



THE ROLE OF INTERNET TECHNOLOGIES IN LECTURING AND LEARNING

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Abstract:

Internet supported technologies are widely used for online lecturing and learning, especially for continual education purposes. Distance learning system, as one of internet supported platforms, offers numerous possibilities for creating different teaching and learning modes, based on crucial humane conditions: communication, interaction, and collaboration. The use and application of collected knowledge has become extremely important, since the speed of creating and delivering of information increased. Under such uncontrollable, external business conditions, professors could not be the one and only medium for transfer of knowledge. Introduction of learning technologies, such as synchronous and asynchronous electronic learning systems, enable adding new quality to the process of education. Firstly, it is in accordance with contemporary development of the life learning concept, where independent work and good time management are desirable, improving students' skills which help them connect topics covered by different courses and which are preferred by employers. Secondly, it helps students to develop logical way of thinking. Thirdly, it makes pressure on teachers to update their knowledge on daily basis. Finally, it should help teachers create energy given, competent, and self-driven graduates.

Key words:

Internet,
platforms,
lecturing,
Distance Learning System,
humane conditions,
life learning concept.

INTRODUCTION

Contemporary development of information technologies (IT) enables professors and students to actively participate in the process of learning, without necessity to be present at the same time, at the same place during that process.

The purpose of this paper is to investigate the possibilities for

- 1) adapting some of the existing models of learning to the real needs, knowledge, and available time of students of economics, as well as for
- 2) profiling competent, proactive experts desired by modern employers.

Authors of this paper analyzed Trade and Risk Management courses. Both courses are compulsory, offering proficient and vocational knowledge to students of the third grade of their undergraduate studies at the Department of Business Economics at Singidunum University. The research was conducted during the school year 2011/2012. Within Trade course students were asked to fill out the questionnaire, while focus groups were organized for researching students' opinion toward learning

platforms within Risk Management course. After the survey, the authors calculated correlation coefficient for both courses in order to discuss the findings [1].

INTERNET TECHNOLOGIES IN EDUCATION

Internet is the richest and most complete source of different information. As such, it offers possibilities for efficient and effective searching, selecting, and evaluating appropriate, high-quality information which is usually used for problem solving.

IT has become an iconic support in a world of different education systems [2], due to its ability to create three important humane conditions for its users: communication, interaction, and collaboration [3].

Introduction of learning technologies, such as synchronous and asynchronous electronic learning [4], enabled adding new quality to the process of education, which is reflected in active exchange among the process participants [5]. In that sense, communication, interaction, and collaboration are considered to be crucial for succeeding effective course outcomes. The existence of collaboration between students, professors, and adminis-



tration relies on their mutual communication and knowledge share. An ineffective coordination or an absence of effective communication may result in course failure, as well as in inability to create and maintain so called intellectual property as a source of competitive advantage for the organizations which build their business on internet technologies [6]. In that sense, there are important elements that have to be taken into consideration when deciding on choosing appropriate learning model, such as: interactivity, collaborative learning, evaluation of students and teaching methodology. Internet-based learning platforms, such as Moodle platform used for Distance Learning System (DLS) at Singidunum University, offer opportunities for comprising content management systems and life lifelong learning management systems. Those systems offer different possibilities for creating education materials.

IT is one of the main factors that influence sharing knowledge and lifelong learning process [7]. The research, conducted in the Serbian market, which dealt with using information technologies in knowledge sharing within organizations as well as with its clients [8] showed that internet, intranet, e-mail and search engines are the most commonly used information tools for sharing and spreading knowledge. A great number of participants (49%) use the internet often, and 35% of them always; as for intranet, 51% of the participants use the internal organization network in their day to day work, while 37% use it always; 52% of the participants use e-mail often as a knowledge sharing tool, and 40% use it always. Search engines are used by 51% of the participants.

Synchronous electronic learning consists of interactions between students and professors during the same period of time, via video-conference or through webinars. Asynchronous electronic learning [9] comprises interactions between students and professors at different locations and different time, such as testing according to the previously prepared questions, watching previously recorded tutorials, e-mail correspondence etc. On-line and web-based (internet) courses are always unique and tailor made since they combine text, images, video and audio contents within the same learning systems and learning materials. This enables flexible interaction between users and technology [4]. It should be pointed out that organizing and accomplishing such forms of education is based on collecting and exchanging learning experience [10], on perceiving students' needs, and on content development potentials directed by programmers and online experts.

