

THE USE OF LEARNING MANAGEMENT SYSTEM (LMS) IN THE TEACHING AND LEARNING PROCESS : LITERATURE REVIEW

^{1*}Irfandi, ²Festiyed, ²Yerimadesi, ¹Teguh Febri Sudarma

^{1,4}Department of Physics Education, Universitas Negeri Medan
Jl. Willem Iskandar Pasar V, Medan estate, Sumatera Utara, 20221, Indonesia

^{2,3}Department of Science Education, Universitas Negeri Padang
Jl. Prof. Dr. Hamka, Air Tawar, Padang 25131, Indonesia

*e-mail: irfandi@unimed.ac.id

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Abstract. Learning Management System or also called LMS as it is also known, can be considered as a type of online content management or online content delivery platform. It is used to deliver training and educational materials to the workforce or external users via the Internet. Based on that, this article aims to identify and analyze publications about online learning or online learning (in networks) with research data taken from journal articles starting in 2018-2022 as many as 124 articles from both national and international journals. The stages of data analysis consisted of searching journals through Google Scholar and also through the Mendeley application, checking the completeness of articles, mapping articles, conducting Literature Review analysis in addition to seeing the mapping and relationships between articles and seeing their distribution with bibliometric analysis with VOSviewer and making conclusions. Research on the development of the Learning Management System (LMS) Publication in 2018-2022 experienced significant developments in 2021 where the Covid pandemic occurred in early 2020 and the use of LMS was mostly dominated by universities or higher levels education. Where the university has preparedness in various aspects including human resources, qualified facilities and technology users are students who understand technology.

Keywords: Covid:19; E-learning; Learning Manajemen System

INTRODUCTION

Education is experiencing a period of outbreak of the Corona Virus Disease 2019 (Covid-19) pandemic which has devastated various sectors of the foundations of human life in the world. Not only in the economic and financial fields, other vital fields also experienced the same thing. It is no doubt that the education sector is also experiencing a transition that is quite sporadic, namely the emergence of an emergency curriculum during the Covid-19 period (Irfandi, Panggabean, et al., 2022). The Ministry of Education and Culture, which is the main stakeholder in the management framework of this nation's education policy, in August 2020 quickly and responsively issued a policy regarding the educational process in this country, starting from basic education to higher education in the form of a program design, namely: "Policy Adjustments Lessons Learned During the COVID-19 Pandemic".

These policies also emphasize the realization of the use of the emergency curriculum. In the first emergency curriculum are: prioritizing the safety and health of educators, students, educational staff, the family environment and the general public environment, which are

a priority part of the implementation of government policies in the world of education (Panggabean et al., 2022). In addition, the next teaching pattern is about student development and in a psychological state, this becomes material for study in establishing a decision that applies nationally in the implementation of learning programs during pandemic conditions that are endemic and changing education patterns (Irfandi, Deo, et al., 2022).

The emergency curriculum is expected to provide convenience in the teaching and learning process during a pandemic. With the learning pattern in the Emergency Curriculum, where the curriculum still refers to the 2013 curriculum that has been implemented (Irfandi et al., 2018), however, the various competencies that will be achieved are developed with the ease that teachers are able to teach so that students can understand them well (Panggabean et al., 2017). a note in the emergency curriculum during the pandemic is the BDR (Learn From Home) learning pattern where students are more emphasized on learning without face-to-face or online. This is of course a problem in itself in evaluating and monitoring the development of students' knowledge in various subjects.

After the development of the emergency education curriculum in Indonesia entered an important milestone where the 2013 curriculum that was implemented experienced a slight shift at several stages. Among them is a curriculum with a new paradigm of learning or often also called a prototype curriculum from an independent curriculum. Where in the independent curriculum it emphasizes learning using technology, so that each education unit is required to carry out information technology (IT) based learning (Ayu Sri Wahyuni, 2022). Where in the teaching and learning process every school must be well-versed in the use of computer-based information technology, so that the educator's job is much easier and helps students understand the learning material being taught. The government also facilitates the implementation of learning by using an independent teaching platform where teachers can share knowledge, teaching materials, and good experiences in the learning being carried out (Fikriyah & Sukmawati, 2022).

