

Dino Gero Gemeri, mag.philol.angl.
Technical School Nikola Tesla, Vukovar, Croatia
dino.gemeri@skole.hr
<https://orcid.org/0009-0002-0989-914X>

Filip Knezović, mag.med.techn.
Medical High School Rijeka, Croatia
filip.knezovic4@skole.hr
<https://orcid.org/0009-0008-4467-2753>

Functionality of Loomen LMS: Croatian Educators' Perception and Experience

***Abstract:** Various shifting paradigms dictate the manner in which education systems are established, (re)organized and implemented. The emergence and rise in the popularity of learning management systems (LMSs) represent a noteworthy example of teachers' coping with the challenges of change. This study focuses on Loomen LMS, an open-source, e-learning system in which teachers, together with their students, create and manage strategies, methods and tools in order to optimize the teaching process. The objective of this research was to evaluate the functionality of Loomen LMS through the analysis of perceptions, opinions, impressions, observations and experiences of the Croatian educators who have used the platform since its implementation in public schools. This qualitative research analyzes the responses from 181 educators from both primary and secondary levels of education from each of the 21 counties in Croatia. The data was collected through a validated questionnaire survey in an online form. The results indicated that Loomen LMS was most rarely used for those features for which it was primarily designed; that there was a difference in several aspects of usage between the two levels of education; and that the frequency of usage was not asymmetrically proportional to the amount of educators' overall working experience. Data from this study provide new academic research evidence regarding Loomen LMS and its need for improvement in several aspects concerning its functionality.*

Keywords: Croatia, educational system, e-learning, LMS, Loomen

INTRODUCTION

Education. Noun. Defined as *an act or process of imparting or acquiring general knowledge, developing the powers of reasoning, and preparing oneself or others intellectually for mature life*; or as *an act or process of imparting or acquiring particular knowledge or skills*; or even as *a degree, level, or type of schooling*; or as *the art of teaching* (Definition of education, n.d.). It is a multilayered definition of a multidimensional term.

How is this phenomenon perceived in everyday life? There is a story about a teacher who was stopped in his car by a traffic policeman. The policeman saw how the teacher forgot to turn on his signal indicator, which was a clear traffic violation. As this happened in close proximity to the school, another car slowly passed next to the policeman and the vehicle he stopped. The driver of the car and the passengers were teacher's students who half-jokingly kept yelling, through rolled-down windows, phrases like *Yeah, you stopped the right man!* and *Make him pay a fine!* The perplexed policeman asked the teacher whether those were his students. After hearing the teacher's affirmative response, the policeman disregarded the half-written traffic ticket and said goodbye to the teacher with the words *Don't worry Sir, you are paying your debt to society every day in your classroom.*

This paper was presented at the international scientific conference *Global Competencies for the 21st Century* held at *Faculty of Humanities and Social Sciences* in Osijek in November 2022. under the title *Evaluation of the Usage of Loomen LMS: Croatian Teachers' Perception and Experience.*

The educator¹ from this story is one of the authors of this study, while the policeman can be seen as a reasonable member of the human society who knows, perhaps, a different aspect of the term education. Passively, the policeman is aware that the educational process is not static, but rather dynamic and full of changes and challenges. There are many parameters that influence and dictate the manner in which global education systems are established, (re)organized and implemented. Such parameters are advancement in technology, new research data, modernization of society and increased globalization. Therefore, educators must be equipped with a vast array of skills and tools to cope with the challenges of the everyday educational process. From that perspective, the emergence and rise in the popularity of *Learning Management Systems (LMSs)* represent just one example of teachers' coping with the aforementioned challenges.

However, is every such tool useful and welcomed into the educational sphere? Are they functional and to which degree? Are they used by educators across all levels of education and in what manner? This paper aims to give answers to questions like these for one specific LMS. Through the scope of the primary and secondary educational system in Croatia, the authors center their study on *Loomen LMS* - an open-source LMS used by Croatian educators. A rationale for this study is based on the fact that Loomen LMS was implemented in public schools in Croatia in 2018 and was considered to be a new and somewhat revolutionary, but also obligatory tool for educators in Croatia (Baksa and Luić, 2020; Beroš and Pongračić, 2018). Also, studies regarding Loomen LMS are scarcely found in the academic world - according to inspections through several academic search engines in which Loomen LMS is a keyword or the word from the title, at the moment of this writing there are zero articles in *WordCat*, *Education Resources and Information Center*, *ScienceDirect*, *Academia*, *Semantic Scholar*, *JSTOR* and *Base*, except for *Google Scholar* which provides one such result. Therefore, the aim of this paper is to fill the academic void and to provide functionality data about Loomen LMS as knowledge about teaching tools is critical for the teaching profession. The data was obtained through a qualitative research study of the responses from 181 educators from both primary and secondary levels of education from all parts of Croatia. The instrument used was a validated questionnaire made specifically for this research by the authors. The statements covered a range of experiences, perceptions, understandings and opinions by the educators about Loomen LMS whose subsequent assessment led to the disproval of all three hypotheses of this paper. These results show that Loomen LMS is in need of improvement in multiple aspects regarding its functionality.

This paper is organized as follows: section 2 depicts the theoretical framework by (a) examining the definition, terminology, historical overview and types of LMSs and presenting related academic research, as well as (b) describing relevant features of comprehensive curricular reform in Croatia called *School for Life* and its component Loomen LMS; section 3 details the methodology of the study; section 4 displays results; while sections 5 and 6 complete the paper with a discussion of the data and a conclusion.

THEORETICAL FRAMEWORK

LEARNING MANAGEMENT SYSTEMS

In general, any number of learning management systems can be defined as types of software and/or web-based technologies which operate on a twofold basis - *servers* that function as a foundation of the programs and *interfaces* that are operated by the individuals who use these programs (Alias and Zainuddin, 2005). Although there are a number of different LMSs,

¹ The term *educator* is referred, by the authors, to the individuals from the educational sphere who are a part of the educational process in various aspects and levels of schooling; such as, but not limited to, teachers, professors, lecturers, pedagogues, school psychologists, mentors, instructors and tutors. The term also refers to both sexes and all gender identifications.

they all offer a vast range of possibilities to the users regarding learning, teaching and education. Thus, LMSs allow educators to manage every aspect of e-learning. Educators can create and design curriculum and syllabus plans, monitor attendance and evaluate and assess students' progress. In addition to this, educators, together with their students, can store and share content and materials, participate in threaded discussions as well as use various communicational tools and forums for the optimization of the educational process (Zelinskiy, 2020). Also, LMSs provide set courses, tasks and individual training programs for the educators themselves.

