

What are the prospects of e-learning in Ukraine? Pilot study of a lecturer's endeavor to promote e-learning

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The purpose of this paper is to help lecturers ensure that their endeavor to promote e-learning will add significant value to our students' learning. We created a model and questionnaire 'Endeavor to promote e-learning'. Context for the study is thought of as the evaluation, potency, and activity of endeavor to promote e-learning.

Keywords: E-learning, lecturers, endeavor to promote e-learning, model 'Endeavor to promote e-learning', a questionnaire 'Endeavor to promote e-learning'

Introduction

E-learning has spread globally in the past few years. E-learning has become a typical tool of international higher education. It is understood that all appropriate measures should be taken to intensify national efforts in respect of the participation of lecturers in promoting e-learning.

We understand that e-learning has the potential benefits in terms of the quality of student learning (Zhornova and Zhornova, 2012). We must push the boundaries of information and communications technology in education, seeking to exploit all its capacities and resources to improve outcomes to promote e-learning in Ukraine (Zhornova and Zhornova, 2010).

The purpose of this paper is to help lecturers ensure that their endeavor to promote e-learning will add significant value to our students' learning. We believe this will result in better learning conduction and a more rewarding learning experience for higher education in Ukraine. The idea that lies behind this pilot study is that although the higher education institutions are the key element of the system of innovation, they cannot promote to provide constructive, timely feedback (Zhornova and Zhornova, 2011).

Research studies on e-learning support measures in Ukraine are plentiful. The research studies cover six major areas:

- Informatization of educational institutions
- Electronic informational recourses and network technologies
- Research and design of educational environment
- Complexes and learning tools
- Informational and analytically studies for pedagogical innovations

- Computer oriented systems of education and research.

Many studies have been made in Ukraine recently in these mentioned areas of e-learning. However lecturer's endeavor to promote e-learning not been studied yet (Zhornova and Zhornova, 2013a; 2013b).

Method, results and discussion

E-learning support measures are not an easy term to define, yet we know it when we see it. The endeavor to promote e-learning is defended of as the evaluation, potency, and activity of lecturers (Figure 1, Appendix).

Changes of (a) evaluation, (b) potency and (c) activity are measured by the criterion 'Irreducible complexity':

- Resources of ICT, their various quantitative and qualitative combinations, as well as the amount of resources used ICT; content: from a few basic ways a simple algorithm of execution, which are common in domestic practice, to modify them, new ways that have complex algorithms of actions: levels: ordinary, combined, complicated;
- Measure of efforts in promoting e-learning; content: from adaptive processes, adaptive plan to transform their processes and design; levels: less out, medium out, most out;
- The cumulative totals in using ICT, trajectory of participation in promoting e-learning; content: their new destinations with its own methods are often not adapted to domestic practice, and this inevitably leads to the need for self-improvement; levels: downward, linear, highest point.

To assess the lecturer's effort to promote e-learning we created a questionnaire 'Endeavour to promote e-learning'. The questionnaire includes three questions. Each question is corresponded to one of the three possible answers to choose.

1. How do you assess the level of your master of ICT over the past three years in terms of irreducible complexity?

A. ordinary: I use a few basic ways of simple algorithm execution which are common in domestic practice.

B. combined: I use a combination a few basic ways.

C. complicated: I use a modification a few basic ways and new ways that have complex algorithms of actions.

2. How would you describe your attitude to the functions and ICT over the past three years in terms of irreducible complexity?

A. less out: The functions and relations have preserved from adaptive processes, adaptive plan.

B. medium out: The functions and relations have transformed.

C. most out: The functions and relations have remained to design processes.

3. How would you characterize the dynamics of the use of ICT for the last three years as a trajectory of 'distance traveled'? Trajectory of participation in promoting e-learning.

A. downward: This is a downward trajectory.

B. linear: This is a linear trajectory.

C. highest point: This is a highest point trajectory.

This questionnaire should require about 12-15 minutes of time.

The survey is conducted in 3 stages: the first stage - starting estimation of endeavor to promote e-learning; the second stage - actualization of technological self-assessment; the third stage - final estimation of endeavor to promote e-learning. Thus, we have got two estimates of a lecturer's endeavor to promote e-learning, respectively before and after the actualization of technological self-assessment.

