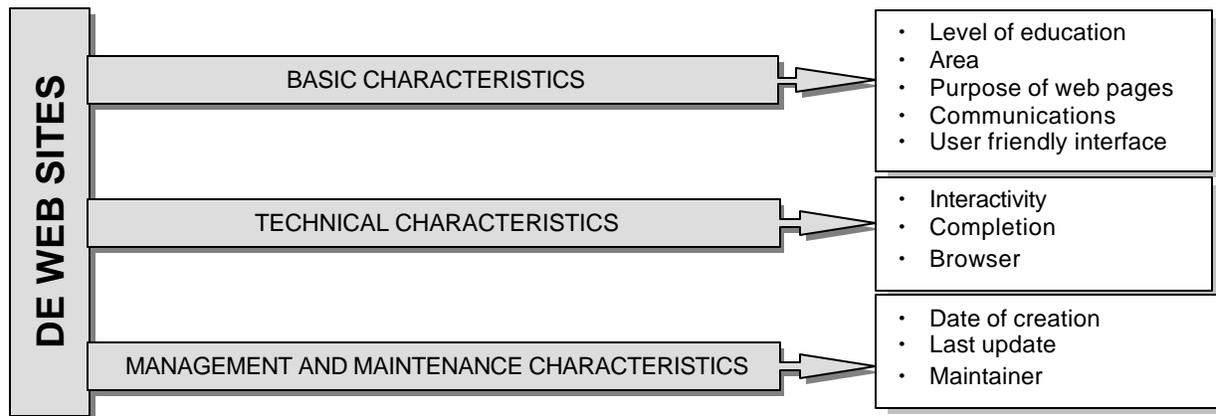The evaluation of DE web sites has been done on the basis of DE Evaluation Model.

Figure 1: DE Web site evaluation model

Characteristics of a Sample

Using Slovene engines 50 web pages were found (in July 2000 only 34) using key words that are, according to their authors – related to DE. Web pages were classified into four groups:
- DE creators and coordinators (6 pages this year; 4 pages previous year)
- DE performers (38 pages this year; 23 pages previous year)
- providing access to DE institutions (1 page this year; 1 page previous year)
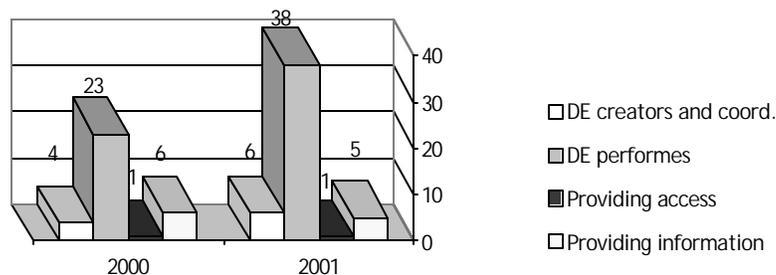- providing information about DE institutions (5 pages this year; 6 pages previous year)

Figure 2: Groups of DE Web pages

Creators and coordinators of DE (6, 12%) were put in the first group of DE web pages. The second group of DE Web pages comprises of pages (of DE institutions), through which DE is performed, according to their opinion. The number of performers of DE has swelled in the last year (from 23 (67%) to 38 (76%) in this year).

In the third group, only one web page was placed, with the role of linking different DE web pages. This is the web page of the so-called Virtual university, through which one can reach faculties and schools of higher education, which are members of the University of Ljubljana.

The fourth group of web pages represents 5 (10%) pages with informative nature and which, we believe do not intend to participate in DE. Such pages mainly offer links to other web pages that do offer DE. Web pages with links to foreign DE institutions were not taken into account, as the purpose of our survey lies in the investigation of Slovene virtual space.