Terminologically speaking, due to its framework that allows handling all aspects of the educational process, LMSs can also be labelled as *Course Management Systems (CMS)*, *Learning Content Management Systems (LCMS)*, *Reusable Learning Objects (RLO)* and *Virtual Learning Systems (VLS)* (Alias and Zainuddin, 2005; Cavus, 2015; Lonn and Teasley, 2009; Wright et al., 2014). However, Watson and Watson (2007) believe that LMSs do not limit their functionality like CMSs, LCMSs and RLOs do and that, even though they possess many similar features, the aforementioned systems should actually be regarded as being a part of the LMSs. They argue that the RLO represents the smallest form of content, which is created and handled within the LCMS, and which is subsequently organized and segmented into particular courses within the CMS. Therefore, the above-mentioned elements would serve as an infrastructure for the completed LMS (Watson and Watson, 2007). In addition to this, Paulsen (2003) labels LMSs as *Virtual Learning Environments (VLE)* or, simply, *Learning Platforms (LP)* that are used for the management of the educational process.

Observed from the historical standpoint, LMSs started developing due to massive technological advancements which began in the 1990s. Most of these systems became commercialized after being originally created as university concepts - they were not created as business ventures initially. However, through various technical developments, many LMSs were subsequently released under open source, instead of commercialized licenses. Ever since then, there has been a rapid worldwide increase in the usage and, therefore, in perfecting LMSs. According to Coates, James and Baldwin (2005) LMSs became, through constant usage, scalable systems that can be used as additional means of education or function as a basis for an entirely independent educational course or training program. Furthermore, Paulsen (2003) attributes the majority of the success of the LMSs to their availability, as well as accessibility.

All of the above led to the creation of the three main types of LMSs: *proprietary*, *cloud-based* and *open-source* (Dobre, 2015). Proprietary LMSs revolve around gaining profits and are licensed products developed by professional programmers (Ghilay, 2019). They require, in most cases, licensing fees with additional expenses concerning subscription and maintenance. Examples of proprietary LMSs are *Blackboard*, *Litmos*, *eCollege*, *Saba*, *D2L* and *Topyx*. Next, cloud-based LMSs represent somewhat the easiest and simplest LMS type option due to their lack of need for an instalment of the required software or hardware in order to use it. Users log into a web-based platform that encompasses a plethora of tools used for activities such as document sharing, file storage, collaboration, communication and video and photo sharing (Ghilay, 2019). Examples of cloud-based LMSs include *Coassemble*, *Graphy*, *Absorb LMS*, *Talent LMS*, *ISpringLearn LMS* and *Google Account System*. Finally, open-source LMSs denote a program whose source code, as the name itself suggests, is made available for free usage and modification in any form which users see fit. This is the primary reason why open-source LMSs are becoming increasingly prevalent when compared to other types of LMSs (Berking and Gallagher, 2016). Examples of open-source LMSs are *Moodle*, *Sakai LMS*, *Forma LMS*, *ELMS Learning Network*, *Sensei LMS* and *Canvas LMS*. Also, another example of an open-source LMS is the LMS that is the focus of this study - *Loomen LMS*.

Loomen LMS is based on, arguably, the most popular LMS in usage, Moodle. Moodle is a *single robust, secure and integrated system* for the creation of learning environments. Created in 2002, it has been developing through the principles of social constructionist pedagogy. Like Loomen LMS, it is designed to help both teaching and learning. Moodle is free and easy to use, and available in more than 120 languages. Both Moodle and Loomen LMS are highly

customizable and flexible due to its open-source code. They share a variety of built-in tools, courses and features such as chats, forums, dictionaries, quizzes and individual training programs (Guri-Rosenblit, 2018; Nedeva, 2005; Vaganova et al., 2020). The official guidebook made by the *Croatian Academic and Research Network* (2019:4) defines Loomen LMS as a *software tool for creating e-courses, distance education and combining virtual and traditional educational processes*. Additionally, CARNET (2019) states that it provides support in attending ready-made e-courses through virtual classrooms as well as using off-the-rack educational materials; in creating courses in its entirety; in combining distance education with traditional teaching; and, lastly, in contacting the administrators by providing an e-mail address.

Having this in mind, the benefits of implementing any kind of technologies into the education process are undeniable and have been the object of extensive studies and research over the past two decades as paper textbooks, workbooks and notebooks; blackboards and projectors; chalks and handouts, are no longer the only means for education (Eady and Lockyer, 2013; Ferdig, 2006; Khoshimova et al., 2020; Krалеva et al., 2019; Sife et al., 2007). In one of the first studies of this matter, Ehlers (2004) concludes, after assessing 30 aspects of e-learning (he labels them as dimensions), that the success of such platforms lies in the orientation towards the individual needs of each and every learner. Correspondingly, the emergence and development of LMSs provide new opportunities for educators as well as students and make the educational process less trapped by the boundaries of traditional learning and teaching means. LMSs offer a broad spectrum of possibilities that are adaptable to the needs and preferences of an individual learner (Capper, 2001; Grönlund and Islam, 2010; Harandi, 2015; Huda et al., 2018; Le and Do, 2019). In their respective studies, Liaw (2008) and Basak (2018) surmise that educators should take advantage of the benefits that LMSs provide as they contribute to the overall effectiveness of learning and optimization of the education process.

Moreover, the attitude of educators towards LMSs in usage can play a significant role in raising their effectiveness. In his study, Hoq (2020) concludes that the majority of educators have a positive stance toward LMSs as they believe it saves time, and energy and modernizes the educational process. On the other hand, Kar's (2020) research findings show an unsatisfactory outlook on LMSs by educators. He attributes this to educators' lack of technological knowledge and experience when working with LMSs. A confirmatory study is made by Berbar (2020) who reasons that educators have negative perceptions towards LMSs due to the absence of training courses and face-to-face communication with students.

It is evident that the effectiveness of LMSs is dependent upon the technological knowledge and digital literacy of the educators. Numerous studies identify new skill sets that must be mastered by educators (Alexander et al., 2017; Bates and Sangra, 2011; Benson and Brack, 2009; Ubachs et al., 2017). These include but are not limited to, skills for designing curriculums, using additional tools (surveys, quizzes, dictionaries...), uploading and downloading educational materials, creating subgroups, implementing lesson objectives, monitoring progress, testing and grading (Guri-Rosenblit, 2018; Wilson et al., 2004). Li and Yu (2022) state that the digital literacy of educators must be considered indispensable as it will be completely integrated into the conventional education process *in the long run*. Therefore, educators must be properly educated in order to educate effectively through LMSs.

COMPREHENSIVE CURRICULAR REFORM *SCHOOL FOR LIFE*²

Loomen LMS came to fruition as a part of the *Comprehensive Curricular Reform (CCR)* in the Republic of Croatia. The name of the reform was *School for Life* as it symbolized the preparation of students for later life as well as the need for continuous education. It was the

² Croatian language: *Škola za život*

most comprehensive reform ever attempted in Croatian history³. It began experimentally in 74 schools in Croatia (48 primary and 26 secondary schools) in the school year 2018/2019 and expanded the year after to all other schools in the country (CARNET, 2020).