With innovative learning modes it is expected that the approach to learning and teaching changes. It is possible that a lecturer and his students do not share the same classroom at the same time, but still do participate in the same course. This approach to learning, for example, has become widely accepted and started its development when it had become clear that lecturers were not the only medium in the knowledge transfer process [11]. Taking into account the experience of the experts from developed countries and the experience gathered by conducting courses over Moodle platform at Singidunum University, an educational model adapted for students

of business economics was created [12]. The quality of the model performances was investigated through the research, conducted within Trade and Risk Management courses. The reasons for choosing those two courses were the following:

- 1) Both courses are compulsory, offering proficient and vocational knowledge to students of the Department of Business Economics. Students attend the courses during different semesters of the same school year of their undergraduate studies. The research sample was the same, and the comparative analysis was therefore valid.
- 2) Both courses had been carried out for three years, within the traditional as well as for DLS studies at Singidunum University. The professors for each course remained the same during the three-year period of time, and they were responsible for both, the traditional and the DLS studying system within the course. Thus, the course methodology was similar, if not identical, and thus comparable.
- 3) DLS students of both courses had „24/7“ access to the information web site and the learning platform, and were able to download all the uploaded video material. Students were able to communicate with the course professors and the system maintenance staff on a continual, regular basis, usually through e-mails or visiting professors' office hours at the university building.

There are key reasons for adopting DLS system in order to achieve cost-effectiveness, and to increase efficiency and quality of IT education of students. Among the parameters of quality of DLS system, there are the following: high, positive response rate of the students who visited the platform and filled out the questionnaire; the simplicity of platform use, which can be confirmed by the fact that it can be approached whenever and wherever students have internet access; high level of students' education in the IT area, which is followed by their easier adaptation to changes and their accepting new learning and business solutions; both rationalization of teaching and learning systems and increased quality of teaching contents, especially those the with purpose of problem solving in the areas of Finance and Risk Management.

One of the limitations for organizing an appropriate DLS learning system is its long-term preparation period. Another restrain factor is high popularity of traditional model of teaching and learning, which enables face to face conversation between students and professors. The level of DLS system development, which differs from country to country, represents one of the key factors of building students' confidence in this particular studying mode. In Serbia, first steps in conducting DLS learning system emerged in the early 1990's, while the first DLS studying mode was established in 2004 [13]. Video-conferences can overcome this limitation to a certain extent. Nevertheless, lack of IT knowledge, absence of basic computer education, and inability to access the platform (e.g. no internet connection) can be considered as potential limitations that should be taken into consideration when organizing DLS classes.



RESEARCH RESULTS - DISPLAY AND DISCUSSION

For purposes of evaluating Trade course, the questionnaire was filled out by: 102 out of 340 students who attended traditional classes, which represented around 30% of the total number of traditional students; 37 out of 140 students who attended DLS classes, which represented around 26% of the total number of DLS students.

For purposes of evaluating Risk Management course, the questionnaire was filled out by: 101 out of 340 students who attended traditional classes, which represented around 30% of the total number of traditional students; 37 out of 140 students who attended DLS classes, which represented around 26% of the total number of DLS students. Based on the number of students who responded the evaluation, it can be concluded that almost an equal number of students filled out the questionnaires for both courses.

By calculating the correlation coefficient for evaluating traditional and DLS learning modes, it can be concluded that all the modifications and changes within traditional model of lecturing can be introduced into DLS system as well. Correlation coefficient of 0.71 for Trade course speaks in favor of high degree of connection between traditional and DLS methods of lecturing within this subject. On the other hand, correlation coefficient of 0.88 for Risk Management course is higher than with Trade course, which speaks in favor of better connection between traditional and DLS methods of lecturing within the very subject.