Therefore, the high development of the use of the Learning Management System (LMS) in the current era has become a necessity in the world of education to be able to see how far this new round of technology-based education is able to provide effective solutions in learning. A lot of research has been carried out in conducting LMS-based learning in science learning carried out by researchers. Therefore, it is necessary to review through analyzes from these studies both domestically and abroad whether this pattern is able to have an impact on the learning process, and the distribution of research carried out can be applied by education practitioners and by academics. policy makers to be used in decision making in improving the quality of education (Wati et al., 2021).

In addition, researchers also want to see how researchers in various scientific articles place the urgency of their research, what factors are the main variables in every research conducted that influence the results of the research carried out. (Setiawan et al., 2022) So from the process of analyzing the articles carried out, it is obtained how the description of the distribution of these variables influences the use of LMS in the existing science learning process both at elementary schools, junior high schools, senior or vocational schools as well as at the University or Higher Education level.

METHODS

This study uses the literature review method or literature review. Literature review is a description of theories, findings and other research articles obtained from reference materials to be used as the basis for research activities. Literature review can be used to develop a clear frame of mind from the formulation of the problem to be studied. Literature review can also be said as an analysis in the form of criticism of research that is being carried out on specific topics in science, besides that Literature review is an activity that focuses on a specific topic of interest to critically analyze the contents of the text being studied. There are many opinions about how to do a review analysis. There are several views on the technique of conducting a literature review, but in general it can be summarized as follows:

1. Comparison (looking for similarities)

What is meant by comparison is that we are looking for articles that have similarities in their research, both results, interventions, methods or something else. Then the article is criticized and arranged in a table or new article

2. Contrast (looking for dissimilarity)

Review articles can review a conflicting study to then be summarized and made into an article. Then the results of the research that are not the same will be compared which ones can be used in making discussions, including which results are better to be applied as scientific research findings that are better based on evidence

3. Criticize (give views)

A review of an article can also agree or disagree with the views of the author and readers and can also be used as a liaison for more than one view (synthesis), then a synthesis of the criticisms that have been made will be carried out and a discussion will be given that is adjusted to the opinions of the researchers who conducted the review. criticize.

4. Synthesize (compare)

Articles can also be used to find the strengths and weaknesses of a study, then an analysis of the discussion will be carried out and can be used as a basis for further research.

5. Summarize (summarize)

Is the last step in reviewing articles, where we have to write a summary of the results of the review earlier in the form of a new article.

The literature review in this analysis uses literature published in 2018-2022 which can be accessed in full text in pdf format and scholarly (peer reviewed journals) using Google Scholar and also using the Mendeley Desktop application. The journals reviewed are journals that meet the criteria in the form of research journal articles in Indonesian and English with the theme of applying learning using e-learning. A literature search focused on the first keywords "Learning Management System" and "e-learning" found 124 articles indexed on Scopus, Web of Science, and Google Scholar on the topic of Learning Management System in learning, out of 124 articles identification was carried out (deeply analyzing activities). regarding a matter, it is also necessary to select data (screening), and do not forget to also carry out an eligibility test, so that 22 articles are obtained that are in accordance with the objectives of the literature review. And for articles that were tabulated at the beginning of 124 articles indexed in Scopus, Web of Science, and Google Scholar on the topic of Learning Management System (LMS) in learning, bibliometric visualization was carried out. This method aims to provide a structural description of a particular topic (Garfield, 2009; Calik & Sözbilir, 2014). analyzed to see several aspects of the research.

