

THE IMPACT OF E-LEARNING IN HIGHER EDUCATION

Maria-Lavinia Popescu¹

Abstract

In the recent years, massive changes in policy, governance, structure and status of higher education have been taken place all over the world. Environmental changes, such as privatization, diversification, decentralization, internationalization and increased competition in higher education are common to most countries. The study it is based by primary quantitative research method by conclusive-descriptive nature focused by the divided plans or transversal research. The dates collect method has been “face to face” investigation and the research instrument the questionnaire. The quantitative dates processed using SPSS. This paper achieved on the basis of punctual investigation represents photography for the time being of students by two universities.

Key Words: student, higher education, marketing, research, e-learning

1. Introduction

It is widely accepted that the marketing concept has known a number of evolutionary stages in the developed countries and these stages are also known as marketing approaches or marketing philosophies. Some have associated such approaches with the history of the businesses and come up with a number of orientations according to the different aspects emphasized by the organisations in time: the production era, the sales era, the marketing concept era and the societal marketing era (Berkovitz, Kerin and Rudelius, 1989). Similarly, Kotler (1991) considers that there are five concepts under which organizations conduct their marketing activity, namely the production concept, the product concept, the selling concept, the marketing concept and the societal marketing concept. Among those, the last two are of interest to us, as they contain the core of the marketing concept, as it is used today by most organizations: „*The marketing concept holds that the key to achieving organizational goals consists in determining the needs and wants of target markets and delivering the desired satisfaction more effectively and efficiently than competitors*” (Kotler, 1991, p.16).

Marketing theories and concepts, which have been effective in business, are gradually now being applied by many universities (Hemsley–Brown and Oplatka, 2006; Temple and Shattock, 2007) with the purpose to gain competitive advantage.

¹ PhD candidate, Faculty of Economics Science and Business Administration, Babeş-Bolyai University, Cluj-Napoca, e-mail: lavinia.popescu@econ.ubbcluj.ro . Investing in people! Ph.D. scholarship, Project co-financed by the SECTORAL OPERATIONAL PROGRAM FOR HUMAN RESOURCES DEVELOPMENT 2007 – 2013 Priority Axis 1. "Education and training in support for growth and development of a knowledge based society" Key area of intervention 1.5: Doctoral and post-doctoral programs in support of research. Contract nr.: POSDRU/88/1.5/S/60185 – “INNOVATIVE DOCTORAL STUDIES IN A KNOWLEDGE BASED SOCIETY” Babeş-Bolyai University, Cluj-Napoca, Romania

Faculty members are always looking for ways to keep their students' attention, encourage better preparation for class, and improve students' attitudes and satisfaction.

The higher education sector has two main features that influence the marketing ideas that can be applied to it. First of all higher education in most countries is a non-profit sector, therefore marketing concepts applied to the sector do not function as in the business sector, where the primary goal is profit making. Second higher education is a service; therefore all peculiarities applicable to the marketing of services apply to higher education. These aspects have an effect on how higher education institutions operate nowadays and they are seen as the driving forces for higher education (Maringe, 2006).

Thus, this paper is structured in four parts: introduction, theoretic background, research which provides information about the perception of students as regards the e-learning system in two universities: one Romanian university, "Babeş-Bolyai" University, and one French University, "Jean-Moulin" University. The last part presents the principal and the most important conclusions.

2. Theoretical Delimitations In E-Learning

E-learning refers to using electronic applications and processes to learn. E-learning applications and processes include web-based learning, computer-based learning, virtual classrooms and digital collaboration. Content is delivered via the internet, intranet, extranet, satellite TV, and CD-ROM with multimedia capabilities (ISP, 2004). E-learning programs are saved on the internet/intranet and can be accessed any time, anywhere, regardless of the computer platform, as long as the user has subscribed to an internet service provider (ISP).

Lincoln (2008), in discussing the issues with large classes, noted the challenges (a) facing faculty members to get students to attend class, pay attention, and participate; and (b) for faculty to understand where students are at in their learning process and to manage the course effectively. Interactive Technology (also called audience-response systems or clickers) may be one technological tool that can help faculty accomplish these goals (Lincoln; Terreri and Simons, 2005). Kurdziel (2005) noted five reasons for educators to use an audience response system: (a) to address the limitations of traditional lectures, (b) to engage students, (c) to provide feedback to both students and instructors, (d) to effectuate learning gains, and (e) to realize improvements in attitudes. An advantage of using Interactive Technology is that it gives a professor an objective means to track participation.