Table 1: Correlation coefficient for evaluating traditional and DLS learning modes- Trade and Risk Management courses

TRADE	Traditional	DLS	RISK MANAG.	Traditional	DLS
Traditional	1		Traditional	1	
DLS	0.71	1	DLS	0.88	1

Based on presented findings, it can be concluded, with a high degree of certainty, that a successful application of a potential modified lecturing model within Trade course can be deployed within Risk Management course. Furthermore, taking into account the correlation coefficient ($0.71 < 0.88$) better results can be expected for DLS lecturing modifications within Risk Management course.

On the other hand, it can be concluded that there is a high degree of connectivity between traditional and DLS approach to lecturing within the courses. One can expect that prospective modifications of one of the lecturing approaches, e.g. traditional approach, can be successfully applied to DLS lecturing within the same course, provided that professors regularly upgrade their knowledge and skills connected to adaptation and application of technological innovations into their courses. Based on calcu-

lated correlation coefficients, it can be concluded that any modification in lecturing will be reflected both on traditional and DLS learning system, without additional adaptations. With good education material and application of advanced media of communication, students who attend different lecturing systems can communicate among themselves. In such environment, students become able to exchange their ideas, to think interdisciplinary, to connect and use knowledge gathered from different courses, and to actively think about the possibilities to apply collected knowledge in practice.

SUGGESTIONS FOR MODIFICATIONS IN LECTURING AND LEARNING

The suggested educational internet-based model came as a result of integration of knowledge shared among professors and students, on one hand, and implementing new technologies in creating learning modes for students of business economics, on the other hand. The main characteristic of this model is that it eliminates space and time gap between professors and students because of the technology implemented. Students are able to use electronic communication channels and electronic materials for preparing mid-term tests, final exams, essays, and case study analysis, from any location, at any time.

At Singidunum University such form of self-evaluation is used as an additional form of evaluation of the teaching materials and course curricula. The purpose of self-evaluation, as a form of individually made surveys such as questionnaires, is that professors actively control their work and course curricula, and to implement modifications and corrections into future optimizations of their courses. The questionnaires are created by professors themselves, and can be modified according to course nature and demands, since they are of unofficial and internal purpose.

During fall semester of school year 2011/2012, a survey was made within Trade course, on a group of DLS students. The survey included 42 students, who filled out a questionnaire, which consisted of seven questions. The questionnaire was available for students over Moodle platform.

A focus group survey was organized within Risk Management course, at the end of summer semester of the same school year 2011/12. The research was done on a group of DLS 37 students, conducted during professor's office hours. The research consisted of four focus groups, three focus groups consisted of nine students, and one focus group consisted of ten students. Students were asked the same questions as for Trade course research. The questions were the following: 1. Are you employed? 2. Evaluate your satisfaction with the following: course content, articulacy, comprehensiveness, informative issues, the course as a whole. 3. Evaluate applicability of the course. 4. Evaluate the role of weekly activities (e.g. essay writing) for practical application of learning materials. 5. Evaluate to what extent the following teaching materials helped you in learning and acquiring information: textbook, power point presentations, video materials, office hours. 6. Evaluate the role of the course DLS platform in



exam preparation. 7. In case you are employed, was the course useful for your current employment and the job you do? When evaluating, students were told to consider 1 as the worst grade, and 5 as the best grade. The other questions offered options: yes, no, I do not know.

The collected results, based on the questionnaire within Trade course showed the following: 73% of the examined students were employed; 58% of the examined students considered Trade as a useful course for their current employment and the job they do; 65% of the examined students considered the content of Trade course and DLS platform as important for their final exam preparation; 60% of the examined students considered the role of individual weekly activities (e.g. essay writing) as highly important for practical application of learning materials. It was also interesting to find out that a high degree of students' confidence in power point presentations as additional learning material, while the textbook was the main source for the final exam preparation.

The results collected from the focus group survey within Risk Management course helped authors to conclude on the following: 62% of the examined students were employed, stated that DLS model of lecturing was highly useful for them; 77% of the examined students considered Risk Management as a useful course for their current employment as well as a basis for better working options; they also pointed out that Risk Management was an area of expertise which had a very important place in every domestic and international smart business, with its obvious perspective for growth and development; 82% of the students considered the role of individual weekly activities, especially essay writing and case study analysis, as highly important for practical application of learning materials and for preparing final exam.