At the stage of ‘Actualization of technological self-assessment’ lecturers give answers to questions about their experiences in the field of technology by dint of questionnaire ‘Technological self-assessment’ (Murdoch and Muller, 2011). This questionnaire should require about 8-10 minutes of time.

We interpret the results of a Questionnaire ‘Technological Self-Assessment’ at the following levels: 0-3 check - low level; 4-9 - entry level; 10-15 - basic level; 16-20 - advanced level (see in the Appendix). Thus we have such empirical data (Table 1, Appendix). Empirical data were collected from the sample group by using the above mentioned tools. We strictly followed ethical issues for response collection.

After lecturers answered the question ‘How many statements did you check?’ we set the level of their technological self-assessment. Out of 43 respondents, the vast majority shows a low technological self-assessment (of respondents 26), almost a third has the entry level (13 respondents) and less than one in ten show the basic level (4 respondents): advanced level was not found (Figure 2, Appendix). These results indicate that lecturers are not fully prepared for the so-called ‘bang education.’

Next, we proposed the lecturers to study the Massachusetts Technology Self-Assessment Tool (Massachusetts Technology Self-Assessment Tool). Particular attention is paid to the Standard asked 3 - Teaching & Learning with Technology.

Further discussion topics were: difficulties to determine personal technology professional development needs; how to find and participate in appropriate technology professional development activities offered; inability to identify and discuss technological skills needed in the workplace, as well as strategies for the acquisition of these skills; lack of experience in the use technology to challenge students to develop higher order thinking skills and creativity.

Let us analyze the data on endeavor to promote e-learning (see Figure 3, Appendix).

It can be observed that the mean values of the scales ‘Resources’, ‘Trajectory’, ‘Efforts’ indicated that the overall dynamics of endeavor to promote e-learning were high. General trend of endeavor to promote e-learning is the reduction assessment.

Most significantly reduced assessment ‘The amount of resources used ICT’ (from 2.23 to 1.7). Lowest assessment is reduced assessment ‘Trajectory of participation in promoting e-learning’ (from 2.12 to 1.6). Especially pay attention to the fact that these changes can be found in assessment ‘Measure of efforts in promoting e-learning’. This means that lecturers significantly changed understanding of their experience in the field of e-learning.

Actualization of technological self-assessment was reflected in the individual profiles of the respondents. Individual profiles of the respondents are presented in Figures 4-6 (Appendix).

The next part of the analysis of empirical data dealt with this question: Can we say that after actualization of technological self-assessment observed significant shift towards a more complete understanding of endeavor to promote e-learning?

For this we used the sign test. Raw data are listed in the Table 2 (Appendix). From the Table 2 we see that there are no negative changes. However, we see a large number of zero shifts. Out of the 43 respondents, almost half 21 show a no change at scale ‘Trajectory’, nearly one-third (13) at scale ‘Recourses’, at scale ‘Efforts’ - only 18.6% (8).

Formulated hypotheses are the following:

H_0 : Positive change after actualization is random.

H_1 : Positive change after actualization is coincidental.

The Table 3 (Appendix) shows the decision. Next we did a correlation analysis. Table 4 (Appendix) shows a correlation between endeavor to promote e-learning and technological self-assessment.

After actualization of technological self-assessment the relation between 'Resources', 'Trajectory', 'Efforts' is a strong. Also the relation is a strong between 'Resources', 'Trajectory', 'Efforts' and technological self-assessment.

The relation between start endeavor to promote e-learning and finally endeavor to promote e-learning is not a simple one. There is an exception: the 'Resources1' was not significantly correlated with 'Resources'; 'Efforts1' was not significantly correlated with 'Resources'.

Interestingly, levels of technological self-assessment were significantly correlated with all scales of start endeavor to promote e-learning and were not significantly correlated with all scales of finally endeavor to promote e-learning.