RESULTS AND DISCUSSION

This section describes the findings from the results of the study by conducting searches on various online platforms that have databases of research articles. Until the subject of study was obtained as many as 124 journal articles according to the keywords "Learning Management System " and "e-learning". identification or deeper analysis of a matter or concept is carried out, it is also necessary to select data (screening), and do not forget to also carry out

an eligibility test, so that 22 articles are obtained that are in accordance with the objectives of the literature review. An analysis of 22 articles explaining the practice of

implementing the use of LMS or e-learning in the teaching and learning process is shown in Table 1 below:

Table 1. Analysis of Literature Search Synthesis

No	Researcher & Year	Research Title	Research Methods	Ladder	Jurnal Citations	Measured variables	Research Results
1	Agus Widayoko (2021)	The Use of LMS Schoology in High School Physics Learning Static Fluid Materials During the Covid-19 Pandemic	descriptive with qualitative approach	SMA	S4	Schoologi LMS User Response	The research analysis states that student participation tends to be very good in participation, very low in discussions, and tends to be good in timely collection of assignments. However, through the questionnaire, students responded to learning with LMS Schoology inappropriately. The role of teachers in learning physics is still needed to achieve maximum physics learning effectiveness (Widayoko, 2021).
2	Francom G, et.al (2021)	Comparing Google Classroom and D2L Brightspace Using the Technology Acceptance Model	Descriptive Qualitative	College	Scopus Q1	Comparing Google Classroom and D2L Brightspace	From the conclusion of the article, the findings state that the general preference for Brightspace e-learning when viewed from its productivity, as well as the attitude to the user's personality and naivety in conducting commentar and communication. Comments from participants and educators from both Google classroom LMS platforms were presented in the study. Another finding was found that the two LMS between Brightspace and Google Classroom could provide learning material information. In addition, researchers in final students can develop and consider the use of the LMS.. (Francom et al., 2021)
3	Yenni Surfiyanti Ningrum, et.al (2020)	Correlation of The Implementation of Online Science Learning to Student Technology Literacy in Grade VIII Junior High School	quantitative (survey)	JUNIOR	S4	TECHNOLOGICAL LITERACY	From the conclusions of the article, the relationship between the application in the teaching and learning process in the field of science studies carried out online which is carried out by educators to students to student technological literacy. From the research carried out, it is hoped that new models in learning will emerge that can provide reinforcement to existing theoretical theories.. (Ningrum & Wulandari, 2020)
4	Agnia Nur Fikriyah, et.al (2022)	Development of Moodle-Based Learning Management System	R & D (ADDIE)	SD	S4	LMS Development	From the development research on the learning process that uses online learning using moodle on energy change materials meets

		(LMS) Learning Media on Energy Change Materials					the criteria very feasible for elementary school students to use and can be used as a support for science learning.. (Fikriyah & Sukmawati, 2022)
5	Aulia Sanova (2018)	Learning Management System (LMS) as an Application for Developing Interactive Materials in Environmental Chemistry with Computer Assisted Instruction Method	R & D (Sugiono Modification)	College	S4	LMS User Response	Moodle-based LMS is feasible and effectively applied to Environmental Chemistry lectures. (Sanova, 2018)
6	Dwi Suseno Wati, et.al (2021)	The Effectiveness of The Learning Management System Chamilo Simple Harmonic Motion Material on Student Learning Outcomes	Quantitative pre-experiment	SMA	S4	LEARNING OUTCOMES	The use of LMS Chamilo simple harmonic motion material is effective on student learning outcomes. (Wati et al., 2021)
7	Eko Fery Haryadi Saputro, et.al (2022)	Generic Science Skills of Students in Blended Learning	quantitative descriptive quasi-experimental design	College	Copernicus	Generic Science Skills	The improvement of generic science skills after the application of blended learning is relatively moderate. Thus, blended learning can be used in improving students' generic science skills. (Eko Fery Haryadi Saputro et al., 2022)
8	IULIANA DOROBAT, et.al (2019)	Integrating Student Trust in a Conceptual Model for Assessing Learning Management System Success in Higher Education: An Empirical Analysis	Descriptive Qualitative	College	Scopus Q1	Learning Management System	From the results of the existing research analysis, it was found that the desire and satisfaction felt by students are important to grow and develop so that students' confidence in using the LMS can have a positive impact. Student trust and perceived usefulness are two components that have a high degree of predictability in explaining student loyalty to the LMS. Success in online learning using e-learning can be achieved by students if students are able to provide a sense of confidence when the use of e-learning can be achieved if students are satisfied with the LMS, trust the LMS, and ultimately become users who are always loyal to using e-learning. (Dorobat et al., 2019)
9	Izzah Muyassaroh, et.al (2022)	Efforts to Improve Student Science Literacy Through Blended Collaborative Problem Based Learning Based on Multiple Representatives	Action Research Kemmis & McTaggart	College	S3/WoS	Science literacy skills	The increase in the average results of student science literacy tests in the third becomes an indication of achievement in science literacy, namely by identifying things that develop in the scientific field, in addition to the use of blended learning also explaining scientific cadaver, as well as using scientific evidence. The average results of student observations on these three