The basic ideology of the reform included changing educational paradigms such as making students the focal point of educational processes and giving more freedom and autonomy to the educators (Bušljeta and Kardum, 2019); improving technical and technological aspects of the institutions of education (CARNET, 2020); and, subsequently, raising the extent of employability, as well as the international competitiveness and expertise of the Croatian people (Beroš and Pongračić, 2018). According to the summary report of monitoring and evaluation findings of the CCR in Croatia, there were four major themes in the focus of the reform: learning outcomes, problem solving, learning to learn and coaching (Curriculum Reform in Croatia, n.d.). It is noticeable that there are no signs of the actual name of the CCR mentioned in this report - in the entire document, which is quite extensive and detailed, the name of the CCR School for Life is referred to only as *our project* by the hired panel of international experts. CCR School for Life encountered various problems and difficulties with Beroš and Pongračić (2018) emphasizing the generally dire atmosphere surrounding the CCR and describing it as threatening instead of stimulating. It is also quite suggestive that the most recent post/news article published on the official website of the reform is, at the moment of conducting this study, in fact, almost three years old.

Nevertheless, as it is stated earlier, CCR School for Life was implemented into the Croatian educational system and with it, so was Loomen LMS. It can also be added that Loomen LMS represented the most prominent aspect of the reform as it was the primary tool for improving the technical and technological elements of the education system, which was one of the focal points of the CCR.

METHODOLOGY

RESEARCH AIM AND HYPOTHESES

The aim of this empirical research is to fill the academic void and to provide functionality data about Loomen LMS through the analysis of the perceptions, opinions, impressions, observations and experiences of the Croatian educators who have used the platform since its implementation into public schools in 2018.

Based on the research aim, the following hypotheses are formed:

- H1:** *Loomen LMS possesses high functionality as it is used for the very purpose for which it was designed.*
- H2:** *There is no significant difference in the usage of Loomen LMS between primary and secondary levels of education.*
- H3:** *The usage of Loomen LMS is asymmetrically proportional to the length of working experience of the educator.*

INSTRUMENT

The instrument used in this cross-sectional study is a multidimensional questionnaire which consists of two parts, with the second part having two variations. No standardized instruments were implemented as none corresponded to the authors' needs and intended purposes. Therefore, the questionnaire is made and validated specifically for this study by a

³ Since gaining its independency in 1991, Croatia has faced its educational system against several comprehensive curricular reforms with varying degrees of success and impact. The majority of these reforms were greatly politicised.

panel of experts.⁴ It is concluded that the ambiguity of the measurement item is eliminated, that the face validity is established, that the questionnaire measures what the respondents know, with a highly reliable scale used and that all fronts of the case variables are covered with high intercorrelational reliability. Also, the high internal consistency of the items within the scale is confirmed by Cronbach's alpha coefficient of $\alpha=0.92$.

The first part of the questionnaire contains socio-demographic variables that are based on seven questions about the features of the participants. The second part contains case study statements and has variations A and B. They are segregated by the distinctive question whose answer further directs the participants. Variation A is for the participants who answer positively on the distinctive question and is comprised of 23 statements and one question. Variation B is for the participants who answer negatively on the distinctive question and is comprised of only one question. The complete structure of the questionnaire is illustrated in Figure 1. This type of multiple questionnaire structure allows the authors to assess both sides of the spectrum of the functionality of Loomen LMS.

Figure 1

Structure of the Questionnaire on the Functionality of Loomen LMS in Croatia

socio-demographic variables	case study variables	
7 questions about participants' gender, age, level of education, type of the educational institution, county of workplace, educational area of expertise and length of employment service.	distinctive question: <i>Have you ever used Loomen LMS?</i>	
	A (yes)	B (no)
	23 statements on a 5 point Likert scale + 1 open-ended question <i>(What are your thoughts, perceptions and experiences about Loomen LMS?)</i>	1 open-ended question <i>(Why have you never used Loomen LMS?)</i>

Note. Variation A contains 23 statements where educators specify their level of agreement on a five-point Likert scale which ranges from *rarely* to *very often*.

PARTICIPANTS

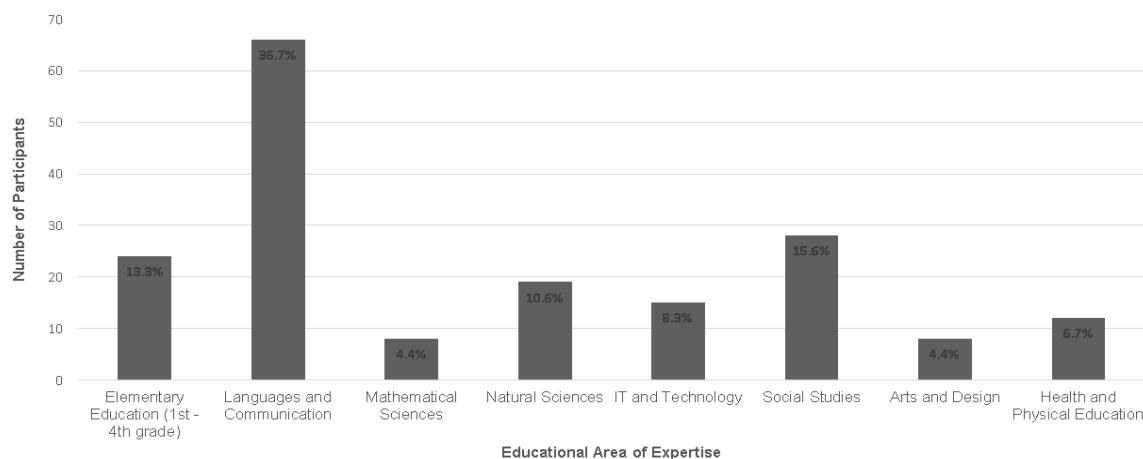
The research is conducted with 181 participants who generated 181 valid responses. Participants are educators from primary (N=102, 56.3%) and secondary (N=79, 43.7%) levels of education, with the majority being female (N= 158, 88.3%). Also, a significant majority (N=167, 92.3%) of the participants have educational EQF level 7 degrees⁵. The length of employment service of the participants is equitably distributed throughout the spectrum and each of the 21 counties in Croatia is proportionally represented. Figure 2 denotes data concerning the educational area of expertise of the participants.

⁴ Panel includes distinguished members of educational sphere with more than a decade of teaching experience per each member and across 8 educational areas of expertise.

⁵ *European Qualifications Framework* - Level 7 includes all educational degrees that are equivalent to a Master's degree.

Figure 2

Educational Area of Expertise of the Participants



PROCEDURE

The research was conducted in the winter of 2022. The questionnaire was uploaded online and responses from educators were collected via *Google Forms* survey tool. All participants were informed about the aims and purposes of the research with complete anonymity of the respondents guaranteed. All aspects of the Code of Ethics in Academic Research (2021) were honored. Results were analyzed using *IBM SPSS Statistics* software with descriptive statistics, categorization and comparison used for testing H1; Kolmogorov-Smirnov test and Mann-Whitney U test used for testing H2; and chi-squared test used for testing H3.

RESULTS

FUNCTIONALITY OF LOOMEN LMS: VARIATION A - STATEMENTS

90.6% (N=164) of the participants answered positively on the distinctive question and, therefore, used Loomen LMS to some degree and variation. Obtained data is observed from three angles - data which is predominantly oriented at either of the two sides of the spectrum of the Likert scale and data that is represented somewhat equally throughout the spectrum.