Conclusion

Described results are confirmed by the fact that in today's society in Ukraine lecturers are not willing to promote the e-learning in education, although being aware that in the future a high level of e-learning in education will deliver good results. While it is unlikely that one condition or event will dramatically alter a lecturer's endeavor to promote e-learning or will positively impact all of lecturers, it is important to acknowledge that endeavor to promote e-learning' is dynamic.

What conditions might favor the development of endeavor to promote e-learning? We believe that we need the necessary thorough program to promote e-learning.

Particular attention should be given to such matters: the use of appropriate ICT resources; finding appropriate ICT resources; study of technological proficiency's necessary for lecturers; discussion of strategies for acquiring e-learning proficiency's.

Faculty members can receive grants for using technology in the higher education intuitions and developing new learning technologies.

The measurement of the actual endeavor to promote e-learning should include steps:

1. Conduct a self evaluation. Assess what field of ICT lecturers best qualify for hair level endeavor to promote e-learning such as application of existing simple technology, application of existing advanced technologies, modification of existing technology, and initial development of new technology. The results must be measured and data stored.
2. Formulate goal lecturers could accomplish in the three years of a grant that the trajectory path was up, that lecturers goals.
3. The information must be relayed to the top-manager, not in the raw-data form in it was captured in, but in a context that will add it their endeavor to promote e-learning' significant value to students' learning.

Given this, it is not surprising that e-learning is not most abundant in hair education institute where access to ICT is limited, where shading is monitoring. Many lecturers want a recipe to follow when it comes to designing a parameter of interest criterion 'Irreducible complexity' of e-learning support measures. They want for a step-by-step process that explains what to do and when to do it, insuring success. These conditions could have favored the evolution of e-learning in Ukraine.

Research limitations

The limitation of this study is the population sample. The study does not include specific lecturer's workload accordance with the features: (a) degree profile; (c) field of education; educational programmers, in particular duration of educational programme; (d) field of study, profile of study, and duration of study programmer.

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Appendix

FIGURE 1. MODEL 'ENDEAVOUR TO PROMOTE E-LEARNING'