						indicators in each cycle. (Muyassaroh et al., 2022)
10	Kwon SKim WBae C et al. (2021)	The identity changes in online learning and teaching: instructors, learners, and learning management systems	Quantitative experiments	College	Scopus Q1	identity change of the three components, instructor, learner, and LMS community in a network and build collaboration between educators and students to transfer information and knowledge between study groups. In order to integrate identity changes into online learning and teaching, we argue that LMSs should be designed and managed as learning communities; both lecturers and students must collaborate in the learning process in one community. (Kwon et al., 2021)
11	Lidya Banilaa, et.al (2021)	Application of blended learning with a STEM approach to improve students' science literacy skills in biology learning during the COVID-19 pandemic	Quantitative Pre-Experiment	SMA	S5	Science literacy skills Students' science literacy skills from the application of blended learning models with a STEM approach have an average score of 85.50 with good categories. In order for students to have a better understanding of science literacy, students' understanding of science must be continuously trained through blended learning models with a STEM approach. (Banila et al., 2021)
12	Marini Amalia Ocvianti, et.al (2021)	Virtual Laboratory-Based Learning Through Google Classroom on Ohm's Law Materials To Improve Critical Thinking Skills	qualitative questionnaire	SMA	S4	Critical thinking skills Learning using a virtual laboratory on Ohm's Law material conducted through Google Classroom helps students to practice critical thinking skills, namely through the planning process of retrieval, retrieval, and processing data which is carried out in discussions in their groups. (Ocvianti & Sulisworo, 2021)
13	MJA Rahman, et.all (2019)	Learning Management System (LMS) in Teaching and Learning	Descriptive Qualitative	College	Copernicus	identifying knowledge and benefits of using an LMS From the results of the research, it was found that students in universities have a very good understanding of the use of LMS and they have a foresight of the use of technology from the results of research conducted so that universities provide facilities for students to be able to access LMS by using features that make it easier to do face-to-face online and LMS can be used