Comparing the data gathered from students who attended Trade and Risk Management courses, it can be concluded that statistically significant percentage of the employed examinees considered: (a) methodology and content of both courses useful for conducting their jobs; (b) content of both courses as significant for preparing their final exams, and (c) the role of weekly, individual activities, such as essay writing and case study analysis, as highly important for practical application of learning material as well as for preparing their final exam.

Based on presented findings, as results of researched students' needs, requirements, and attitudes toward the two courses, the following conclusions can be made:

- 1) *The courses are suitable and adequately designed to enable students to prepare for their final exams, as well as to apply acquired knowledge from the course into their current jobs. The results also indicate that students feel free to address their course professors by e-mail or by visiting their office hours in order to solve their problems.*
- 2) *For a successful exam preparation students used both textbooks and power point presentations, which proved to be crucial. It is suggested that power point presentations include: information on the possibilities of applying theoretical element of the courses into the practice, exercises, and illustrations.*

- 3) *Individual work of students is of a high importance for a better understanding of course topics. Implementation of compulsory electronic consultations and student advising on weekly basis would raise the quality of communication within DLS courses, as well as the efficiency of mid-term and final exam preparations.*

- 4) *Course evaluations should be done on a regular basis, once a year. The results should be used for adaptations and optimizations of the course resources such as time, space, teaching and administration staff.*

Active lecturing modes show their positive aspects in possibilities for spontaneous exchange of ideas, suggestions, information, and knowledge among students, and with their professors. Internal evaluation of Trade course, while using Risk Management as the control course, proved that lecturing and curricula of Risk Management course was suitable for modifications introduced within Trade course. In another words, modifications of DLS model of lecturing introduced within a particular course, offer opportunities for introduction of the same modifications into the lecturing processes of the similar courses.

CONCLUSION

DLS studies at Singidunum University present accessible mode of communication and learning for various categories of users (professors, students, administration). This statement is derived from the fact that it offers possibilities for organizing repeating lecturing on different locations at different time, in a form of asynchronous lecturing. The accessibility can be exercised through different aspects: social, economic, and technical. The usual categories of students within DLS system users at the University are (a) employed students, (b) sportsmen who travel frequently or live abroad, and (c) people who travel for work or who live abroad. Employed students stated that gathered knowledge proved to be useful in conducting their jobs and for upgrading their fields of expertise.

A highly important aspect of modifying and developing DLS learning mode is related to enabling students to start writing their graduate papers, and developing their personal and business skills, which recommend them as good candidates for advanced business positions and for more attractive jobs. The significance of this aspect should be in motivating students to individually connect and apply knowledge gathered from different courses, and based on that, start searching for new sources of literature in order to develop their logical way of thinking within their area of expertise. DLS as an active model of lecturing and learning offers professors possibilities for continual internal evaluation, especially through comparisons of methodologically similar courses.

From the point of view of perspective development, basic courses should be upgraded and modified on regular basis, not only in accordance with the investigated needs and attitudes of the students, but also based on the needs and demands of the administration staff, technical support, and professors' expertise. In that sense, the



process of realization of this very form of lecturing was conditioned by willingness and readiness of professors to adapt their courses in terms of using IT. In another words, professors were stimulated and motivated to continually develop their areas of expertise and their IT skills, as a part of their long life learning process.

The possibilities for comparing and modifying DLS lecturing modes of the similar courses enable organizing and conducting online learning as well as counseling services for students and university graduates [14]. Also, numerous savings could be achieved. Firstly, the prospective modifications can be introduced into similar courses without previous „pilot” testing, since the results can be visible throughout the reference course. Secondly, savings could be made with time as a resource. Virtual teams of administrators [15] could be organized to work on creating unified solutions for all the courses in four clusters (general-education courses, theoretical-methodological courses, scientific-technical courses, technical – practical courses). All the modifications would be automatically imported into Moodle platform parameters for all subjects that belong to the same course cluster. Thirdly, important aspect of modifications refers to more effective establishing of three humane conditions, required for creating distinguished experts: communication, interaction, and collaboration. The improvement of communication efficiency among professors of different courses within the same cluster, their students, and the administration teams, offers the basis for creating a successful prospective professional.

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