The experts in e-learning in higher education agreed there are contentions about e-learning technologies in the following areas: (1) a platform for ideal speech; (2) greater opportunities for interactions; (3) the extent to which communities of learners can be created; (4) provision of a new kind of learning environment; (5) a platform for discussions; (6) demand for e-learning by students; (7) the degree to which the environment is equal and equitable; and (8) the quality of the learning experience.

As a result of the increased integration of Internet and web-based communication technologies, which we refer to as simply "e-learning," higher education has moved into a

third decade of change in how courses and programs are designed and delivered. During this time, e-learning technologies have produced an intense, immediate, and disruptive transformation on higher education (Archer, Garrison and Anderson, 1999). Enthusiastic early adopters of e-learning argued that there are many new possibilities offered by these technologies for educators in higher education. These enthusiastic accounts were soon followed by the creation of task forces to assess e-learning’s potential.

Leaders in the field of higher education asserted that e-learning technologies can respond effectively to accelerating global competition (Daniel, 2000), increase the quality of learning experiences (Garrison, 2002), remove situational barriers (Bates, 2005), and be more cost effective than face-to-face learning (Twigg, 2003). With the continued rise of e-learning technologies, a frequently asked, and investigated, question has been: Can e-learning deliver on these promises?

Beginning almost three decades ago researchers have attempted to answer this question (e.g., Hiltz and Turoff, 1978, 1985; Hiltz, Johnson and Turoff, 1986); more recently, extensive literature reviews have been conducted.

The literature reviews concluded that the research has been uneven, there is evidence that educators in higher education believe that e-learning technologies (1) have a positive impact on course delivery and student learning, (2) are effective at achieving greater student participation and student interest, and (3) allow opportunities to improve critical thinking (Saundercook and Cooper, 2003). Consistent with these perceptions, a good deal of the literature also suggests that e-learning can transform learning experiences in positive ways, resulting in an increase in the quality of learning experiences (Garrison & Anderson, 2003; Heckman and Annabi, 2005; McKnight, 2001). In particular, it has been argued that e-learning technologies facilitate the development of argument formation capabilities, improve written communication skills, require greater complex problem solving abilities, and increase opportunities for critical and reflective thinking (Abrami and Bures, 1996; Garrison, Anderson, and Archer, 2001; Hawkes, 2001; Winkelmann, 1995).

Badrul Khan (2001) examined the critical dimensions necessary for quality learning online and found eight primary categories: institutional, management, technological, pedagogical, ethical, interface design, resource support, and evaluation (Khan, 2001). Each dimension, presented in Table 1, is integral to a systems approach for evaluating quality.

Khan’s Eight Dimensions of E-Learning Framework (2001) – table 1:

Table 1: Descriptions of e-learning dimensions

Dimensions of E-Learning	Descriptions
Institutional	The institutional dimension is concerned with issues of <i>administrative affairs, academic affairs, and student services</i> related to e-learning.
Management	The management of e-learning refers to the <i>maintenance of learning</i>

	<i>environment and distribution of information.</i>
Technological	The technological dimension of the E-Learning Framework examines issues of technology infrastructure in e-learning environments. This includes <i>infrastructure planning, hardware, and software.</i>
Pedagogical	The pedagogical dimension of E-learning refers to teaching and learning. This dimension addresses issues concerning <i>content analysis, audience analysis, goal analysis, media analysis, design approach, organization, and methods and strategies</i> of e-learning environments.
Ethical	The ethical considerations of e-learning relate to <i>social and political influence, cultural diversity, bias, geographical diversity, learner diversity, information accessibility, etiquette, and the legal issues.</i>
Interface Design	The interface design refers to the overall look and feel of e-learning programs. Interface design dimension encompasses <i>page and site design, content design, navigation, and usability testing.</i>
Resource Support	The resource support dimension of the E-Learning Framework examines the <i>online support and resources</i> required to foster meaningful learning environments.
Evaluation	The evaluation for e-learning includes both <i>assessment of learners and evaluation of the instruction and learning environment.</i>

According to Khan, this comprehensive model may also be used for strategic planning and program improvement and has been widely adopted. Each dimension or category of quality indicators contained sub-dimensions that also may be used as quality indicators for program evaluation.

Toral et al. (2009) offered that satisfaction relates to perceptions of being able to achieve success and the feeling of achieving desired outcomes. Furthermore they stressed the idea that “learner satisfaction must be explored through a multidimensional analysis that considers a wide variety of critical dimensions so as to provide effective metrics that guide improvements in instructional design” (Toral et al., p. 190). Their analysis of satisfaction in an electronic instrumentation course found satisfaction to be driven by the user interface, ease of use, enthusiasm, and motivation. This suggests that attitude does impact satisfaction and that both cognitive and affective dimensions need to be considered (Toral et al.). Khan (2009) offered that those who use computers more often feel more engaged in their learning and feel more that computers aided their learning and interaction with faculty and students.

