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THE USE OF E-LEARNING MANAGEMENT SYSTEMS TO SUPPORT ENGLISH LANGUAGE LEARNING AT ENGINEERING STUDY PROGRAMS: QUALITY AND LEARNERS' SATISFACTION

Abstract: *Number of engineering study programs have English language course in their curricula. The reasons for including of foreign, English language are numerous starting from the fact that English language is the facto language of science, following that English language is important in business and engineering communication in modern business and engineering environment. The approaches in teaching and learning of English language are numerous and in this paper it will be presented experience in using Learning Management System, Moodle in teaching and learning of English language as well as students satisfaction with this platform and concept of blended learning.*

Keywords: *Quality of learning; Teaching; English in engineering; Learning management systems.*

1. Introduction

English as foreign language is a part of curicula of differnt engineering study programs. Differnt researches indicate that students highly evelaute importance of English langiage for thir education and proffesional usage (Al-Tamimi & Shuib, 2009). On the other hand, ICT has been used in different field of education, so learning of foreign language is not exception. Some reserces reported that studnets have positive attitude towards the use of ICT in learning English (Yunus et al., 2009). Different authors (Tri et al., 2014; Roy et al., 2020) reported their positive attitudes among students towards ICT use to study English and studnets expectation that ICT should be used more frequently in the classroom in order to maximize language learning and teaching. On the other hand, some researches shown that studnets prefer to use ICT for other purposes instead of learning (Yunus et al., 2010).

When it comes to usage of differnt ICT solutions for teaching and learning the usage of Learning Management Systems is on of the most common approaches in providing environemnt for on line learning. On the other hand, usage of these systema have been evaluated according to possible effects of LMS on teaching practices, on student engagement, on the nature of academic work and on the control over academic knowledge (Coates et al., 2005). One of the most popular Learning management system is Moodle (open source LMS) and effects of its implementation in different forms as well as importance as a part of blended learning environment have been researched (Berggre et al., 2005; Black et al., 2007).

Havin all this in mind the Moodle learning management system was introduced at Faculty of Engineering, University of Kragujevac as ICT tool for support for on-line

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learning and teaching. In this paper it will be presented the usage of Moodle in teaching and learning of English language at enginering study programs. The research will analyse attitudes and satisfacion of 1585 stundets who have been using this system. The goal is to provide evindance that LMS expands and imrove quality to the teaching service and learning experinace of the students. The modified SRVQUAL modela and its dimensions was used for evaluation of stundets satisfaction with teaching service.

2. Blended learning approach in English language teaching using learning management system

The English language is mandatory course and the first semester of Mechanical Engineering, study program at Faculty of Engineering, University of Kragujevac. The course consists of following units: What is Engineering; Engineering materials; Mechanical properties of materials, corrosion, fatigue, creep, tensile strength; Material processing - metal forming; Casting; Properties and classification of welding processes; Machine tools; Machine components; Bearings; Engineering fundamentals 1; Engineering fundamentals 2; Motor vehicles part 1; Motor vehicles part 2.

Among other teaching and learning methods faculty of engineering uses Learning management system Moodle as support for on-line learning in order to improve classical approach in teaching and learning and to promote concept of blended learning.