Table 1 presents overview of basic characteristic of DE Web sites.

		f_k	$f\%_k$	Index 01/00	Mean	St. dev.
Level of education	Primary and secondary educ.	36	72	163.6		
	Higher education	10	20	111.1		
	Other (undefined)	4	8	400.0		
Area	Social sciences	20	40	105.3		
	Natural sciences	10	20	166.7		
	Technical sciences	6	12	200.0		
	Other	14	28	233.3		
Purpose of the web page	For learners	30	60	214.3		
	For teachers	1	2	100.0		
	For learners and teachers	7	7	87.5		
	Information	12	24	100.0		
Communication	No communication	7	14	700.0		
	Asynchronous (e-mails)	35	70	145.8		
	Synchronous and asynchrony.	8	16	80.0		
User friendly interface	1 = Difficult to use	5	10	500.0	2.8	0.9
	2 = Not easy to use	13	26	89.1		
	3 = Easy to use	21	42	175.0		
	4 = Very easy to use	11	22	78.6		

Table 1: Basic characteristics of DE Web sites

The surveyed web pages are devoted to various levels of education. In processing the data, it has been taken into consideration that some web pages were meant for the primary, secondary school population and higher education.

The majority of pages are meant for learners or both learners and teachers. The attempt of teachers of Slovene language is an interesting one as it unites learners and teachers on the same page, which unfortunately, has not been updated for a while (http://www.zrsss.si/~slavisti).

Only 30% of the pages have dates when they are built and a bit more than 40% when they are updated. Because of that it is not easy to realize when the pages were built and when they were updated what is a rather important piece of information needed for evaluation of Web pages from maintenance perspective.

Findings and Discussion

Table 2 represents correlation between characteristics of DE Web pages such as level of education, interactivity, purpose, communication, completion and user-friendly interface.

Characteristics of pages	1.	2.	3.	4.	5.	6.
1. Level of education						
2. Interactivity						
3. Purpose		-0.49**				
4. Communication	-0.33*					
5. Completion	0.31*	0.41**				
6. User-friendly interface	0.37**	0.43**		0.49**	0.28*	
7. Area						0.34*

** $p < .01$ (2-tailed), * $p < .05$ (2-tailed)

Table 2: Significant correlations between characteristics of DE web sites

It can be seen that there is a negative correlation between the purpose and interactivity of a web page (-0.49). Pages aimed at learners have a higher degree of interactivity than pages devoted solely to giving information, what is quite logical, as the creators of web pages create different exercises for students, mainly a multiple choice exercises that are easy to be supported by the Web technology. Many people believe how DE should offer an interactive page with exercises, which would help in consolidating or checking knowledge of learners in primary schools. This was also proved by our investigation and the correlation between the purpose and interactivity of the Web pages. But we have to stress that individual interactive pages or a number of interactive pages together can't represent DE, but only a learning aid that can be used during classical lessons as well as in DE.

The higher the level of education the higher the completion of DE Web sites, which can be revealed in the correlation between the level of education and completion (0.31). These pages have better user-friendly interface (0.37). This proves that pages with exercises for learners on primary and secondary level of education consist of only exercises, which is why we assessed them as unfinished. In this case we can speak about learning aids and not about DE.

Later we tried to go a step further with the help of regression analyses.

Included variables	B	T	Sig.
Purpose	-0.318	-3.473	0.001
Completion	0.340	2.656	0.011
F=12.098 Sig. 0.000 Adj R2=0.312			

Table 3: Stepwise regression (dependent variable: Interactivity; Excluded: none)

Included variables	B	T	Sig.
Communication	0.822	4.402	0.000
Level of education	0.222	2.679	0.010
Area	0.225	2.027	0.049
F=10.877 Sig. 0.000 Adj R2=0.377			

Table 4: Stepwise regression (dependent variable: User friendly interface; excluded: Completion)

Regression analyzes showed us that interactivity of DE Web sites depends on purpose and theirs' completion. There is a negative "influence" between interactivity and purpose, which means, that web pages for learning purpose are more interactive. Pages for high level of educations have more user-friendly interface that the others what is not true for pages, which originate from social science area. Pages, which used synchronic or asynchronic ways of communications, have user-friendlier interface what is quite logical.