Thus, 72% (N=116) of the participants never used Loomen LMS at school for real-time learning processes⁶ (QN4); while 54.9% (N=90) of them never used the system for any-time learning processes⁷ (QN5). Next, 71.2 % (N=116) of the participants never used Loomen LMS as a grading tool for students' knowledge (QN16); and 69.3% (N=113) of them never used

⁶ Real-time learning process denotes a synchronous instruction, a process of acquiring knowledge at the same place and at the same time by the educators and their students (Finkelstein, 2006).

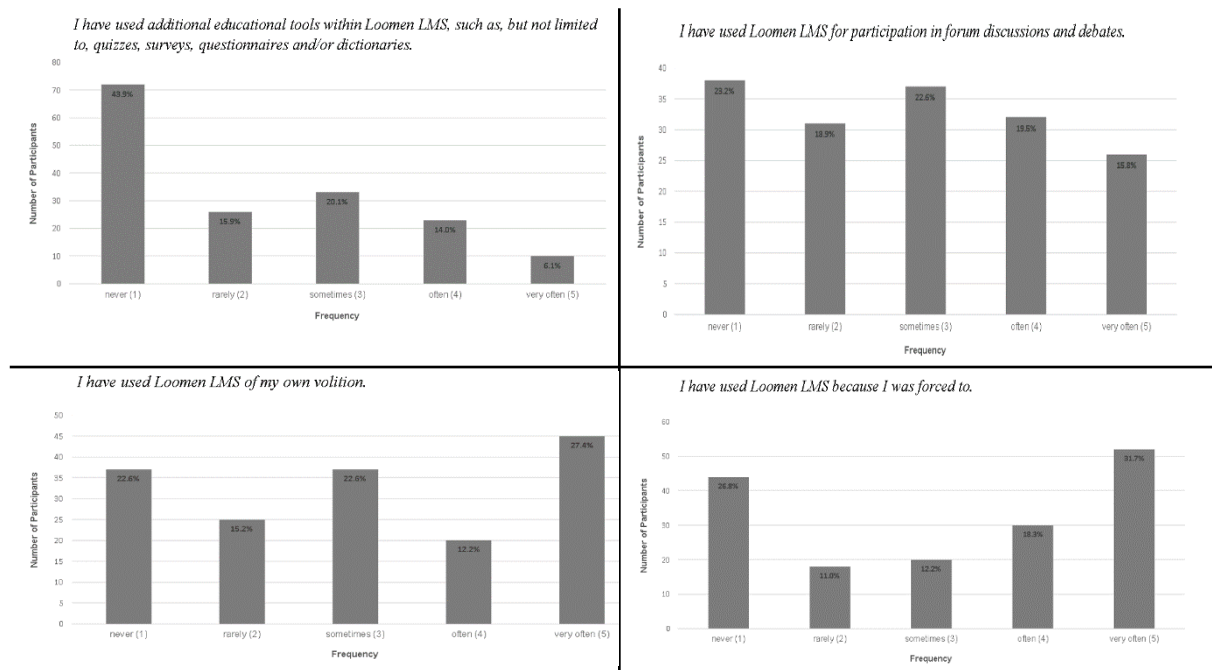
⁷ Any-time learning process denotes an asynchronous instruction, a process of acquiring knowledge by the students at their own pace and at their own place, within the defined limits set by the educators (Finkelstein, 2006).

Loomen LMS as an assessment tool for tracking students' educational progress (QN15). Fifthly, 69.9% (N=114) of the participants admitted to never using Loomen LMS for virtual teaching (QN3). Additionally, the data showed that 68.3% (N=112) of the participants never used the aforementioned system as a tool for informing students about news related to the educational process (QN18); nor as a system for sharing educational materials with students (64.4%, N=105, QN17); nor as a communicational tool whatsoever (67.3%, N=109, QN14). Lastly, 58% (N=94) of the participants stated that they never used Loomen LMS for creating their own educational curriculum or syllabus (QN1); as well as denied still using Loomen LMS for any aspect of the educational process at the moment of their participation in this study (62.2%, N=102, QN23).

On the other end of the spectrum, 42.7% (N=70) of the participants claimed that they used Loomen LMS very often for attending built-in e-courses for the purpose of individual professional improvement (QN7). Furthermore, 40.4% (N=65) of them used the system very often for working and completing various educational tasks set by the system administrators (QN10). The remainder of the data is represented somewhat equally throughout the spectrum with Figure 3 denoting the most relevant ones.

Figure 3

Functionality of Loomen LMS - Relevant Statements



Note. Denoting questions number 2, 11, 21 and 22.

FUNCTIONALITY OF LOOMEN LMS: VARIATION A - OPEN-ENDED QUESTIONS

Out of 90.6% (N=164) of the participants who answered positively on the distinctive question, 76.2% (N=125) gave a valid response to the open question at the end - *What are your thoughts, perceptions and experiences about Loomen LMS?*. Table 1 shows the categorization of responses.

Table 1

Functionality of Loomen LMS - Categorization of Educators' Responses A

General thoughts, perceptions and opinions	Percentage (%)	Number of participants (N)
(generally) positive	40	50
neutral	4	5
(generally) negative	56	70

It is noticeable that positive responses are not as detailed, elaborate, thorough and notably intense in their nature as negative ones are. Positive answers are significantly shorter, often stating that the system is satisfactory or describing it with a short simple sentence. For example, several participants modestly wrote adjectives like *good, very good, excellent, (mostly) positive, useful, just fine, powerful, respectable* and *not bad*. One participant wrote that Loomen LMS is *an excellent system with useful materials available*; the other stated that *it is a useful tool with many possibilities*. Furthermore, one participant wrote that *is an excellent system that can function as an addition to the traditional way of teaching, or act as an independent e-learning system*, also adding that all of his teaching materials are in Loomen LMS and that *CARNET's support is fast and efficient*. Another participant praised the support of the administrators saying that *the system is great for both the teachers and the students, as all of the tools are available inside one platform*. One participant stated that the system contained useful materials for state qualification exam in teaching.

In terms of purpose, there are two dominant aspects of usage which, subsequently, differed among participants. Participants stated that Loomen LMS was adequate for the purpose of individual professional improvement because of practicality in time and place management. However, for the purpose of virtual teaching, the participants deemed it inadequate due to its complex, unclear and unfriendly interface. Such was the answer of one of the educators who denoted that *Loomen LMS is excellent for professional development, but for virtual learning, there are far better systems such as Teams or Google Classroom*; the other stated that *she is satisfied with built-in e-courses and ready-made programs for self-improvement*; while the third said that *it is a respectable platform but not really useable for e-learning*.

Educators formed a fairly unified opinion that Loomen LMS was more appropriate for usage with older students. Therefore one participant expressed that *the system is designed in an interesting way, but there are simpler and more attractive platforms for working with younger students*; the second noticed that *it's not a bad platform for high-school and college students, but for elementary school students, MS Teams is easier and clearer*; and third summarized that *even though it contains many possibilities for the usage in teaching... it is too complicated for elementary school students to use without teachers' guidance*.