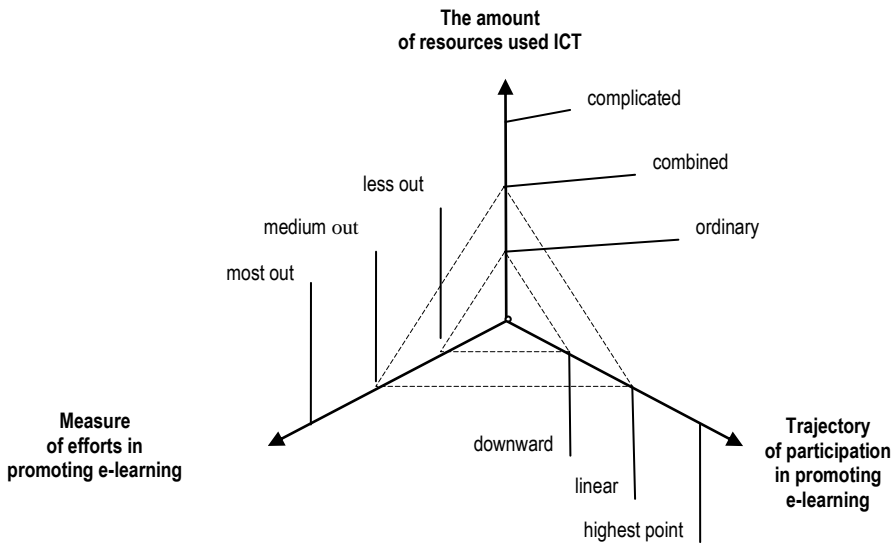


FIGURE 2. HOW LECTURERS SCORE ON THE LEARNING EXPLOSION SCALE: RESULTS OF TECHNOLOGICAL SELF-ASSESSMENT

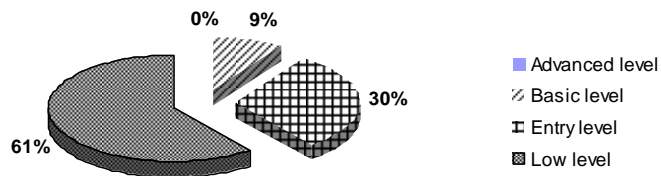


FIGURE 3. ENDEAVOUR TO PROMOTE E-LEARNING:
DYNAMICS OF AVERAGE VALUES

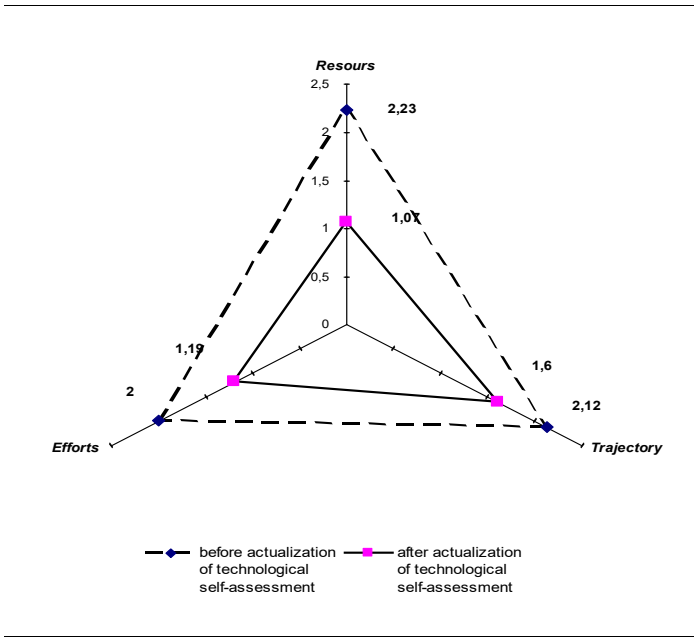


FIGURE 4. THE DYNAMIC OF 'RESOURCES'

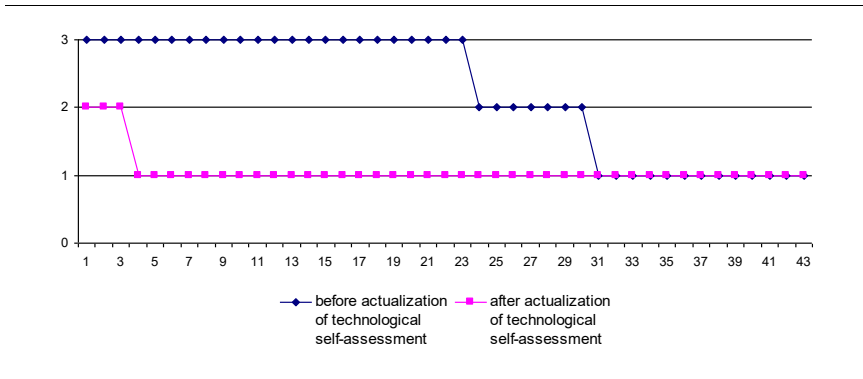


FIGURE 5. THE DYNAMIC OF 'TRAJECTORY'

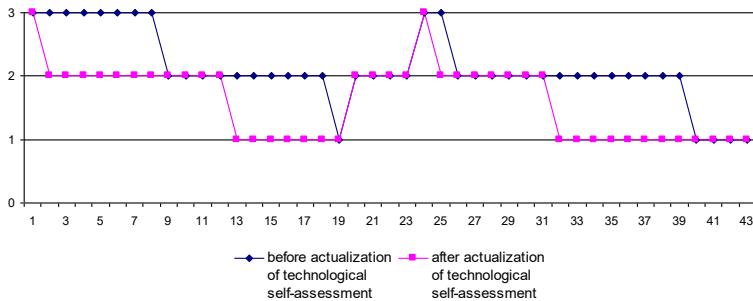


FIGURE 6. THE DYNAMIC OF 'EFFORTS'