INTERNET BASED DE IN HIGH EDUCATION

In the high education only Faculty of Economics (FE), Ljubljana (http://www.ef.uni-lj.si) and Doba Maribor (http://www.doba.si) performed DE. DE at FE is offered in traditional way with one exception, the on-line materials for a course on European Economic Statistics (http://www-lt.fe.uni-lj.si). The second institution Doba offers on-line DE supported by WebCT educational environment. On-line DE at Doba has started in September 2000 with 35 enrolled students (For 2001/2002 they have 160 candidates).

Internet based DE is being introduced at Faculty of Economics and Business (FEB) in Maribor, too for e-business course (http://www.uni-mb.si/~epfpodin).

In spring 2001 an experiment with on-line materials instead of regular lectures for e-business course was conducted within which two groups of 20 students participated (experimental and control group). The control group attended classical lectures, the other one studied with on-line materials (http://epf-se.uni-mb.si/e-gradivo/eb-index.htm).

After the experiment students used a questionnaire, composed of two sets of questions. With the first set of questions we asked for their opinion about lectures and on-line materials. As we can see in Table 4 the students preferred the usage of on-line materials opposite to traditional teaching.

| Opinion about on-line materials' usage	Control group	Experimental group
Attraction of on-line materials	81.2%	100%
On-line materials can complement the classical lectures	87.5%	100%
On-line materials need to be used in other subjects	75.0%	100%

Table 4: Usage of on-line materials

With the second set of questions personal data were gathered (about theirs' study achievements and information and communication technology (ICT) "attitude"), by which we tried to estimate students' acceptability of DE.

The acceptability was evaluated on the basis of the model of acceptability of Internet based DE, which includes the following items – participants' characteristics (and theirs' relative weights):

- Motivation (20%),
- Student's connection necessity (8%),
- Possibilities for ICT using and relationship to ICT (32%),
- Abilities for ICT using (30%),
- Usage of e-services (10%).

The students estimated their study motivation and some other characteristics on a five-degree scale. The average value, corrected with standard deviation, was included in the model. The same method was used for assessing theirs' relationships and experiences with ICT. The estimations of DE acceptability, shown in the Figure 3, was calculated through corrected average values for some variables and percents of variables and their relative weights for another variables.

We as also tried to assess FEB students' readiness for DE in general. Because of that 652 students from various FEB programs (different undergraduate and postgraduate, full time and part time) were inquired and gatherer data were analyzed with the model of Internet based DE acceptability. The results are shown in the Figure 3 from where is seen that students in both of postgraduate programs point at higher DE acceptability what is consequence of the higher motivation, yearlong learning experience and higher computer literacy.
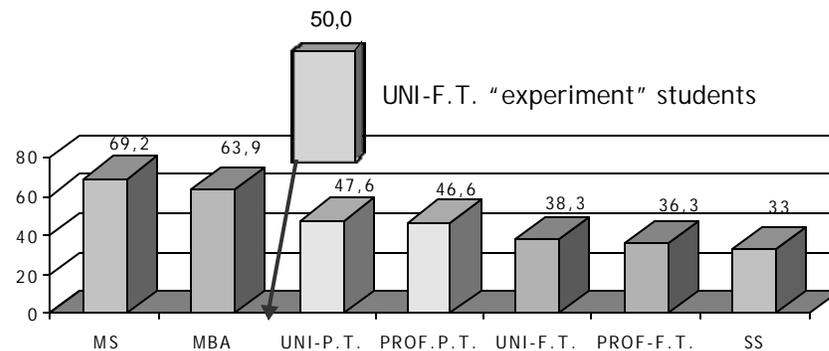
Legend: MS – postgraduate master of science study; MBA – postgraduate MBA study; UNI – university (4 year) program; PROF – professional (3 year) program, P.T. – part-time study, F.T. – full-time study; SS – secondary school