							with User Friendly. (Rahman et al., 2019)
14	Muhammad Shazali et.al (2022)	PGSD Student Learning Activities: A Portrait of Students' Ability To Apply Products, Attitudes And Skills of The Science Process During A Pandemic	Descriptive Qualitative	College	S5	APPLYING PRODUCT PRODUCTS, ATTITUDES AND PROCESS SCIENCE SKILLS	Students' ability to apply product aspects, attitudes and science process skills are good. (Syazali & Umar, 2022a)
15	Muhammad Syazali et.al (2022)	Distance Learning Notes: Science Learning Outcomes and Their Learning In Elementary School Teacher Education Students	Descriptive Qualitative	College	Copernicus	Learning outcomes	Most students have mastered the concept of science and can teach it to students in elementary school. (Syazali & Umar, 2022b)
16	Ni Luh Putu Ananda Saraswati, et.al (2020)	Chemistry Practicum Learning During the Covid-19 Pandemic: Qualitative Content Analysis of The Tendency to Use Online Technology	Qualitative	College	S4	UTILIZATION OF ONLINE TECHNOLOGY	The most effective online media used are google classroom, whatsapp, and meetgoogle with learning methods in the form of discussions and observations. From the results of the comprehensive research, there was no noticeable difference between the learning outcomes carried out offline and online in the praktikum course. (Saraswati & Mertayasa, 2020)
17	Noor Laily Akhmalia, et.al (2018)	Effectiveness of LMS-Based Blended Learning with Inquiry Learning Model on Static Fluid Material on Student Concept Mastery	Quantitative Experiments	SMA	S3	Student Concept Mastery	blended learningbased on LMSwith inquiry learning models has a significant influence on students' mastery of concepts
18	Novalina Setyaningrum, et.al (2021)	Analysis of Students' Self-Regulation Ability in Science Learning during Online PJJ in the Era of the Covid-19 Pandemic	Descriptive Qualitative	SMA	S3	Students' Self-Regulation Ability	Most students have a moderate level of self-regulation ability in the moderate category. (Akhmalia et al., 2018)
19	Novika Lestari Handayani, et.al (2021)	Utilizing Google Classroom in Remote Physics Science Learning to Improve Students' Communication Skills	Descriptive Qualitative	JUNIOR	S3	Communication skills	In this article, it is explained that the application of LMS google classroom in the field of Natural Sciences studies, remotely on the material Simple Aircraft Type Lever class VIII junior high school has been effective which is stated by the active participation of students and states that they are quite satisfied. (Handayani et al., 2021)
20	Rusdi Rusdi et.al (2022)	Learning the Circulatory System Through the Learning Management System-Moodle: How is the Development of Teaching Materials Oriented Towards Scientific Literacy?	R & D (4D)	JUNIOR	S4	Development of Teaching Materials with LMS	From the research carried out on the development of learning materials for moodle-based LMS-based circulation system materials oriented towards increasing science literacy, it is stated that it is very valid. (Rusdi et al., 2022)

21	Surendran Sankaran (2021)	LMS Design and Blended Learning-Based Learning Management among Master of Education Students	Descriptive qualitative and inference.	College	Copernicus	LMS User Response	The design of teaching in a continuous manner needs to emphasize the factors of implementing the LMS form in order to provide optimal learning outcomes with Blended Learning learning patterns in prospective educators or education graduates. (Sankaran & Saad, 2021)
22	Zainudin, et. Al (2021)	The Effectiveness of Hybrid Learning During the Covid-19 Pandemic in Low Grade Elementary School Science Courses	Quantitative pre-experiment	College	Copernicus	Science process skills	The skills of the scientific process have improved significantly, namely the indicator criteria for formulating moderate problems. (Zainudin* et al., 2021)

From the data contained above, it can be seen that the use of a Learning Management System (LMS) or better known as e-learning, became a prima donna when it was determined by the Covid-19 Pandemic by World Health Organization (WHO). This is also in line with regulations in Indonesia where at the beginning of 2020 the Pandemic evenly spread in the world. So that the government issued an emergency curriculum that faithfully Educational Institutions are required to carry out distance learning or online learning.

This triggers the use of LMS or e-Learning so very much loved and becomes an alternative learning that is very possible to ensure the learning process runs without having to be synchronous. So, if we look at the existing data, research on e-learning was widely carried out in 2021, almost 54.6% of the research analyzed that year. While in 2022 it occupies the 2nd place, namely as many as 5 studies analyzed with a percentage of 22.7% while in 2020 and 2018 each has 2 journals or 9.1% and 2018 have a fairly rare study, which is only 4.5% because in 2018 there has been no Covid, but learning to use LMS has begun to be known by community. Likewise, from the data obtained in terms of the level of education level that is used as the object of research, hamper higher education institutions dominate by 54.6%. why universities rank highest is because the use of e-learning in universities is a necessity due to all capacities and the capabilities of universities are quite qualified to carry out online learning.