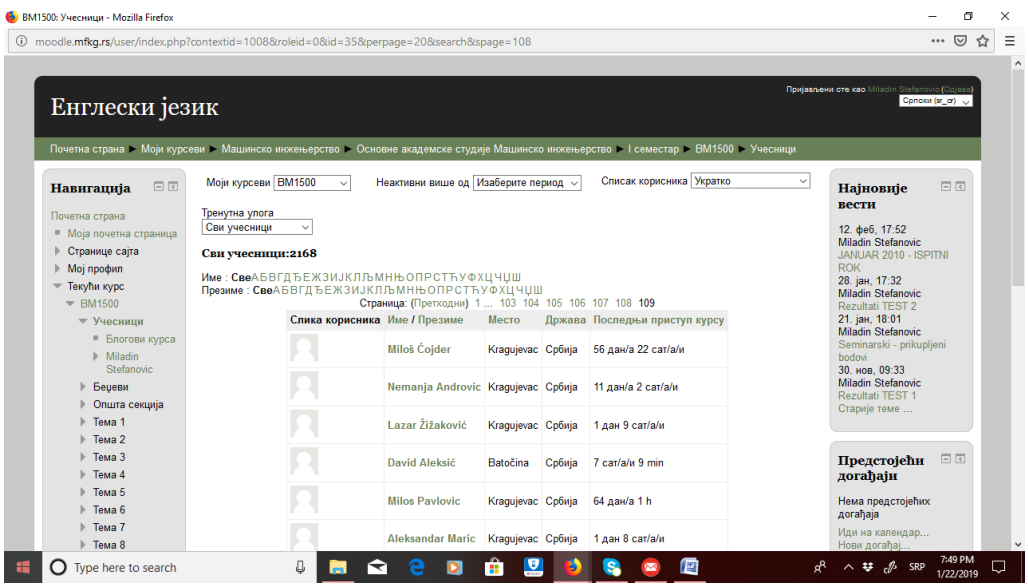

Figure 1. Moodle tracking of students' activities

English language is divided in fifteen units and each unit is presented on Moodle portal. Enrolled students have developed material for each week accompanied with small multiple choice test. This test is developed in order to check students ability to use different grammar forms or to check their vocabulary. The Moodle portal has been used since school year 2009/2010 with following number of students: 2009/2010 - 192, 2010/2011 - 169, 2011/2012 - 167, 2012/2013 - 205, 2013/2014 - 235, 2014/2015 - 159, 2015/2016 - 275, 2016/2017 - 183). In total during the 8 school years 1585 students used Moodle as the support to their regular activities.

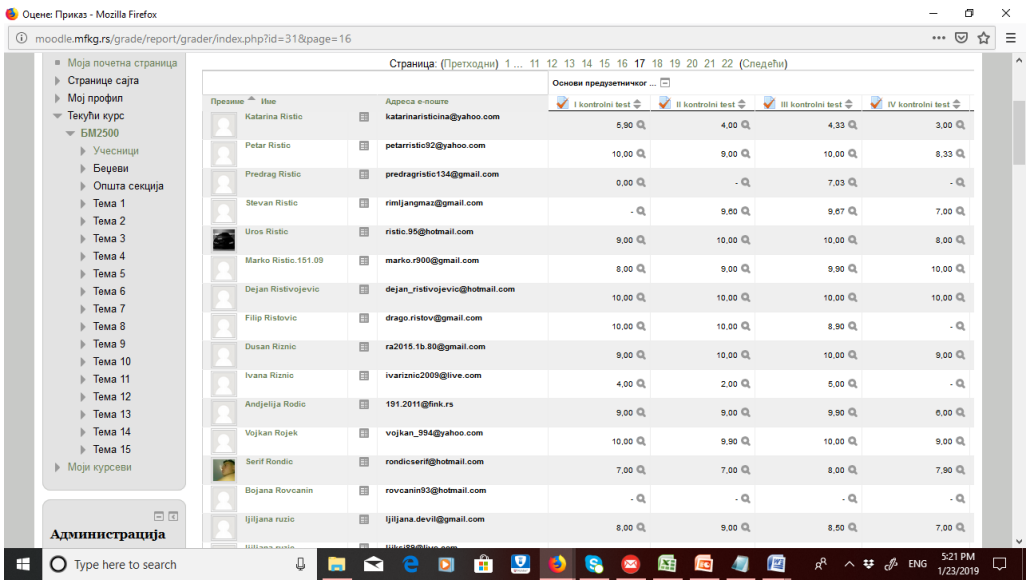

Figure 2. Results of short multiple choice tests

Each year all active students enrolled to learning management system so teacher was able to track their activities, have their grades on multiple choice tests and to follow their activities. On the figure 1 it is presented the log for tracking of students activities.)

Professor is able to follow the results of test (Figure 2) and to have different communication with each student using their profiles at Moodle portal. In brief the Moodle portal was used to present learning material for each week, each unit was accompanied with short test with aim to check acquired knowledge of grammar and vocabulary. Students also have opportunity to submit their written seminar papers using Moodle portal and to have consultation using the options at Moodle Learning Management system.