Figure 3: FEB students' acceptability for DE(10)

Based on the gathered data from the students, who participated in the experiment and the model of acceptability of DE, their DE acceptability was estimated, too. The estimated value 50 is higher compared to the acceptability estimated for FEB university program full-time students (38,3) (10). Higher acceptability of DE can be explained with their higher computer literacy and with better ICT experience in education process obtained by using various on-line materials from the e-business course's web site (http://www.uni-mb.si/~epfpodin).

CONCLUSION

Major findings of the research about Interned based DE in Slovenia are:

- DE web pages are the result of considerable amount of enthusiasm of individuals and are still in their initial development phase in Slovenia.
- Such a DE is carried out only by Doba Maribor and to a certain extent at Faculty of Economics Ljubljana.
- The first step toward DE at Faculty of Economics and Business (FEB) in Maribor has been done, too (for the e-business course). The students prefer on-line materials and DE is generally acceptable especially among postgraduate students so the possibilities for Internet based DE at FEB exist and FEB needs to take the necessary steps to exploit the opportunity.

And finally because of the swift development of DE in Slovenia, we are to expect in near future a number of DE Web sites on one hand and researches in this field on the other, which will cover not only the technical, but also the organizational, legal, social and didactic aspect.

REFERENCES

1. Bešter, J., M. Pustišek, L. Zebec, M. Papiè. (2000). Analiza mož nosti uporabe informacijske in komunikacijske tehnologije pri podpori izobraž evanja na daljavo v osnovnih in srednjih šolah. Fakulteta Za Elektrotehniko – Laboratorij Za Telekomunikacije, Ljubljana.. Available: http://www-lt.fe.uni-lj.si/lti/login_osnovna_sola.html [21.07.2000].
2. Bregar, L. (1998a). Študij na daljavo na Ekonomski fakulteti: Izkušnje za prihodnost. Vzgoja In Izobraž evanje 3,14-20.
3. Bregar, L. (1998b). Študij na daljavo – nove poti komuniciranja v procesu izobraž evanja. Ekonomska Fakulteta, Ljubljana.. Available: http://www.ef.uni-lj.si/ncp/slo_1250/papers.html [15.02.2000].
4. Distance-Educator.com. Distance education: An Introduction. Available: http://www.distance-educator.com/portals/research_deintro.html [05.10.00].
5. Keegan, D. (1991). Foundations Of Distance Education. 2nd Edit. Routledge, London and Ney York.
6. Microsoft. (1998). Online Learning Resource Kit Vol.1. Microsoft's Online Learning Strategy - John Dubois.
7. Mirk (2000). Available: http://www.mirk.si/skoljka/help/help_about.html [21.07.00].
8. Ris – Raba Interneta S Sloveniji (1999). Available: http://www.ris.org/si/ris99/news/n20000211.html [18.07.2000].
9. Sulèiè, V. (2000). Vpliv informacijske tehnologije na izvajanje študija na daljavo; Seminarska naloga pri predmetu informatika v storitvenih organizacijah - Magistrski študij. Ekonomsko-poslovna fakulteta, Maribor.
10. Sulèiè, V. (2001). Vpliv informacijske tehnologije na študij na daljavo v Sloveniji. Magistrsko delo. Ekonomsko-poslovna fakulteta, Maribor.
11. Surs – Statistièni Urad Republike Slovenije. (1999). Statistièni letopis Republike Slovenije 1999. Available: http://www.sigov.si:90/zrs/slo/index.html [13.07.2000].
12. The Johns Hopkins University School of Public Health - Distance Education Division. Available: http://distance.jhsph.edu/acpro/cyber_campuses.cfm [08.03.01].
13. The Whatis.Com. Available: http://www.whatis.com/ [27.07.2000].