Both in terms of human resources, facilities, expert resources and individual student abilities. In addition, blended learning has also been carried out before the pandemic hit Indonesia and in the world. This corresponds to research carried out at the university level on research (Iuliana Dorobăț, et.al. 2019) which reveals that student satisfaction is the main thing to do to develop student trust in LMS. From the results of the existing research analysis, it was found that the desire and satisfaction felt by students are important to grow and develop so that students' confidence in using the LMS can have a positive impact. Student trust and perceived usefulness are two components that have a high degree of predictability in explaining student loyalty to the LMS. Success in online learning using e-learning can be achieved by students if students are able to provide a sense of confidence when the use of e-learning can be achieved if students are satisfied with the LMS, trust

the LMS, and ultimately become users who are always loyal to using e-learning. The results of this research cannot be underestimated because in implementing learning using LMS, it was found that blended learning produces more optimal learning. So, in higher education, the level of trust and efficiency is an important thing in the use of LMS.

For the level of education at the upper level or high school ranks second with 27.3% where equivalent high schools are also aggressively carrying out learning with LMS, as well as the first advanced level or junior high school at 13.6% and the smallest score is occupied by the lowest level of basic education, namely elementary school with a percentage of 4.5%. For the elementary school level, the use of LMS is rarely used during the pandemic, elementary schools only use social media in the teaching and learning process.

VOSviewer-Assisted LMS and e- Learning Research Trend Visualization

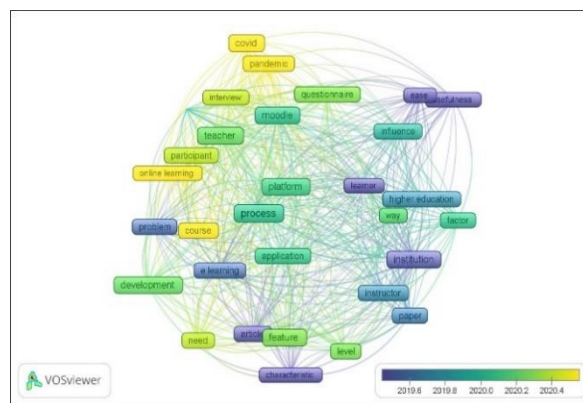


Figure 1. VOSviewer Visualization Map of the development of Learning Mamangement System (LMS) Publications in 2018-2022

This study uses a deductive technique, which starts from mapping and finding general aspects first and then to specific aspects. This study only analyzed the emergence of keywords and their relation to LMS and e-learning, many covid pandemic also appeared which could indirectly be attributed to the use of online learning at that time. This deductive technique is described by (Colin. et. al. 2019) and (Ersozlu, 2019), the reader can understand the findings and new information provided when presented ranging from the general to the specific information

From the visualization results (Figure.1) based on the emergence of keywords related to LMS or e-learning that are directly related to the field of Education presented in the figure above. We can see that there are several dominant words in the search process. The dominant colors include: Yellow, green, and blue. If we look at the dominant color yellow, there are the words Online Learning, Course, covid, pandemic, participant. From these words we see that LMS is closely related to online learning and the teaching and learning process during covid. So, the LMS is so familiar and very closely related to the covid pandemic.

Furthermore, if we look at the green words, namely Moodle, Platform. Application, teacher. So, if we see that the green color is more clustered in the form of LMS technology, namely the LMS application that is used by many Moodle-based, because with Moodle the entire teaching and learning process can be carried out, starting from the process, evaluation and conducting a virtual practicum. The opposite is related to the learning taught by teachers in schools.

The next color that appears is the color of the Violet where there are key words that appear, including: Learner, learning, problem, article, characteristics and usefulness. When examined from the existing words, it can be seen that this group is deeper than the learning process with the use of LMS, where e-Learning is a smart solution in the learning process so that students and educators do not meet directly in the teaching and learning process. And the last one is a keyword that is included in the blue group where in this group it specializes more about higher education, instructors and paper.

From this we can see that LMS is closely related to universities where a lot of research is carried out by involving students at universities, as well as LMS users in Education are also dominated by students at universities although there are Some that are used at the upper and secondary levels.

