

Sandra Stefanovic<sup>1</sup>  
Alina Andreea  
Dragoescu Urlica  
Lulzime Kamberi

**Article info:**

Received 28.05.2020

Accepted 21.09.2020

UDC – 37.014.6

DOI – 10.24874/IJQR15.02-17



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

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

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

### 1. Introduction

English as a foreign language is a part of the curricula of different engineering study programs. Different researches indicate that students highly evaluate the importance of the English language for their education and professional usage (Al-Tamimi & Shuib, 2009). On the other hand, ICT has been used in different fields of education, so learning of foreign language is no exception. Some researchers reported that students have a 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 students' expectation that ICT should be used more frequently in the classroom to maximize language learning and teaching. On the other hand, some research has shown that students prefer to use ICT for other purposes instead of learning (Yunuset al.,

2010).

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

Having all this in mind the Moodle learning management system was introduced at the Faculty of Engineering, the University of Kragujevac as an ICT tool for support for online learning and teaching. This paper will

<sup>1</sup> Corresponding author: : Sandra Stefanovic  
Email: [sandra\\_stef@yahoo.com](mailto:sandra_stef@yahoo.com)

present the usage of Moodle in teaching and learning of English language in engineering study programs. The research will analyze the attitudes and satisfaction of 1585 students who have been using this system. The goal is to provide evidence that LMS expands and improves the quality of the teaching service and learning experience of the students. The modified SRVQUAL model and its dimensions were used to evaluation of students' satisfaction with the teaching service.

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

The English language is a mandatory course and the first semester of the Mechanical

Engineering, study program at the Faculty of Engineering, University of Kragujevac. The course consists of the 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, the faculty of engineering uses the Learning management system Moodle as support for online learning to improve the classical approach to teaching and learning and to promote the concept of blended learning.

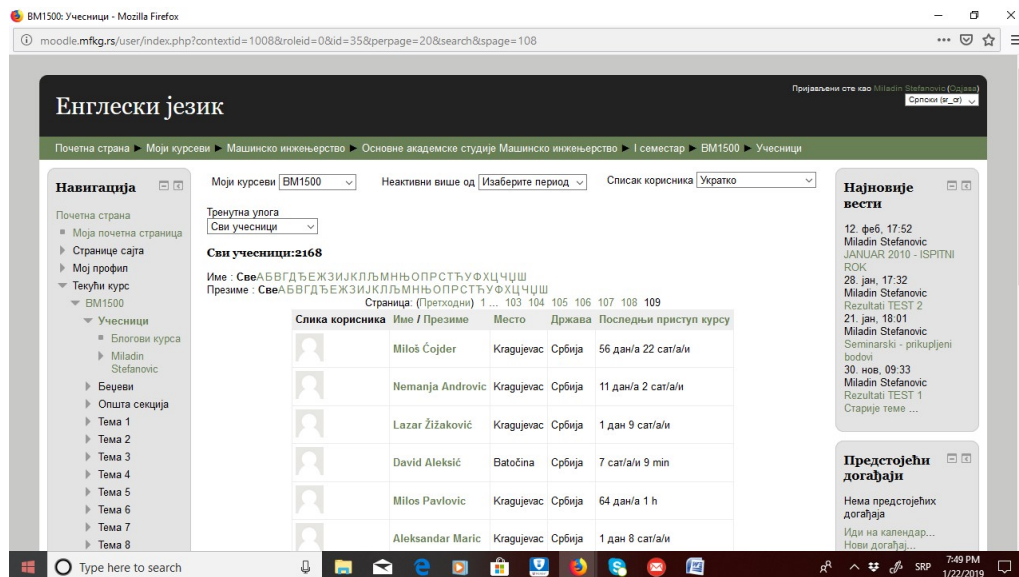


Figure 1. Moodle tracking of students' activities

The English language is divided into fifteen units and each unit is presented on Moodle portal. Enrolled students have developed material for each week accompanied by a small multiple-choice test. This test is developed to check students' ability to use different grammar forms or to check their

vocabulary. The Moodle portal has been used since the school year 2009/2010 with the 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 for their regular activities.