3. Students satisfaction of learning experiance with LMS

In the first step the SERVQUAL model is used with its dimension in order to determinate the quality of lecturing using Learning Management System vs. traditional approach. The general dimensions of SERVQUAL were used and dimension Tangibles was excluded. The question was to define the level of student's satisfaction with usage of Learning Management System in teaching of English language in engineering study programs. The second question was to evaluate different aspects of quality of services and students satisfaction.

In this research some traditional dimensions from SERVQUAL model were used as well as two additional one according to Ong (2012).

Students were asked every year to compare and contrast their learning experience with classical learning and blended learning using Learning Management System.

Table 1 provide following conclusions after the examination of satisfaction of 1585 students in 8 school years.

They believe that level of communication is significantly higher in blended learning environment. In the case of classical approach and teaching and learning during the classes students have limited time to ask questions and to get the answer from lecturers.

Table 1. Modified SERVQUAL dimensions and valuation of traditional learning service vs. blended learning service

No	Dimensions	Using traditional approach	Using blended learning approach / LMS
1	**Reliability** – ability to perform the promised teaching service dependably and accurately		
2	**Responsiveness** – willingness to help and provide prompt answer and teaching support		
3	**Assurance** – knowledge and courtesy of lecturer and their ability to inspire confidence in students		
4	**Empathy** –individualized attention the faculty provides its students		
5	**Knowledge** of lecturer and real life examples		
6	**Communication** - providing instant communication and information about course and progress		

	Advantage of approach
	Equal - not clear advantage
	Disadvantage

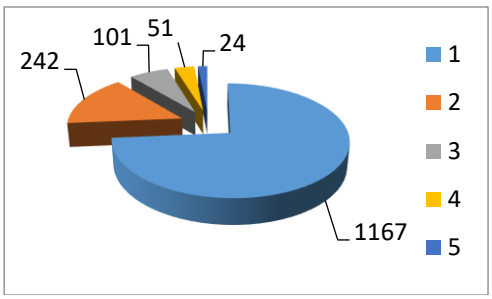

Figure 3. Satisfaction with LMS support

In many cases students have number of questions during their individual learning and Learning management System with their options Chat Rooms, Discussions, FAQ and direct communication with lecturer provide better, improved forms for communication.

Other dimensions Reliability, Responsiveness, Assurance and Empathy mainly are connected with students' opinion that in e-leering they have individualized attention and approach from lecturer because they can get information and help out of regular working hours at Faculty.

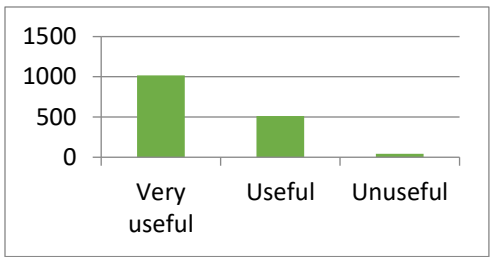

Figure 4. Does short on line tests help in improvement of grammar and vocabulary

On the other hand this support to learning demands much more time and dedication from lecturer.

4. Conclusion

The usage of ICT solutions in teaching and learnig present common practice for higher educational institutions. In this paper implementation of learning management system Moodle at teaching and learnig of English as foreign language at engineering studies was presented. During the 8 years 1585 students used Moodle portal as a support for their activities at the course English language. For evaluation of stundets satisfcation with complete service modified

SERVQUAL model was used. Researh provided an evidance that using LMS portal dramatically increases students satisfaction with communication (providing instant communication and information about course and progress). In addition studnets evaluated that reliability, responsivness, assurance and emphaty as SERVQUAL dimmensions are improved when they have LMS suport. In this researchmodified SERVQUAL model was used in order to use reliable approach ant to treat studnets as cusomters and teahing as service provided. In additions students demonstrated high satisfaction with LMS and specific components of developed course in Moodle enviroemnt.

Additional researches will be directed towar connection of specific learning outcomes, stundets satisfaction and ICT support.

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