STATISTICS ON UPLOADING LECTURES TO LEARNING MANAGEMENT SYSTEM AT HIGHER EDUCATIONAL INSTITUTIONS

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ABSTRACT:
The article researches the development mechanisms of using the e-management system by teachers in the example of the University of Economy, one of the leading universities of Azerbaijan. Application of a Learning Management System (LMS) in Azerbaijan State University of Economy and teachers' methodology of using lectures placed in LMS have been analyzed. Statistic data on uploading lectures to LMS system reveal that teachers' interest has been increased to the system. The problems related this system are also examined further, and some proposals have been put forward about the ways on how to solve the problems, the transition from traditional publication to e-publication, open education system, implementation of pilot projects and the means to provide comfort and employment of students and teachers at the university. The article assesses strategically circumstances formed by external factors in order to check the impact on low usage of e-resources by teachers at the university. The primary purpose is to find the ways on how to increase the utilization of LMS system by teachers and give recommendations to them about it. The article also deals with one of the important requirements - the processes in the direction of nationalizing programs used in the e-management system. E-education is the bridge between labour activity and education today. In return, it makes broad opportunities for education along the life.

Keywords: e-management system, e-resource, e-lecture, interactive training, higher education

Jel classification: A20 B40 D80

1. INTRODUCTION

Doing so will include structuring a single national electronic information space, the introduction of e-management systems in the higher education system, improving the use of electronic resources, identifying the ways to provide teachers and students with employment and comfort, and implementing different social reading programs apart from traditional lectures in classrooms while providing for information security and the elimination of electron retention (Huseynova, A., Mazanova, O. , 2013).

The tendency of society to embrace global informatization depends directly on the development of educational institutions. This requires the creation of an uninterrupted educational system that ensures that everyone will have access to a high-quality fundamental education according to each person's desires and needs that is available anywhere and anytime. For this reason, the introduction of electronic education related technology is essential to establishing such an education system.

E-training technology provides the most effective tools for directing people to new types of education and to developing the skills and abilities needed for lifelong learning. E-education creates enormous opportunities for lifelong learning by building a bridge between labour and education.

Nowadays, much progress has been made on improving the internet resources of Azerbaijan. This has increased the interest of pedagogical staff in using the internet as an education tool in both secondary and high schools. Higher educational institutes of Azerbaijan have been provided with computers and internet services. Ongoing analysis shows that these are being used efficiently for various types of courses. Today, teachers enthusiastically prepare lessons using e-resources in the e-management system. The ways in which teachers communicate has undoubtedly changed recently. Many teachers now use public networkingthat is conducted on Facebook and Twitter in the place of face-to-face dialogue, and phone conversations. There is no real difference between these types of communicate.

"State Strategy under Development of Education in the Azerbaijan Republic" was approved by an order dated October 24, 2013 of the President of the Azerbaijan Republic Itsays: "The role of education the economy has significantly increased in modern life. Education must not only serve to teach required skills and knowledge related to economics but must also serve to prepare citizens for their future life and integration into society comprehensively (President of the AR, 2013).

The most important role of education in economic life is to meet the educational requirements needed for the livesof human beings. Meanwhile, rapid innovations regularly require knowledge and skills to be refreshed. For thisreason, skills and knowledge are required in order to master new smart technologies and relevant professions. Education plays an important role in the development of a knowledge-based economy (Huseynova, A., Mazanova, O., 2013). Today's information knowledge society creates a great opportunity to socialize individual knowledge via the internet environment.

Azerbaijan has implemented many reforms in this direction. For this purpose, two documents have been approved namely the "Azerbaijan 2020: Look into the Future" Development Concept approved on December 29, 2012, by an order of the President of (President of the AR , 2012) and "Strategic Road Maps for the Perspectives of the National Economy" approved on December 6, 2016 by the Republic of Azerbaijan (President of the AR, 2016).

These state programs support therelated sectors of the knowledge economy such as high quality education, effective fundamental science, knowledge production, high-end technologies, effective science such as technical venture business as well as the realization and transfer infrastructure of ideas (Hasanova, Z., Huseynova, A., Mazanova, O. , 2019).