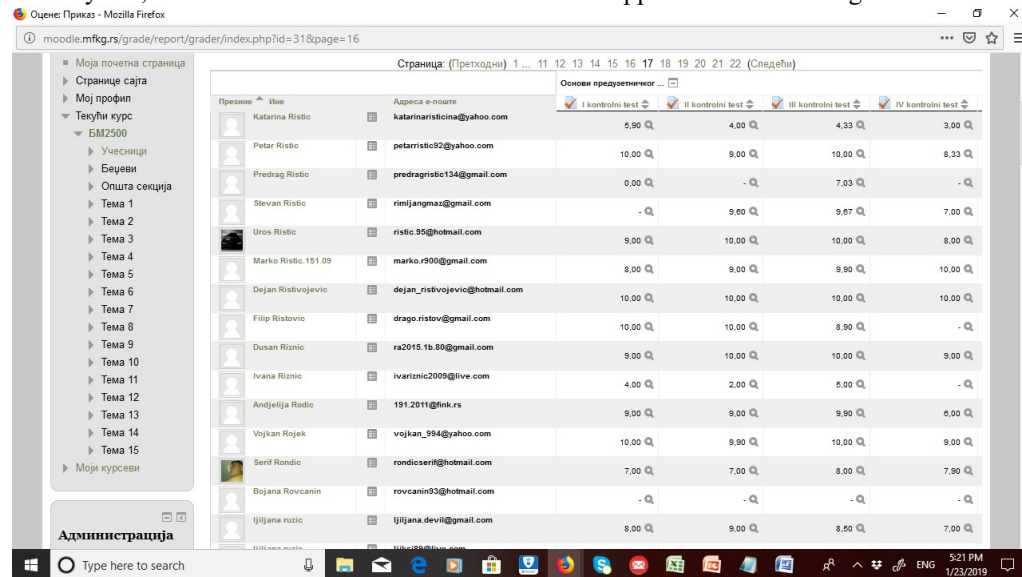


Figure 2. Results of short multiple-choice tests

Each year all active students enrolled in the learning management system so the teacher was able to track their activities, have their grades on multiple-choice tests, and follow their activities. Figure 1 presents the log for tracking students' activities.

Professors can follow the results of the test (Figure 2) and 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 by a short test to check acquired knowledge of grammar and vocabulary. Students also have the opportunity to submit their written seminar papers using Moodle portal and to have a consultation using the options in Moodle Learning Management system.

### 3. Students' satisfaction with learning experience with LMS

In the first step, the SERVQUAL model is used with its dimension to determine the quality of lecturing using the Learning Management System vs. the traditional approach. The general dimensions of

SERVQUAL were used and the dimension Tangibles was excluded. The question was to define the level of student satisfaction with the usage of the Learning Management System in the teaching of the English language in engineering study programs. The second question was to evaluate different aspects of quality of services and student satisfaction.

In this research, some traditional dimensions from the SERVQUAL model were used as well as two additional ones 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.

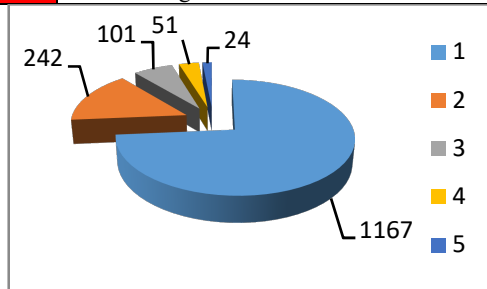
Table 1 provides the following conclusions after the examination of satisfaction of 1585 students in 8 school years.

They believe that level of communication is significantly higher in the blended learning environment. In the case of the 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	<b>Reliability</b> – ability to perform the promised teaching service dependably and accurately	Yellow	Green
2	<b>Responsiveness</b> – willingness to help and provide the prompt answer and teaching support	Yellow	Green
3	<b>Assurance</b> – knowledge, and courtesy of lecturer and their ability to inspire confidence in students	Yellow	Green
4	<b>Empathy</b> – individualized attention the faculty provides its students	Yellow	Green
5	<b>Knowledge</b> - of lecturer and real-life examples	Yellow	Yellow
6	<b>Communication</b> - providing instant communication and information about the course and progress	Red	Green

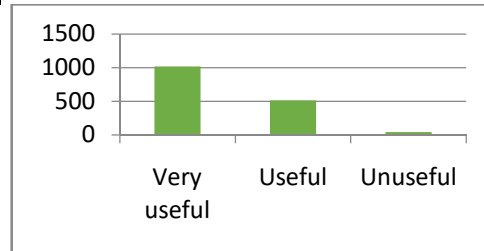
<span style="color: green;">■</span>	Advantage of approach
<span style="color: yellow;">■</span>	Equal - not clear advantage
<span style="color: red;">■</span>	Disadvantage



**Figure 3.** Satisfaction with LMS support

In many cases, students have many questions during their learning and the Learning Management System with their options of Chat Rooms, Discussions, FAQ, and direct communication with lecturers provide better, improved forms of communication.