A lot of remarks were directed towards the structure and interface of the system. It was labelled as complex, visually uninteresting, insufficiently interactive, impractical, non-functional and not user-friendly. Thus, one educator commented that the system has an *unintuitive interface* and that he *cannot find a single advantage of Loomen LMS over similar platforms*. Another participant wrote that *Loomen LMS has its advantages and the courses are useful and well presented, but in general, as a platform, it is confusing and not user-friendly enough*.

Also, it was evident from the participants' responses that the encompassed negativity towards Loomen LMS was rooted in the manner in which this system was implemented in schools. Many of the responses emphasized that educators felt pressured into using the system. Therefore one participant denoted, as she was *literally forced into using the platform*, she felt an *aversion towards it and will not use the platform at all*. Another participant responded that *forced education is never a good thing, especially when it also has time limitations and deadlines*. One participant stated that he would never use the system if it was not mandatory. Several participants wrote about the pointlessness of obligatory tasks for educators and emphasized the meaninglessness of the badges that were awarded upon successful completion of the aforementioned tasks. One participant concluded that Loomen LMS was mostly used

because it was forced by the *Ministry of Education and Science*, and that, after the change in ministry officials, *nobody later even heard of Loomen LMS*.

Entirely negative responses were submitted and varied in length and detail from one word to several sentences. Thus, participants described Loomen LMS as *bad, pointless, utter failure, perplexing, a disaster and nonsense*. Several participants stated that *it is a complete waste of time and money*; another participant argued that Loomen LMS represented a *humiliation of the teaching profession and therefore a degradation that we should not have allowed to happen to ourselves*. One participant stated that *the system is nonsense that robs teachers of the valuable time that they should spend working with students instead, and not be connected to any brainwashing platforms*; while another said that *the system has little to no practicality in the education process and was, instead, an element for greasing the wheels of bureaucracy*.

FUNCTIONALITY OF LOOMEN LMS: VARIATION B - OPEN-ENDED QUESTION

Variation B of the questionnaire consists of the remaining 9.4% (N=17) of the participants who answered negatively on the distinctive question. There are 16 valid responses to the open-ended question *Why have you never used Loomen LMS?*. The categorization of the responses is shown in Table 2.

Table 2

Functionality of Loomen LMS - Categorization of Educators' Responses B

Reasoning for not using Loomen LMS	Percentage (%)	Number of participants (N)
Lack of need	25	4
Lack of opportunity	18.7	3
Ignorance	12.5	2
Ineffectiveness of the system	12.5	2
Not specified	31.3	5

The noteworthy response includes a female participant who stated that she did not use Loomen LMS deliberately because, due to her 40 years of work experience, combined with the status of an advisory teacher, she did not want to spend time on *useless typing*.

USAGE OF LOOMEN LMS: PRIMARY VS SECONDARY LEVEL OF EDUCATION

Kolmogorov-Smirnov test of the equality of continuous probability distributions reveals that there is no normal distribution of the data. This was to be expected due to the sample size in combination with a five-point Likert scale. Therefore, the Mann-Whitney U test was used for further analysis. Table 3 illustrates the points of discrepancy in the usage of Loomen LMS between primary and secondary level educators.

Table 3*Primary vs Secondary Level Educators - Usage Disparity*

QN	Statement	Educational level	M	SD	C	IKR	R	M-W
23.	I still use Loomen LMS for any aspect of the educational process, irrelevant of whether it was mentioned or not in this questionnaire.	primary level	1.72	1.24	1.00	1.00	4.00	0.049
		secondary level	2.18	1.54	1.00	2.00	4.00	
2.	I have used additional educational tools within Loomen LMS, such as, but not limited to, quizzes, surveys, questionnaires and/or dictionaries.	primary level	2.04	1.25	1.00	2.00	4.00	0.031
		secondary level	2.49	1.35	2.00	2.00	4.00	
3.	I have used Loomen LMS for virtual/online teaching.	primary level	1.64	1.23	1.00	0.00	4.00	0.030
		secondary level	2.12	1.59	1.00	3.00	4.00	
7.	I have used Loomen LMS for attending built-in e-courses for the purpose of individual professional improvement.	primary level	4.03	1.26	5.00	2.00	4.00	0.012
		secondary level	3.62	1.29	4.00	2.00	4.00	

There are statistically significant differences present in four aspects when comparing data of the participants who worked at the primary level of education versus those who worked at secondary levels of education. It is evident that secondary level educators used Loomen LMS more frequently in three aspects related to an overall usage frequency, more frequent usage of the built-in tools and for virtual teaching. In contrast to this, primary level educators used Loomen LMS more frequently for one aspect of attending courses for the development of their professional skills.

USAGE OF LOOMEN LMS AND LENGTH OF WORKING EXPERIENCE

Chi-squared test was used in order to compare observed data with the expected data. The test reveals that those educators who have the shortest length of working experience used Loomen LMS less frequently than was projected. Namely, educators who have less than five years of working experience used Loomen LMS less frequently than it was expected ($\chi^2(7) = 15.497, p = 0.03, p < 0.05$). The data of every other group is inside of the expected data margins.

DISCUSSION

This study tested the functionality of Loomen LMS as H1 proposes that Loomen LMS is highly used for the very purposes it was created. According to the definition of its creator CARNET (2019), this means educators designing their own educational curriculum and syllabus; combining virtual and traditional educational processes; using additional educational tools within the system; and creating and attending e-courses. The results of this study show negative usage of three out of these four focal aspects.

Al-Ajlan and Zedan (2008) concluded, in a comparison study between various LMSs, that the effective creation of its own curriculum was one of the points by which the educators deemed Moodle platform superior to other LMSs; while Umek et al. (2015) concluded that educators who created their own curriculum courses inside LMS obtained better results when assessing the overall knowledge of their students. Contrastingly, 58% of educators never used Loomen LMS for creating their own educational curriculum or syllabus. Next, Al Yafaei and Attamimi (2019) observed that the educational process was optimal if it had a virtual component implemented into a traditional way of teaching. Nonetheless, Loomen LMS was never used for virtual teaching by 69.9% of educators. In addition, Muhsen et al. (2013) emphasized the advantages of using additional educational tools within the LMSs and their positive effects on the educational process. However, 43.9% of educators never used additional educational tools within Loomen LMS. The only point where Loomen LMS showed a high level of functionality was the attendance of e-courses with the purpose of professional development of educators which 42.7% of them frequently used.

Continuing the discussion outside of four focal aspects, Loomen LMS offers a wide range of educational possibilities, denoting both features within the program and their application. However, data indicates that the majority of it is not used as the creator intended. For example, 71.2% of educators never used Loomen for the assessment of students' knowledge; 69.3% never used it for tracking students' progress; 68.3% never used it as an informational tool; nor as a communicational tool by 67.3% of them; and 64.4% of educators never used Loomen LMS for uploading the educational materials intended for students. This is unfortunate as there are many studies that imply high functionality and indicate frequent usage of these aspects as great facilitators of the educational process (Ivanović et al., 2013; Nedeva, 2005; Vaganova, 2020; Zelinskiy, 2020).