E -learning has been reflected by a number of documents approved for the development of the national educational system in Azerbaijan. Thus, the Law of the Republic of Azerbaijan No.833-IIIQ dated June 19, 2009 was approved. Azerbaijan hosts more than 1 million internet users. Including 12 of the populations with a gender based breakdown of 69.9 male and 30.1 women. Those internet network users are group as follows: 36.4at home, 23.0 in internet clubs, 19.8 at work, 14.9 at educational institutes, 2.1 in libraries, and 3.8 in other places (Huseynova, A., and Mazanova, O. , 2020).

The problems related this system are also examined further, and some proposals have been put forward about the ways on how to solve the problems, the transition from traditional publication to e-publication, open education system, implementation pilot projects and the means to provide comfort and employment of students and teachers at the university. The article assesses strategically circumstances formed by external factors in order to check the impact on low usage of e-resources by teachers at the university (Helen Georgiou MSaAL, 2017).

E-training processes are complex at the higher educational institutions of Azerbaijan.

• Development of methodological and normative base on Learning Management System (LMS) is in low level;

• Uncertainty of assessment criteria for the evaluation of e-training tools makes e-training realization processes complex;
• It is needed to achieve new goals by identifying critical features on LMS lectures between teacher and students;
• Teachers prefer to deliver lectures to students through e-system. However, the quality of lectures is not guaranteed;
Existing problems have been analyzed during the research activity, and some proposals have been put forward to eliminate such problems.

2. LITERATURE REVIEW

The main task to ensure the transition to e-learning is the creation and effective use of a single electronic information learning environment based on ICT. The basis of the educational environment contains e-training resources provided by educational institutions and various manufacturing companies. Currently, training resources are created in different formats, based on different technologies and platforms, using different software devices. The usage of these resources in the same environment can only be possible if they all support a common format and interconnectedness (Huseynova, A., Mazaova,O., 2021).

As an example, we can show smart education called flexible learning in an interactive learning environment with free access from anywhere in the world. Today, new technologies are applied to the education system. One of them is cloud education technology [10]. Since 2012, the United States, Australia, the United Kingdom, and Brazil began to implement large-scale e-learning projects. Online education courses interconnected many universities in the country in the education network (Helen Georgiou MSaAL, 2017) .

Australia has also adopted a national e-learning management strategy for 2012-2015. Combining a single core database and suite of portals and apps for parents, students, and staff, iSAMS gives schools bespoke management of all academic, wellbeing, HR, administrative and financial information (Helen Georgiou MSaAL, 2017). The Russian Federation amended the law on education in 2012 to provide e-learning, distance learning technologies, and methodological support for the development of e-learning (They know a lot, but at a very basic level: 2020).

In Azerbaijan, at the beginning of the pandemic period from 2020, it was decided to conduct online training only at all levels of the education system, but no law has been adopted in this direction. In the study, the experience of Finland and China, South Korea, the United States, Australia, England, Brazil, and the Russian Federation was analyzed. The results of their achievements in the higher education system are presented (They know a lot, but at a very basic level: 2020).

3. ANALYSIS OF EDUMAN TRAINING MANAGEMENT SYSTEM

We can set the research at Azerbaijan State University of Economics as an example. It has already been started to apply "e-university" model in the university. At the initial phase, the whole educational processes were fully electronized in the main building (Dean MD., 2016).

Table 1: Comparison of uploaded lectures to a Learning Management System by Department