Selected	Term	Occurrences	Relevance
<input checked="" type="checkbox"/>	institution	25	0.95
<input checked="" type="checkbox"/>	problem	15	0.95
<input checked="" type="checkbox"/>	paper	18	0.94
<input checked="" type="checkbox"/>	interview	13	0.89
<input checked="" type="checkbox"/>	online learning	10	0.86
<input checked="" type="checkbox"/>	level	16	0.84
<input checked="" type="checkbox"/>	learning management systems	12	0.82
<input checked="" type="checkbox"/>	higher education	20	0.80
<input checked="" type="checkbox"/>	application	18	0.77
<input checked="" type="checkbox"/>	effectiveness	12	0.74
<input checked="" type="checkbox"/>	feature	23	0.73
<input checked="" type="checkbox"/>	learner	11	0.70
<input checked="" type="checkbox"/>	teacher	24	0.64
<input checked="" type="checkbox"/>	e learning	20	0.64
<input checked="" type="checkbox"/>	moodle	25	0.57
<input checked="" type="checkbox"/>	participant	16	0.55
<input checked="" type="checkbox"/>	article	16	0.50
<input checked="" type="checkbox"/>	questionnaire	19	0.48
<input checked="" type="checkbox"/>	course	16	0.47
<input checked="" type="checkbox"/>	platform	23	0.38
<input checked="" type="checkbox"/>	process	35	0.26

Figure 3. Tabulation of the distribution of the development of Learning Management System (LMS) Publications in 2018-2022

The picture shows publications about Covid related to the learning process are more dominant and other keywords related to e-learning are shown with denser circles such as Process, covid, institution, Moodle, assessment, computer science, higher education, creativity, and others. The appearance of fewer keywords such as beginner teachers and online learning.

Further for the visualization of articles per year is presented on the overlay visualization image. Based on the image, it can be seen that the publication of the Learning Management System (LMS). The year 2020 shows the appearance of few keywords so that there is an opportunity for publications related to these keywords

CONCLUSION

The results of the review and review of research articles on the development of LMS publications Publications in 2018-2022 experienced significant developments in 2021 where there was a Covid pandemic in early 2020 and the use of LMS is dominated by higher education or higher education. Diman University has readiness in various aspects including human resources, qualified facilities and technology users who understand technology.

As well as the number of practitioners in universities. The processes associated with programming, online learning and e-Learning are more dominant compared to other keywords. The publication of LMS (Learning Management System) in science education as many as 22 articles from all articles studied, this topic is related to learning during the Pandemic. LMS publications that are associated with many universities with preservice teachers and self-efficacy have not been widely circulated at the middle and high school levels so it is very likely for researchers to study this topic more deeply.

Selected	Term	Occurrences	Relevance
<input checked="" type="checkbox"/>	usefulness	10	3.24
<input checked="" type="checkbox"/>	ease	13	2.16
<input checked="" type="checkbox"/>	covid	28	2.02
<input checked="" type="checkbox"/>	factor	22	1.64
<input checked="" type="checkbox"/>	pandemic	19	1.63
<input checked="" type="checkbox"/>	development	25	1.35
<input checked="" type="checkbox"/>	characteristic	14	1.32
<input checked="" type="checkbox"/>	need	19	1.10
<input checked="" type="checkbox"/>	instructor	19	1.05
<input checked="" type="checkbox"/>	way	13	1.04
<input checked="" type="checkbox"/>	influence	17	0.96
<input checked="" type="checkbox"/>	institution	25	0.95
<input checked="" type="checkbox"/>	problem	15	0.95
<input checked="" type="checkbox"/>	paper	18	0.94
<input checked="" type="checkbox"/>	interview	13	0.89
<input checked="" type="checkbox"/>	online learning	10	0.86
<input checked="" type="checkbox"/>	level	16	0.84
<input checked="" type="checkbox"/>	learning management systems	12	0.82
<input checked="" type="checkbox"/>	higher education	20	0.80
<input checked="" type="checkbox"/>	application	18	0.77
<input checked="" type="checkbox"/>	effectiveness	12	0.74

Figure 2. Tabulation of the distribution of the

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