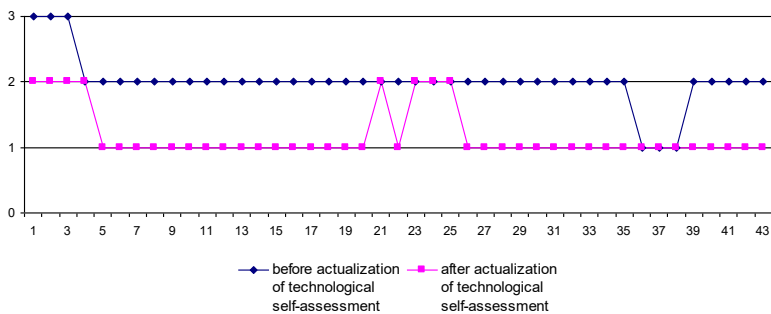


TABLE 1. STRUCTURE OF THE EMPIRICAL DATA

STAGE	EMPIRICAL DATA					
	The amount of resources used ICT		Trajectory of participation in promoting e-learning		Measure of efforts in promoting e-learning	
STARTING ESTIMATION	ordinary	1 point	linear	1	less out	1
	combined	2 points	downward	2 points	medium out	2 points
	complicated	3 points	highest point	3 points	most out	3 points
Technological self-assessment						
ACTUALIZATION OF TECHNOLOGICAL SELF-ASSESSMENT	Low level				1 point	
	Entry level				2 points	
	Basic level				3 points	
	Advanced level				4 points	
FINAL ESTIMATION	The amount of resources used ICT ¹		Trajectory of participation in promoting e-learning ¹		Measure of efforts in promoting e-learning ¹	
	ordinary	1 point	linear	1 point	less out	1 point
	combined	2 points	downward	2 points	medium out	2 points
	complicated	3 points	highest point	3 points	most out	3 points

TABLE 2. THE LECTURER'S ENDEAVOR TO PROMOTE E-LEARNING: RAW DATA

Respondents	The amount of resources used ICT				Trajectory of participation in promoting e-learning				Measure of efforts in promoting e-learning			
	After actualization	before actualization	After - before actualization	Sign	After actualization	before actualization	After - before actualization	Sign	After actualization	before actualization	After - before actualization	Sign
1	3	2	1	+	3	3	0		3	2	1	+
2	3	2	1	+	3	2	1	+	3	2	1	+
3	3	2	1	+	3	2	1	+	3	2	1	+
4	3	1	2	+	3	2	1	+	2	2	0	
5	3	1	2	+	3	2	1	+	2	1	1	+
6	3	1	2	+	3	2	1	+	2	1	1	+
7	3	1	2	+	3	2	1	+	2	1	1	+
8	3	1	2	+	3	2	1	+	2	1	1	+
9	3	1	2	+	2	2	0		2	1	1	+
10	3	1	2	+	2	2	0		2	1	1	+
11	3	1	2	+	2	2	0		2	1	1	+
12	3	1	2	+	2	2	0		2	1	1	+
13	3	1	2	+	2	1	1	+	2	1	1	+
14	3	1	2	+	2	1	1	+	2	1	1	+
15	3	1	2	+	2	1	1	+	2	1	1	+
16	3	1	2	+	2	1	1	+	2	1	1	+
17	3	1	2	+	2	1	1	+	2	1	1	+
18	3	1	2	+	2	1	1	+	2	1	1	+
19	3	1	2	+	1	1	0		2	1	1	+
20	3	1	2	+	2	2	0		2	1	1	+
21	3	1	2	+	2	2	0		2	2	0	
22	3	1	2	+	2	2	0		2	1	1	+
23	3	1	2	+	2	2	0		2	2	0	
24	2	1	1	+	3	3	0		2	2	0	
25	2	1	1	+	3	2	1	+	2	2	0	
26	2	1	1	+	2	2	0		2	1	1	+
27	2	1	1	+	2	2	0		2	1	1	+
28	2	1	1	+	2	2	0		2	1	1	+
29	2	1	1	+	2	2	0		2	1	1	+
30	2	1	1	+	2	2	0		2	1	1	+
31	1	1	0		2	2	0		2	1	1	+
32	1	1	0		2	1	1	+	2	1	1	+
33	1	1	0		2	1	1	+	2	1	1	+
34	1	1	0		2	1	1	+	2	1	1	+
35	1	1	0		2	1	1	+	2	1	1	+
36	1	1	0		2	1	1	+	1	1	0	
37	1	1	0		2	1	1	+	1	1	0	
38	1	1	0		2	1	1	+	1	1	0	
39	1	1	0		2	1	1	+	2	1	1	+
40	1	1	0		1	1	0		2	1	1	+
41	1	1	0		1	1	0		2	1	1	+
42	1	1	0		1	1	0		2	1	1	+
43	1	1	0		1	1	0		2	1	1	+
	n=30				n=22				n=35			