Finally, when assessing functionality of Loomen LMS from the perspective of the educators' thoughts, perceptions and experiences, it is evident that Loomen LMS induces conflicting opinions from the educators as their responses can be found on both ends of the data spectrum. Still, the majority are negative in nature and expose a number of flaws and deficiencies. They are significantly more intricate, detailed and elaborate than the positive ones, which simply denotes that Loomen LMS is adequate while describing the advantages and strong points in a brief manner. Also, it is noticeable that even neutral responses tend to have a negative curve.

Continuing to H2, the study proposes that there are no significant differences in the usage of Loomen LMS between primary and secondary levels of education. The logic behind this hypothesis is the fact that the system was implemented through CCR at both levels of education equally, with no differences or variations. However, data shows user disparity in four aspects of usage between the two levels of education. Three aspects of usage are in favor of secondary level educators who, on average, used Loomen LMS more frequently; used the tools built within the system more often, and used it for virtual teaching to a greater extent. The fourth aspect is in favor of primary level educators who used it slightly more frequently for attending built-in e-courses for the purpose of individual professional improvement. This data is coherent and in juxtaposition with the educators' thoughts, perceptions and experiences that Loomen LMS is perhaps more adequate for working with older students. This is relatable to several studies which illustrate how older students possess higher technical and digital literacy and are, therefore, more prepared for efficient usage of the LMSs (Dahal, 2019; Lopes, 2011; Rodrigues et al., 2017).

Finally, within the H3, authors propose that when the level of working experience of the educator increases, the frequency of the usage of the system declines. This is rooted in the fact that those educators with the least experience will need the most support from the educational system as compensation for their inexperience. Also, they tend to be younger and more agreeable to changes, with higher levels of digital literacy. As Rößling et al. (2010) concluded that longer working experience correlated with higher levels of negative attitude towards LMSs. However, data shows the opposite as those educators with the least working experience tended to use Loomen LMS less frequently than expected.

CONCLUSION

In conclusion, it is irrefutable to the authors that their H1 must be disproved as data shows that Loomen LMS does not possess high functionality. In other words, it is not used for the intended purposes for which it was designed. Reasons for this are debatable, and perhaps, can represent a strong base for further research. The authors' H2 is also rebutted as there are significant differences in the usage of Loomen LMS between primary and secondary levels of education. The rebuttal of this hypothesis is, arguably, the least surprising to the authors as Loomen LMS follows the data framework of other LMSs where, similarly, their function when working with younger students is not as optimal as when working with older students. Establishing levels of optimization of Loomen LMS can be a point for future research. Lastly, the authors' H3 is refuted too, as educators with the least working experience used the system less than projected. The reasons for this are questionable. Authors debate that this could be connected to their university studies patterns and routines or general overwhelmingness of the changing situation where students become educators. In any case, this may be another direction of interest for future studies. With all three hypotheses disproved, it is evident that Loomen LMS is in need of improvement in several aspects as the Croatian educators are not entirely satisfied with it.

LIMITATIONS

Limitations of this study can be found in a number of participants. In order to obtain more generalizable results, further research is needed with the purpose of gathering data from a larger number of participants. Also, this study does not incorporate the thoughts, perceptions and experiences of the students who used Loomen LMS. Their input would be indispensable as it would complete the notion of functionality of Loomen LMS.

REFERENCES

- Al Yafaei, Y., & Attamimi, R. (2019). Understanding Teachers' Integration of Moodle in EFL Classrooms: A Case Study. *English Language Teaching*, 12(4), 1-6. <https://doi.org/10.5539/elt.v12n4p1>
- Al-Ajlan, A., & Zedan, H. (2008, October). Why Moodle. In *2008 12th IEEE International Workshop on Future Trends of Distributed Computing Systems* (pp. 58-64). IEEE. <https://doi.org/10.1109/ftdcs.2008.22>
- Alexander, B., Becker, S. A., Cummins, M., & Giesinger, C. H. (2017). *Digital literacy in higher education, Part II: An NMC Horizon project strategic brief* (pp. 1-37). The New Media Consortium. <https://doi.org/10.5209/tekn.58102>
- Alias, N. A., & Zainuddin, A. M. (2005). Innovation for better teaching and learning: Adopting the learning management system. *Malaysian online journal of instructional technology*, 2(2), 27-40. <https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=d5f63457fb7c53eb83bd2149d860753c3ebca662>
- Baksa, T., & Luić, L. (2020). From Face-To-Face to Remote Learning in Times of Covid 19 Crisis in Croatia. In *ICERI2020 Proceedings* (pp. 9318-9326). IATED. <https://doi.org/10.21125/iceri.2020.2067>
- Bates, A. T., & Sangra, A. (2011). *Managing technology in higher education: Strategies for transforming teaching and learning*. John Wiley and Sons.
- Benson, R., & Brack, C. (2009). Developing the scholarship of teaching: what is the role of e-teaching and learning?. *Teaching in Higher Education*, 14(1), 71-80. <https://doi.org/10.1080/13562510802602590>
- Berber, K. (2020). EFL teachers' perceptions and experiences with the Moodle platform during covid-19 pandemic: a case study at the University of Tizi-Ouzou. *Journal of Studies of Language, Culture, and Society (JSLCS)*, 11-23. https://www.researchgate.net/profile/Katia-Berber/publication/359659160_EFL_Teachers'_Perceptions_and_Experiences_with_the_Moodle_Platform_during_COVID-19_Epidemic_A_Case_Study_at_the_University_of_Tizi-Ouzou/links/6246ff448068956f3c5ffc4f/EFL-Teachers-Perceptions-and-Experiences-with-the-Moodle-Platform-during-COVID-19-Epidemic-A-Case-Study-at-the-University-of-Tizi-Ouzou.pdf
- Berking, P., & Gallagher, S. (2016). Choosing a learning management system. Advanced Distributed Learning (ADL) Initiative. https://www.researchgate.net/publication/265552175_Choosing_a_Learning_Management_System
- Beroš, I., & Pongračić, L. (2018). The impact of the 'conservative modernization' on the educational system in Croatia: the conceptual and implementational pressures in the