	Department	Subject	Lecture 2019–2020	Lecture 2020–2021
1	Business management	35	46	58
2	The Azerbaijani language	19	68	98
3	Trade and customs management	81	59	59
4	Marketing	49	67	68
5	Humanitarian subjects	59	91	68
6	Management	67	70	71
7	Econometrics	22	68	45
8	Math	52	56	51
9	Civil defense	15	80	80
10	International economics (English)	62	38	45
11	Examination of consumer goods	88	25	19
12	Standardization and certification	34	55	49
13	International economic relations	38	34	38
14	International relations	30	86	87
15	Economic theory	32	78	76
16	International economics	35	48	43
17	Regulation of the economy	47	36	69
18	Industry economy	46	69	66
19	Administration and economy of labor	36	56	57
20	Price and price formation	26	73	69
21	Economy and management of social fields	33	75	73
22	Economic law	36	72	70
23	Economy and protection of environment	67	62	67
24	Technology of catering products	67	47	35
25	Informatics	49	61	67
26	ICT and information economics	45	71	69
27	Design	30	53	37
28	Physics and chemistry	42	50	34
29	Technological machines and field equipment	80	53	47
30	Finance and financial institution	104	68	67
31	Statistics	28	78	78
32	Theoritical and practical economy	46	86	86
33	Foreign languages	89	6	37
34	SABAH	36	0	1
35	Accounting and audit	76	49	73
36	The Russian language	34	2	54
37	Economics and management	69	7	9
Total		**1804**	**2043**	**2122**

The system encircles students, teachers, information about alumni, lesson schedules, subject groups, calendar-thematic plans of subjects, and individual educational programs of students. Personal cabinets have been created for teachers and students. Electronic stands have been installed with an access to the system in the auditoriums. An electronic journal has replaced the paper journal. EDUMAN training management system with Azerbaijan interface is applied in the Azerbaijan State University of Economics.

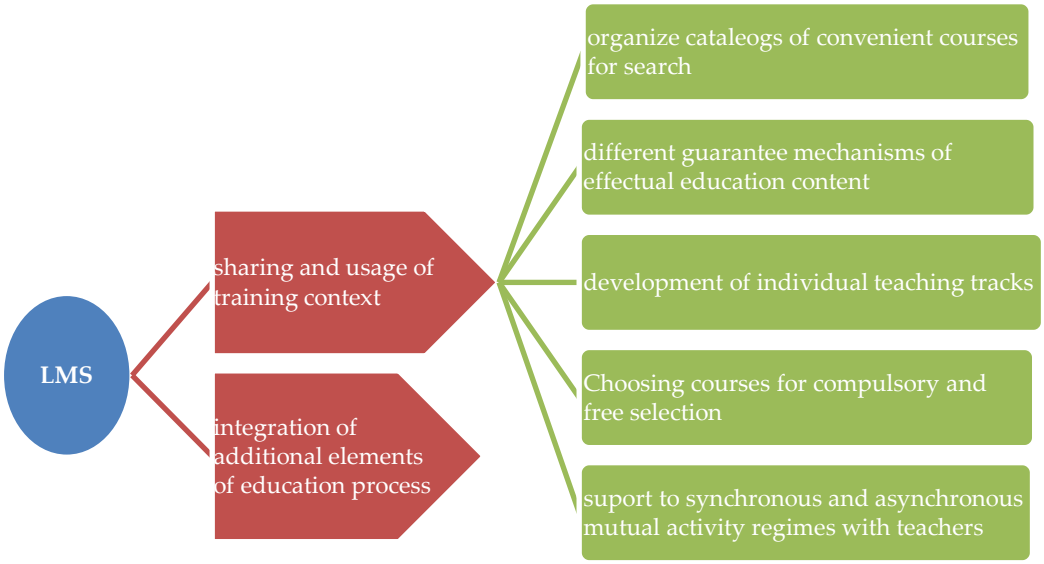

Figure 1: Functions of a Learning Management System

EDUMAN with national interface system has been practicing since 2015. Not only students may be assessed but also teacher will be evaluated via this system.

Thus, official assessment of teachers has been implemented since 2015 - 2016 academic year with a purpose of transition to differential salary. The functions of EDUMAN training management system are the following:

- Obtain its reports automatically in multi-categories;
- Practice of "drag & drop" methodology of lesson schedules;
- Online accessibility of training materials to students by video, audio or different formats;
- Organize social network forums on hierarchical systems among university contingents;
- Upload lectures to teacher’s cabinet in different formats;
- Conduct e-exams;

• Organize written exam sheets without human intervention via barcode reading system and other innovative features;

The interactive software program is formed on Oracle/Java technologies and has more than 40 modules.

EDUMAN with national interface system has report and control mechanism on the success of students for mastering specific topics, the relevance of training to preliminary purposes, the practical application of the knowledge gained, and the effectiveness of the training (Hasanova, Z., Huseynova, A., Mazanova, O. (2019)).