TABLE 3. THE LECTURER'S ENDEAVOR TO PROMOTE E-LEARNING: DECISION

Scale	n	Sign	G _{emp.}	G _{cr.}	G _{emp.} - G _{cr.}	Decision
Resources	30	+	0	10 ($p \leq 0.05$) 8 ($p \leq 0.01$)	G _{emp.} < G _{cr.}	H ₀ is discarded.
Trajectory	22	+	0	6 ($p \leq 0.05$) 5 ($p \leq 0.01$)	G _{emp.} < G _{cr.}	H ₀ is discarded.
Efforts	35	+	0	12 ($p \leq 0.05$) 10 ($p \leq 0.01$)	G _{emp.} < G _{cr.}	H ₀ is discarded.

TABLE 4. CORRELATION BETWEEN ENDEAVORS TO PROMOTE E-LEARNING AND TECHNOLOGICAL SELF-ASSESSMENT

Pearson Correlation		Before actualization of technological self-assessment			After actualization of technological self-assessment			Technological self-assessment
		Resources	Trajectory	Efforts	Resources	Trajectory	Efforts	
Before actualization of technological self-assessment	Resources	1.000	0.428**	0.417**	0.244	0.438**	0.267	0.705**
	Trajectory	0.428**	1.000	0.339*	0.432**	0.621**	0.537**	0.424**
	Efforts	0.417**	0.339*	1.000	0.733**	0.417**	0.480**	0.339*
After actualization of technological self-assessment	Resources	0.244	0.432**	0.733**	1.000	0.312*	0.573**	0.280
	Trajectory	0.438**	0.621**	0.417**	0.312*	1.000	0.502**	0.265
	Efforts	0.267	0.537**	0.480**	0.573**	0.502**	1.000	0.056
Technological self-assessment		0.705**	0.424**	0.339*	0.280	0.265	0.056	1.000

Note: ** - Correlation significant at the 0.01 level (2-tailed). * - Correlation significant at the 0.05 level (2-tailed).

QUESTIONNAIRE "TECHNOLOGICAL SELF-ASSESSMENT" (Murdoch and Muller, 2011)

Place a check mark next to all the statements that apply to you. Then add up all the check marks and refer to the scoring key to find how you score on the Learning Explosion scale.

- You have taken a picture of something interesting or funny just so that you can share it with your Facebook friends.
- You have used your mobile phone to find the answers to a tough question.
- You have used Skype to talk to someone in another country.
- You reach for your phone whenever you hear a chime.
- You have had a conversation with one person while texting another.
- You claim Microsoft 'Outlook' as your productivity tool.
- You have not used a paper map in at least three years.
- You have chosen a place to eat based on a stranger's recommendation found on an application on your mobile phone.
- You have felt the urge to criticize or a business through an application on your mobile phone.
- You pay your bills online.
- You feel withdrawal symptoms you leave your phone at home.
- You own the domain for a personal URL.
- You "Google" to find the answer to everything.
- You have used YouTube to learn something new.
- You have anxiously waited for a status update on a social network site from someone whom you have never met - like a celebrity on Twitter.
- You own an iPad, a Kindle, or other type of tablet.
- You have started a group discussion on LinkedIn.
- You frequently read someone else's blog.
- You have stood in line for at least two hours to purchase a new "gadget".
- You have contributed to a wiki of one kind or another.

Number of Check Marks

Scoring key

How many statements did you check?

0-3 You must be living in a cave or studying tribes in jungles of the Amazon.

4-9 Not bad, but you still have a long way to go.

10-15 You are starting to evolve quite nicely.

16-20 It looks like you have fully embraced the Learning Explosion. Kaboom!