With the view to realize the research I extracted a pattern with 124 persons by students of “Jean Moulin” University and 204 students of “Babeş-Bolyai” University. I used the proportionally stratification investigation in function with the students percent in mother population and in same times in report with repartitions by faculty. One advantage of stratification investigation in report with others probabilistic method is the increase of accuracy of estimations made. Only the proportionally stratification investigation (“representative stratification”) is which can be interpreted as a census [Chirouze Y., 1993]. The interest of this investigation type is that number of persons asked having common characteristics is proportionally with layer population. The proportionally stratification investigation assures a investigation rate “n/N” in each layer equal with on the whole population “n/N”.

3. Students Perception Of E-Learning System

The perception is the process of mind through which the objects and the phenomenon by objective world which act by sense organs are reflected in the totality of their characteristic, as an unitary entire, image resulted after all by these reflections. When the students are asked “You used the e-learning system?” 41.50% claimed that they used this learning technique, while 58.5% between they don’t experimented till this moment.

Standard Deviation is a measure of degree of elements scatter which are measured with the same unit of measure as the initial data. Usually it is reported together with the mean. By analysis can observe that for this question it is obtained 0.493 standard deviation fact which shows a little difference from the mean.

The value of variance 0.243 (it is much more 0.05) demonstrated that for the mean for the two clusters can’t conclude that they differ very much.

Table 2: The use of e-learning system; Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Are you used the e-learning system?	328	0	1	0.41	0.493	0.243
Valid N listwise	328					

By the simultaneous analysis of question which regards the use of e-learning system, respective of university follow in present can observe the fact that approximate the same percent between the students of “Babes-Bolyai” University both the students of “Jean Moulin” University used this learning type (41.93%, respectively 41.18%)

Table 3: The e-learning system in report with the university followed

		The university follows in this moment		Total
		Jean Moulin	Babes-Bolyai	
Are you used the e-learning system?	no	72	120	192
	yes	52	84	136
Total		124	204	328

Table 4: The e-learning system in report with the genre of subject

		Your genre		Total
		female	male	
Are you used the e-learning system?	no	153	39	192
	yes	93	43	136
Total		246	82	328

In table 4 can observe that the number of male persons which have been interested to use the e-learning technics it is less than the female persons in absolute value, but this fact it is because the pattern had 246 women and 82 men. As regards the percent of persons which they are used e-learning in all female population that is only at 37.80% while the men percent which used the e-learning in all population by male genre it is much more being 52.44%.

Table 5: The e-learning system in report with the genre of subject.

Symmetric Measures

	Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Interval by Interval Pearson's R	.129	.056	2.342	.020 ^c
Ordinal by Ordinal Spearman Correlation	.129	.056	2.342	.020 ^c
N of Valid Cases	328			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

The correlation analysis it is used for study the intensity of link between the variables. In strict sense, the correlation is a measure of intensity between variables. For stable the correlation between two dimensions in SPSS can be calculate three correlation coefficients: Pearson, Spearman and Kendall. The value of coefficient indicates the intensity of link and much more is very proximal to 1, the link is very strong, and much more the value is proximal to 0, the link is skinny. The correlation coefficient equal with +1 indicates one direct perfect link between the variables. The correlation coefficient equal with -1 shows one inverse perfect link. In this study I used the first two indicators: Pearson, respectively Spearman which is 0.129, and fact which indicates one relative skinny link between the variables: e-learning use and genre of person.

The Sig. Value equal with 0.000 emphasizes that it is obtained one significant correlation coefficient at 0.01, so they are chances less 1% to makes a mistake if we affirm that between the two variables is one significant correlation. By the analysis of value obtained, respectively 0.020, we can say that between the two variables is one correlation.

Table 6: Principal reason for use the e-learning system in report with the university

If yes, what it is the principal reason for	The university follows in this moment			Total
		Jean Moulin	Babes-Bolyai	
	commodity	13	16	29
	information varied	9	33	42
	less time	11	7	18
	curiosity	9	12	21

use the e-learning method?	supplementary information	9	15	24
	other	1	1	2
	no answer	72	120	192
Total		124	204	328

The major part between the students which used this learning method and which they are register at Jean Moulin said that it is one commode method (13 students) and it is necessary little time (11 persons). 17.30% between the students which used this technics affirm that it is one method which offers varied information, curiosity or the acquirement of supplementary information.