The most important elements of the system are the report on teaching processes. We can infer that investment on e-training is effective.
According to our observations, statistical indicators on uploading lectures to EDUMAN system of departments increased significantly in the 2020-2021 academic year in the Azerbaijan State University of Economics.

Thus, every teacher has uploaded his or her lectures on subjects per semester. We can also observe from the graph that electron activity of teachers has increased from time to time. It means there is enough progress on the 2019-2020 academic year.

Now, lets have a look at the comparison analyzes on uploading lectures to system by departments comparing 2019-2020 to 2020-2021 academic years:

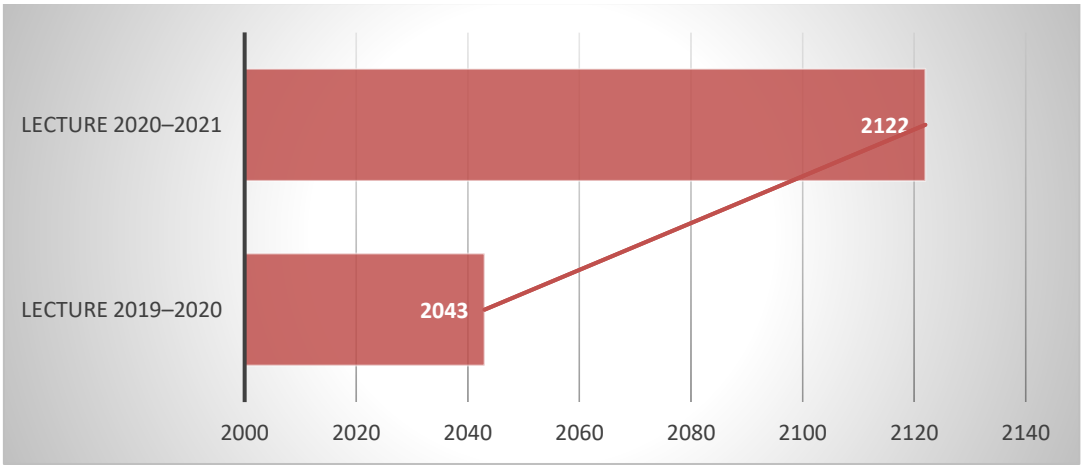

Figure 2: Comparative analysis

According to our research on 37 departments, we have seen that they used MS Excel software to build regression equations for comparative analysis.

In our example, the linear regression equation will be shown as follows:

$Y_j = ax + b$ (1)

Here *a* – is a regression.

Thus, the linear regression is a sign of inclination. In our version, a - shows a 2020-2021 academic year, and the coefficient b indicates the 2019-2020 academic year. Comparative analysis of departments is conducted for these years.

Here j - shows the number of observations on departments. In our version, j will equal to 37. Let's calculate with this formula:

$$R^2 = \frac{\Sigma\left(y_i^j - \bar{y}\right)^2}{\Sigma(y_i - \bar{y})^2} \quad (2)$$

Having calculated in MS Excel, we got R determinate coefficient:

$R^2 = 0,6583$ (3)

It shows the degree of conformity between the input and regression model. The linear regression equation is set for the following indicators:

$Y = 0,05*X + 0,86$ (4)

This is Darbin-Watson coefficient:

$DW=1,97$ (5)

Apparently, Darbin-Watson ratio is smaller than 2, and it means that autocorrelation is adequate for the indicators that are the parts of the equation.

The Azerbaijan State University of Economics has achieved great success for continuous improvement of the national e-management system in 2017.

Some important issues like registration of student and teaching staff, its management, uploading of the subject, lesson plans, lecture, presentations, interactive works, video-trainings as well as conducting student assessments and surveys, and setting exams are organized electronically by the system. Students, as well as parents, can access the above-mentioned e-management system with individual ID numbers and passwords at any time and any place and get relevant information on a mobile basis. Integration of the system into the e-library of the university is organized.

The main goal here is to introduce innovative technologies to create a transparent and effective educational environment, improve the quality of education, and raise university management to the level of modern requirements.