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



**Figure 4.** Do short online tests help in the improvement of grammar and vocabulary

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

#### 4. Conclusion

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

<sup>1</sup> Corresponding author: : Sandra Stefanovic  
Email: [sandra\\_stef@yahoo.com](mailto:sandra_stef@yahoo.com)

satisfaction with complete service modified SERVQUAL model was used. Research provided evidence that using the LMS portal dramatically increases students' satisfaction with communication (providing instant communication and information about course and progress). In addition, students evaluated that reliability, responsiveness, assurance, and empathy as SERVQUAL dimensions are improved when they have LMS support. In this research modified

SERVQUAL model was used to use a reliable approach and to treat students as customers and teachers as service providers. In addition, students demonstrated high satisfaction with LMS and specific components of the developed course in Moodle environment.

Additional research will be directed toward the connection of specific learning outcomes, student satisfaction, and ICT support.

## References:

- Al-Tamimi, A., & Shuib, M. (2009). Motivation and attitudes towards learning English: A study of petroleum engineering undergraduates at Hadhramout University of Sciences and Technology. *GEMA Online® Journal of Language Studies*, 9(2), 29-55.
- Berggren, A., Burgos, D., Fontana, J. M., Hinkelman, D., Hung, V., Hursh, A., & Tielemans, G. (2005). Practical and pedagogical issues for teacher adoption of IMS learning design standards in Moodle LMS. Retrieved from [http://dspace.ou.nl/bitstream/1820/388/2/Moodle-IMSLD\\_JIME\\_submitted\\_2.pdf](http://dspace.ou.nl/bitstream/1820/388/2/Moodle-IMSLD_JIME_submitted_2.pdf) Accessed on: 24.01.2019.
- Black, E. W., Beck, D., Dawson, K., Jinks, S., & DiPietro, M. (2007). Considering implementation and use in the adoption of an LMS in online and blended learning environments. *TechTrends*, 51(2), 35-53.
- Coates, H., James, R., & Baldwin, G. (2005). A critical examination of the effects of learning management systems on university teaching and learning. *Tertiary education and management*, 11, 19-36.
- Ong, S. F. (2012). Constructing a survey questionnaire to collect data on service quality of business academics. *European Journal of Social Sciences*, 29(2), 209-221.
- Roy, S., Bhattacharya, S. & Das, P. (2020). Identification of E-Learning Quality Parameters in Indian Context to Make it More Effective and Acceptable. *Proceedings on Engineering Sciences*, 2(3), 209-222. doi: 10.24874/PES02.03.001
- Tri, D. H., & Nguyen, N. H. T. (2014). An exploratory study of ICT use in English language learning among EFL university students. *Teaching English with Technology*, 14(4), 32-46.
- Yunus, M. M., Chua, P. L., Maimun, A. L., & Rizauddin, R. (2010). Evaluation of ICT usage for general or English learning purposes. *WSEAS Transactions on Information Science and Applications*, 205-211.
- Yunus, M. M., Lubis, M. A., & Lin, C. P. (2009). Language learning via ICT: Uses, challenges and issues. *Wseas transactions on information Science and applications*, 6(9), 1453-1467.

---

**Sandra Stefanovic**  
Faculty of Engineering,  
University of Kragujevac,  
Serbia  
[sandra\\_stef@yahoo.com](mailto:sandra_stef@yahoo.com)

**Alina Andreea Dragoescu**  
**Urlica**  
USAMVB "Regele Mihai I al  
Romaniei",  
Timisoara, Romania  
[andreeadrageescu@yahoo.com](mailto:andreeadrageescu@yahoo.com)

**Lulzime Kamberi**  
University of Tetovo,  
Tetovo,  
Republic of  
North Macedonia,  
[l.kamberi12@gmail.com](mailto:l.kamberi12@gmail.com)

---