Between the UBB students which used e-learning approximately 40% affirm that they resorted to this system because it offers varied information, while reasons as the commodity or the necessity of some supplementary information which can be obtained by this way hit 19%, respective 17.85%. For the UBB students the curiosity or less time used are reasons more rare invoked.

Between 136 students which used e-learning the major part claimed that they are unsatisfied or neuter as regards the quality of information obtained trough this method. Only 12.50% between the users of this system are very satisfied by information quality on which they accessed with the help of e-learning, but the percent of satisfied individuals increases at 21.32%.

If we analyze the degree of users' satisfaction of e-learning in function with the university which they follow can observe that: the "Jean Moulin" students are 9.62% very satisfied by the quality of information obtained, 30.77% are satisfied and the percents of persons neither satisfied nor unsatisfied or unsatisfied surpass 25% for each category.

The percent of UBB who say that they are rather unsatisfied or neither satisfied nor unsatisfied by the information quality which they can procure with the e-learning help cumulate 64.28% surpassing with 10% by their French homolog which have the same opinion. The percents of persons register at UBB and which are satisfied or very satisfied by the quality of information obtained with the help of e-learning are approximate 25% each of them.

Table 7: The appreciation of information quality in report with the university followed

		The university follows in this moment		Total
		Jean Moulin	Babes-Bolyai	
The appreciation of information quality	very satisfied	5	12	17
	satisfied	16	13	29
	neither satisfied, nor unsatisfied	14	27	41
	unsatisfied	15	27	42
	very unsatisfied	2	5	7
	no answer	72	120	192
Total		124	204	328

By the actuality of information provided through e-learning 11.53% between “Jean Moulin” students claimed very satisfied and 20.23% between the “Babeş-Bolyai” students. The percentage for the satisfied students by data actuality offered by e-learning increase till at 37.04% for “Jean Moulin” University, but decrease till at 9.52% for “Babeş-Bolyai” University.

The unsatisfied or very unsatisfied number by information actuality it is very much for UBB students’ touch 50% between the populations studied which used the e-learning, but it is less at “Jean Moulin” (only 19.23%).

Table 8: The appreciation of information actuality in report with the university followed

		The university follows in this moment		Total
		Jean Moulin	Babes-Bolyai	
The appreciation of information actuality	very satisfied	6	17	23
	satisfied	20	8	28
	neither satisfied, nor unsatisfied	16	17	33
	unsatisfied	9	28	37
	very unsatisfied	1	14	15
	no answer	72	120	192
Total		124	204	328

4. Conclusions

The bigger and bigger competition by present stressed the strategic importance of satisfaction and of quality in the competition for to gain consumers and for to maintain certain substantially competitive advantages (Popescu, 2010).

Electronic learning (e-learning) is an evolving, dynamic and rapidly changing educational opportunity that is a product of the advanced information technology environment. E-learning is essentially the network-enabled transfer of skills and knowledge (Anon, 2006). The internet is the largest, most powerful computer network in the world. It encompasses

several million computers with internet addresses that are used by millions of people around the world. Through the internet, all sources of information on different subjects are available any time, anywhere. It is expected that e-learning will soon play a greater role at the higher education level, as well as middle and primary school levels, and non-formal education will become one of the main functions of e-learning (Zenaida, 2004).

On the base of the study made can conclude that both the Romanian students and the French students used the e-learning system, but the principal reason for use has been different in function the university.

Internet becomes, in every day, the referee of education and culture access, and the most adequate form from to come in the meet of knowledge needs and continuous formation is e-learning (Popescu, 2011 (a)). Thus, today, to can to survive organizations must know their customers very, very well (Popescu, 2011 (b)). Only in this manner the organization can obtain the competitive advantage.