We assume that as a result of the introduction of e-management systems in the university all stages of education will be informatized, transparency will be fully satisfied, and the quality of teaching will increase. We can set an example the results of the research for student's knowledge assessment done by the Azerbaijan State University of Economics through the e-management system.

University students can sit an exam by getting materials on every subject entering to student cabinet of system in Azerbaijani language called EDUMAN via a previously provided login and password in summer and winter sessions.

Teachers prefer to deliver lectures to students through e-system. However, the quality of lectures is not guaranteed. Social reading initiatives aren't preferred during lectures in the auditoriums. Besides, e-books aren't used. However, trainers who participate in collaboration with students can form a productive environment of social reading initiative for active learning. E-reading platform that enables social reading is not used. According to our researches, there is no any requirement to prepare lectures. It is one of the main problems.

Table 2: Political, Economic, Social (including legal and cultural) and Technological environment analysis

Political	**PEST analysis**	
Factor	**Impact on educational institutes**	**Planned measure**
University does not provide teachers with free internet.	Teachers doesn't work on themselves	1.Teachers will be trained to use emails. 2.Conducts the EDUMAN trainings
Economic		
IT department closes	Reduction of budget	Testing teachers
Social		
Raising salaries	Preparation for distance lessons	Relevant salary
Technological		
Webcam, join to network, social network and online students- teachers	Demand for web-trainers for workshop in online social student groups	Electron Warehouse for Training materials, a new website for students and teachers for using the Open Source Web 3.0 interactivity.

Lets use PEST analysis or macro environment analysis to find out the causes of the problem. PEST – is the political, economical, social (including legal and cultural) and technological environment. It is known that political changes in one sphere create economical changes in another sphere and in general, the changes in the economy can accelerate political activities and changes in its turn.

We have to look through all factors in Table 1. - PEST analysis and explain its influence on the activity of high institutions by choosing the most important ones between them. Afterwards, we must mention the factor that has the most positive and negative impact on the macro environment of the university. Strategic environment is assessed which affects the low level of using e-resources of university teachers.

4. Result

The application of Internet resources and technologies in the educational system will enable people to increase their knowledge and skills by using internet resources and social services not making any payment or leaving their places.

The PRT colloquium (mini-conference) program at the Sidney University of Australia was implemented at STEM departments. Teachers exchanged their experiences with colleagues at the university. Observations were conducted by pedagogical and disciplinary experts (Hasanova, Z., Huseynova, A., Mazanova, O. (2019)).

It would be better to apply practices acquired by PRT program in the Azerbaijan State University of Economics.

In the course of the research, the following proposals were put forward about the existing situation based on the analysis and assessment:

i) It is necessary to develop the Learning Management System methodological and normative base.

ii) It is necessary to determine an assessment criteria for the evaluation of e-training tools.

iii.) The rules for preparing lectures for the electron environment at the universities must be developed and approved by the authority. Besides, there is a demand to evaluate teachers by students for their lectures. It means that teachers might be assessed for the percentage of students who they understand the lectures. The selection of a teacher in the system can be implemented according to the percentage of students' acquisition. Under these conditions, the issue of improving the quality of lectures can be solved.

iv.) Information technology department, librarians and training designers of every university should lead to social reading initiatives not asking a charge for membership fees from teachers, students, and staff. So, some parts of the students and teachers' needs can best be solved by this way.

v.) It is recommended to prefer open education resources at universities and implement a pilot project in this direction.

vi.) It is possible to achieve new goals by identifying critical features on LMS lectures between teacher and students.

vii) It is needed to define if there is any requirement to prepare lectures.

5. Discussion

When analyzing the use of electronic means in the training process, we discovered a need for personnel being able to use learning technologies. We autors offers support for e-learning activities to provide e-standards for new generation technologies, to accelerate the technical work required to support broadband effective and other emerging technology systems, to develop comprehensive e-learning training methodological plans. In our opinion the establishment of an education system for e-learning is a significant factor for extending the national e-learning network. For achieving cloud education, we suggest solving the problems such as integration, ownership, security, and evaluation.

Our future research areas will address issues such as integration, ownership, security and evaluation to achieve cloud education.

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