- process of comprehensive curricular reform. *Metodički obzori: časopis za odgojno-obrazovnu teoriju i praksu*, 13(1 (25)), 77-100. <https://doi.org/10.32728/mo.13.1.2018.4>
- Bušljeta, R., & Kardum, M. (2019). "School for Life" – Theoretical Background and Analysis of Croatian Reform in School Education. *European Journal of Social Science Education and Research*, 6(2), 39-47. <https://doi.org/10.26417/ejser.v6i2.p39-47>
- Capper, J. (2001). E-learning growth and promise for the developing world. *TechKnowLogia*, 2(2), 7-10. http://techknowlogia.org/TKL_Articles/PDF/266.pdf
- Cavus, N. (2015). Distance learning and learning management systems. *Procedia-Social and Behavioral Sciences*, 191, 872-877. <https://doi.org/10.1016/j.sbspro.2015.04.611>
- 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(1), 19-36. <https://doi.org/10.1080/13583883.2005.9967137>
- Code of Ethics in Academic Research (2021). Italy, European University Institute
- Croatian Academic and Research Network – CARNET. (2018). Sustavan razvoj digitalnih kompetencija djelatnika u e-Školama. Retrieved December 12th, 2022. https://pilot.e-skole.hr/wp-content/uploads/2016/12/Brosura_Sustavan-razvoj-digitalnih-kompetencija-djelatnika-u-skolama.pdf
- Croatian Academic and Research Network – CARNET. (2019). Priručnik za polaznike. Prvi koraci polaznika u sustavu Loomen i virtualnim učionicama. Retrieved November 2nd, 2022. <https://arhiva-2021.loomen.CARNET.hr/mod/resource/view.php?id=358945>
- Curriculum Reform in Croatia. (n.d.). Škola za Život. Retrieved November 13th, 2022. <https://skolazazivot.hr/sazetak-engleski/>
- Dahal, N. (2019). Online assessment through Moodle platform in higher education. In *ICT integration in education: Access, quality, and equity Education, ICT in Education Conference* (pp. 19-21). https://www.researchgate.net/profile/Niroj-Dahal-4/publication/335691672_ONLINE_ASSESSMENT_THROUGH_MOODLE_PLATFORM_IN_HIGHER_EDUCATION/links/5dc0ba05a6fdcc2128047ac0/ONLINE-ASSESSMENT-THROUGH-MOODLE-PLATFORM-IN-HIGHER-EDUCATION.pdf
- Definition of education. (n.d.). In www.dictionary.com. <https://www.dictionary.com/browse/education>
- Dobre, I. (2015). Learning Management Systems for higher education-an overview of available options for Higher Education Organizations. *Procedia-social and behavioral sciences*, 180, 313-320. <https://doi.org/10.1016/j.sbspro.2015.02.122>
- Eady, M., & Lockyer, L. (2013). Tools for learning: Technology and teaching. *Learning to teach in the primary school*, 71. <https://ro.uow.edu.au/cgi/viewcontent.cgi?article=1413&context=asdpapers>
- Ehlers, U. D. (2004). Quality in e-learning from a learner's perspective. *European Journal of Open, Distance and E-learning*, 7(1). <https://doi.org/10.4000/dms.2707>
- Ferdig, R. E. (2006). Assessing technologies for teaching and learning: understanding the importance of technological pedagogical content knowledge. *British journal of educational technology*, 37(5), 749-760. <https://doi.org/10.1111/j.1467-8535.2006.00559.x>
- Finkelstein, J. E. (2006). *Learning in real time: Synchronous teaching and learning online* (Vol. 5). John Wiley & Sons.
- Ghilay, Y. (2019). Effectiveness of learning management systems in higher education: Views of Lecturers with different levels of activity in LMSs. *Journal of Online Higher Education*, 3(2), 29-50. https://dlwqtxts1xzle7.cloudfront.net/64712971/EffectivenessofLearningManagementSystemsInHigherEducation.pdf?1603084926=&response-content-disposition=inline%3B+filename%3DEffectiveness_of_Learning_Management_Sys.pdf&Expires=1687618141&Signature=IqlNW2iV941X6zCXOEMZPOcn5Ec5odFBnoxEi4nYCH3jOyLrysVV

[W4OBsOvOjmJR8qecNp9T-dU2FAOxKNnSqNGllKDCOB~HCNONyRjq8Xetl2ayKO1KaXKuHkHXkXlJtDMEUDjQQdbocfVShQUUMOiJ9BUjW2ZeZjYxWBpFJLa2OHi eHnpsbu08ccsZ7qn~w8nABEFADpjK14ff31BfA2sBCuLY7o4dkhc3AAe14DiQqhwF UZJzf-oj3OhWvaym4bX37vhGfrMcnzm9BTTwXZNPc4gG91Mj1ZkqwsijvaCni-9Ygc M4zxOzuXiQ94yRBhVrcepu89mJ3Q9qzgxZzQ &Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA](https://doi.org/10.1080/02681101003746490)

- Grönlund, Å., & Islam, Y. M. (2010). A mobile e-learning environment for developing countries: The Bangladesh virtual interactive classroom. *Information Technology for Development, 16*(4), 244-259. <https://doi.org/10.1080/02681101003746490>
- Guri-Rosenblit, S. (2018). E-teaching in higher education: An essential prerequisite for e-learning. <https://doi.org/10.7821/naer.2018.7.298>
- Harandi, S. R. (2015). Effects of e-learning on Students' Motivation. *Procedia-Social and Behavioral Sciences, 181*, 423-430. <https://doi.org/10.1016/j.sbspro.2015.04.905>
- Hoq, M. Z. (2020). E-Learning during the period of pandemic (COVID-19) in the kingdom of Saudi Arabia: an empirical study. *American Journal of Educational Research, 8*(7), 457-464. <https://doi.org/10.12691/education-8-7-2>
- HRVATSKA, R. Vrednovanje eksperimentalnoga programa Škola za život u školskoj godini 2018./2019. <https://mzo.gov.hr/UserDocsImages/dokumenti/Obrazovanje/NacionalniKurikulum/Evaluacija-Skola-za-zivot/Vrednovanje%20eksperimentalnoga%20programa%20Skola%20za%20%C5%BEivot%20u%20%C5%A1kolskoj%20godini%202018.%20-%202019.%20-%20objedinjeno%20izvjesce.pdf>
- Huda, M., Maseleno, A., Teh, K. S. M., Don, A. G., Basiron, B., Jasmi, K. A., ... & Ahmad, R. (2018). Understanding Modern Learning Environment (MLE) in big data era. *International Journal of Emerging Technologies in Learning (Online), 13*(5), 71. <https://doi.org/10.3991/ijet.v13i05.8042>
- Ivanović, M., Putnik, Z., Komlenov, Ž., Welzer, T., Hölbl, M., & Schweighofer, T. (2013). Usability and privacy aspects of Moodle: students' and teachers' perspective. *Informatica, 37*(3), 221-230. [file:///C:/Users/Korisnik/Downloads/451-524-1-PB%20\(2\).pdf](file:///C:/Users/Korisnik/Downloads/451-524-1-PB%20(2).pdf)
- Kar, S. (2020). Teachers' attitudes towards online teaching (e-learning) during Covid-19 lockdown. *Journal of Information and Computational Science, 10*(8), 351-358. <https://www.tojdel.net/journals/tojdel/volumes/tojdel-volume09-i04.pdf#page=65>
- Khoshimova, D., Otajonova, D., & Khaldarchayeva, G. (2020). Modern technologies in teaching foreign languages. *Academic Research in Educational Sciences, (3)*, 504-508. <https://cyberleninka.ru/article/n/modern-technologies-in-teaching-foreign-languages>
- Kraleva, R., Sabani, M., & KraleV, V. (2019). An analysis of some learning management systems. *International Journal on Advanced Science, Engineering and Information Technology, 9*(4), 1190-1198. <https://doi.org/10.18517/ijaseit.9.4.9437>
- Kumar Basak, S., Wotto, M., & Belanger, P. (2018). E-learning, M-learning and D-learning: Conceptual definition and comparative analysis. *E-learning and Digital Media, 15*(4), 191-216. <https://doi.org/10.1177/2042753018785180>
- Le, T. Q., & Do, T. T. A. (2019). Active teaching techniques for engineering students to ensure the learning outcomes of training programs by CDIO Approach. *International Journal on Advanced Science, Engineering and Information Technology, 9*(1), 266-273. <https://doi.org/10.18517/ijaseit.9.1.7959>
- Li, M., & Yu, Z. (2022). Teachers' satisfaction, role, and digital literacy during the COVID-19 pandemic. *Sustainability, 14* (3), 1121. <https://doi.org/10.3390/su14031121>
- Liaw, S. S. (2008). Investigating students' perceived satisfaction, behavioural intention, and effectiveness of e-learning: A case study of the Blackboard system. *Computers & education, 51*(2), 864-873. <https://doi.org/10.1016/j.compedu.2007.09.005>
- Lonn, S., & Teasley, S. D. (2009). Saving time or innovating practice: Investigating perceptions and uses of Learning Management Systems. *Computers & education, 53*(3), 686-694.