References

1. Abrami, P. C., Bures, E. M. (1996) – “Computer-supported collaborative learning and distance education”, *American Journal of Distance Education*, 10(2), pp. 37-42
2. Anon (2006) – “Learning in the New Economy”, last updated: not available, www.linezine.com/elearning.htm, date visited: March 2006
3. Archer, W., Garrison, R. Anderson, T. (1999) – “Adopting disruptive technologies in traditional universities: Continuing education as an incubator for innovation”, *Canadian Journal of University Continuing Education* 25(1), pp. 13-30
4. Berkowitz, E.N., Kerin, R.A., Rudelius, W. (1989), *Marketing*, Irwin
5. Chirouze Y., (1993) - “Le marketing: Les études préalables à la prise de décision, Enseignement Supérieur Tertiaire”. Paris: Ed. Elipses
6. Garrison, D. R., Anderson, T. (2003) - *E-Learning in the 21st century: A framework for research and practice*. London: Routledge/Falmer
7. Garrison, D. R., Anderson, T., Archer, W. (2001) – “Critical thinking, cognitive presence and computer conferencing in distance education”, *American Journal of Distance Education*, 15(1), pp. 7-23
8. Hawkes, M. (2001) – “Variables of interest in exploring the reflective outcomes of network-based communication”, *Journal of Research on Computing in Education*, 33(3), pp. 299-315
9. Heckman, R., Annabi, H. (2005) – “A content analytic comparison of learning processes in online and face-to-face case study discussions”, *Journal of Computer Mediated Communication*, 10(2). Retrieved December 13, 2006, from <http://jcmc.indiana.edu/vol10/issue2/heckman.html>
10. Hemsley-Brown, J., Oplatka, I. (2006) – “Universities in a competitive global marketplace”, *International Journal of Public Sector Management*, 19, no. 4, pp. 316-338
11. Hiltz, S. R., Turoff, M. (1978) - *The network nation: Human communication via computer*. Reading, MA: Addison-Wesley.
12. Hiltz, S. R., Turoff, M. (1985) – “Structuring computer-mediated communication systems to avoid information overload”, *Communications of the ACM*, 28, pp. 680-689.
13. Hiltz, S. R., Johnson, K., Turoff, M. (1986) – “Experiments in group decision making: Communication process and outcome in face-to-face versus computerized conferences”, *Human Communications Research*, 13(2), pp. 225-252

14. ISP (2004) – “Getting started with e-learning”, last updated: November 2004, isp.webopedia.com/TERM/E/e_learning.html, date visited: January 2006
15. Khan, M. B. (2009) – “Effects of information technology usage on student learning — An empirical study in the United States”, *International Journal of Management*, 26, pp. 354–364
16. Kotler, Ph. (1991) - *Marketing Management*, Prentice Hall International
17. Kurdziel, J. (2005) - *Engaging students in large lectures using a classroom response system*. Retrieved from www.crlt.umich.edu/faculty/JoKurdziel02-05.pdf
18. Lincoln, D. J. (2008) – “Teaching with clickers in the large-size principles of marketing class”, *Marketing Education Review*, 18(1), pp. 39–45
19. Maringe, F. (2006) – “University and course choice”, *International Journal of Educational Management*, 20, no. 6, pp. 466-479
20. McKnight, C. B. (2001) – “Supporting critical thinking in interactive learning environments”, *Computers in the Schools*, 17(3/4), pp. 17-32
21. Popescu, M.L., (2010) – „Consumers Satisfaction of Higher Education Services A Problem of Education of 21st Century”, *Annals of the University of Petroșani, Economics*, Vol. X, part II, Universitas Publishing House, Petroșani, Romania, pp. 267-279
22. Popescu, M.L., (2011 (a)), - „E-learning or Classic Education”, *Journal of Management Systems&Operations Management*, Vol. 5(1) Editura Universitara, București, pp. 121-130
23. Popescu, M.L., (2011(b)) – “Higher Education Services – Marketing –Mass or Marketing Segmented?”, *Journal of European Economy*, Vol 10, Special issue, 2011, Ternopil National Economic University, Ukraine, pp. 358-370
24. Saundercook, J., Cooper, P. M. (2003) - *4th annual technology and student success in higher education. A research study on faculty perceptions of technology and student success*. Toronto, ON: McGraw-Hill Ryerson
25. Temple, P., Shattock, M. (2007) – “What does „Branding” mean in higher education?” In Stensaker B. and D’Andrea V. (eds.) *Branding in Higher Education. Exploring an Emerging Phenomenon*, EAIR Series Research, Policy and Practice in Higher Education, pp. 73-82
26. Toral, S. L., Barrero, F., Martinez-Torres, M. R., Gallardo, S., Duran, M. J. (2009) – “Modeling learning satisfaction in an electronic instrumentation and measurement course using structural equation models”, *IEEE Transactions on Education*, 52(1), pp. 190–199
27. Winkelmann, C. L. (1995) – “Electronic literacy, critical pedagogy, and collaboration: A case for cyborg writing”, *Computers and the Humanities*, 29(6), pp. 431-448
28. Zenaida, T. D. (2004) – “Present-day Profiles, Prospects and Challenges on the use of ICT for Education in South East Asia”, The Seminar-workshop on “e-Learning”-Seventh Programming cycle of APEID Activities, Japan