- Lopes, A. P. (2011). Teaching with Moodle in higher education. *INTED 2011*. <https://doi.org/10.1016/j.compedu.2009.04.008>
- Muhsen, Z. F., Maaita, A., Odah, A., & Nsour, A. (2013). Moodle and e-learning Tools. *International Journal of Modern Education and Computer Science*, 5(6), 1. <https://doi.org/10.5815/ijmecs.2013.06.01>
- Nedeva, V. (2005). The possibilities of e-learning, based on Moodle software platform. *Trakia Journal of Sciences*, 3(7), 12-19. http://tru.uni-sz.bg/tsj/vol3No7_1_files/V.Nedeva.pdf
- Paulsen, M. F. (2003). Experiences with learning management systems in 113 European institutions. *Journal of Educational Technology & Society*, 6(4), 134-148. http://elibrary.lt/resursai/Uzsienio%20leidiniai/IEEE/English/2006/Volume%206/Issue%204/Jets_v6i4_13.pdf
- Rodrigues, S., Rocha, Á., & Abreu, A. (2017). The use of Moodle in higher education evolution of teacher's practices over time. In *2017 12th Iberian Conference on Information Systems and Technologies (CISTI)* (pp. 1-4). IEEE. <https://doi.org/10.23919/cisti.2017.7975702>
- Röbbling, G., McNally, M., Crescenzi, P., Radenski, A., Ihantola, P., & Sánchez-Torrubia, M. G. (2010). Adapting Moodle to better support CS education. In *Proceedings of the 2010 ITiCSE working group reports* (pp. 15-27). <https://doi.org/10.1145/1971681.1971684>
- Sife, A., Lwoga, E., & Sanga, C. (2007). New technologies for teaching and learning: Challenges for higher learning institutions in developing countries. *International journal of education and development using ICT*, 3(2), 57-67. <https://www.learntechlib.org/p/42360/>
- Ubachs, G., Konings, L., & Brown, M. (2017). The envisioning report for empowering universities. *Maastricht, NL: EADTU*.
- Umek, L., Keržič, D., Aristovnik, A., & Tomažević, N. (2015). Analysis of selected aspects of students' performance and satisfaction in a Moodle-based e-learning system environment. *Eurasia Journal of Mathematics, Science and Technology Education*, 11(6), 1495-1505. <https://doi.org/10.12973/eurasia.2015.1408a>
- Vaganova, O. I., Smirnova, Z. V., Vezetiu, E. V., Kutepov, M. M., & Chelnokova, E. A. (2020). Assessment tools in e-learning Moodle. *International Journal of Advanced Trends in Computer Science and Engineering*, 9. <https://doi.org/10.30534/ijatcse/2020/01932020>
- Watson, W., & Watson, S. L. (2007). An argument for clarity: What are learning management systems, what are they not, and what should they become. <https://doi.org/10.1007/s11528-007-0023-y>
- Wilson, B. G., Ludwig-Hardman, S., Thornam, C. L., & Dunlap, J. C. (2004). Bounded community: Designing and facilitating learning communities in formal courses. *International Review of Research in Open and Distributed Learning*, 5(3), 1-22. <https://doi.org/10.19173/irrodl.v5i3.204>
- Wright, C. R., Lopes, V., Montgomerie, C., Reju, S., & Schmoller, S. (2014). Selecting a learning management system: Advice from an academic perspective. Retrieved November 8th, 2022, from Educause Review: <https://er.educause.edu/articles/2014/4/selecting-a-learning-management-system-advice-from-an-academic-perspective>
- Zelinskiy, S. (2020). Analysis of the possibilities of the MOODLE learning management system for organization of distance learning in the conditions of the university. *ScienceRise: Pedagogical Education*, 5(38), 33-36. <https://doi.org/10.15587/2519-4984.2020.213100>

Funkcionalnost platforme Loomen: percepcije i iskustva odgojno-obrazovnih djelatnika u RH

Sažetak: Razni faktori promjena u društvu i napretka u tehnologiji imaju utjecaja na način na koji se edukacijski sustavi osnivaju, mijenjaju i provode. Pojava i porast u popularnosti korištenja sustava za upravljanje učenjem (LMS) predstavljanju značajan primjer suočavanja edukatora s izazovima promjene i napretka. Ovo istraživanje usmjereno je na Loomen LMS, e-sustav otvorenog koda za učenje, u kojem odgojno-obrazovni djelatnici, zajedno s učenicima, kreiraju i upravljaju raznim strategijama, metodama i alatima kako bi optimizirali edukacijski proces. Cilj istraživanja je ispitati funkcionalnost navedene platforme kroz analizu percepcija, mišljenja, impresija, opservacija i iskustava hrvatskih edukatora koji su koristili sustav otkako je uveden u javne škole. U istraživanju je sudjelovao 181 odgojno-obrazovni djelatnik s osnovne i srednjoškolske razine obrazovanja iz 21 županije u RH. Podaci su prikupljeni kroz validiran upitnik u digitalnom obliku. Rezultati su pokazali kako se platforma Loomen najrjeđe koristi upravo za one aspekte za koje je primarno i dizajnirana; da postoji značajna razlika u korištenju platforme između dviju razina školovanja; te da frekvencija upotrebe platforme nije asimetrično proporcionalna s duljinom staža edukatora. Podaci iz ove studije predstavljaju nove akademske dokaze o platformi Loomen i potrebu da se platforma unaprijedi kroz nekolicinu aspekata vezanih za njenu funkcionalnost.

Ključne riječi: edukacijski sustav, e-učenje, Loomen LMS, RH, sustav za upravljanje učenjem