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A Study on the Usage of Learning Management Systems in Higher Education

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ABSTRACT

This research aimed to determine the extent to which the learning management system helps in online teaching and learning activities makes learning administration and management more accessible, and makes learning activities more effective. The research used primary data from a survey from universities in West Jakarta that 69% of most respondents used a learning management system, whether they are using the existing learning management or building their own, and 44% are using Moodle application as their learning management system media. Student readiness was 69%, meaning that most were familiar with using media devices in online learning, and 92% of teaching staff, both lecturers/mentors and instructors, have experience using and evaluating online learning. Universities in West Jakarta have used learning management systems to assist the process of learning activities so that they can be used as a reference for developing online learning models.
Keywords: *device, e-learning, learning management system, moodle.*

INTISARI

Penelitian ini bertujuan untuk mengetahui sejauh mana learning management system membantu dalam proses kegiatan belajar mengajar secara online atau daring, mempermudah dalam administrasi dan manajemen pembelajaran serta mengefektifkan kegiatan pembelajaran. Penelitian menggunakan data primer hasil survei dari perguruan tinggi di Jakarta Barat bahwa 69% mayoritas responden sudah menggunakan learning management system baik itu dengan menggunakan learning management yang sudah ada maupun membangun sendiri dan 44% menggunakan aplikasi Moodle sebagai media learning management systemnya. Kesiapan mahasiswa sebesar 69% artinya sebagian besar sudah terbiasa menggunakan media device dalam pembelajaran daring dan 92% tenaga pengajar baik dosen/mentor maupun instruktur mempunyai pengalaman dalam menggunakan dan mengevaluasi pembelajaran secara online. Perguruan tinggi di Jakarta Barat sudah menggunakan learning management system dalam membantu proses kegiatan pembelajaran sehingga dapat dijadikan acuan untuk pengembangan model pembelajaran secara daring atau online.
Kata kunci: *device, e-learning, learning management system, moodle.*

INTRODUCTION

The development of information technology has penetrated various fields, including the world of education, one of which is the emergence of e-learning (Saintika et al., 2021; Al-Fraihat et al., 2020). In recent years, learning management systems (LMS) have played a fundamental role in higher education teaching models (Cantabella et al., 2019; Mariani et al., 2022). The LMS is designed for students, so they have lots of time to study and parents who will help them learn (Intal et al., 2023). Blended learning can be chosen by combining online teaching with classroom teaching to overcome the weaknesses and threats of online teaching and take advantage of its strengths and opportunities (Gupta & Sharma, 2020). As an LMS, Canvas has video conferencing, online sessions, and online-based assessments in a strategically organized way (Owolabi & Bekele, 2021). The successful implementation and use of an LMS have become a critical challenge for many higher education institutions during the COVID-19 pandemic (Mohammadi et al., 2021). Students' desire to use the LMS has had a beneficial effect during the pandemic (Alturki & Aldraiweesh, 2021; Al-Qora'n et al., 2022).

Utilizing Moodle as an LMS for each assessment of students' knowledge improves the quality of the learning process (Usov et al., 2020). Microsoft Teams and Zoom help students access information and learning resources and positively impact knowledge construction (Sobaih et al., 2021).

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A solid global trend exists to utilize LMS in academic institutions as part of their education management system to improve higher education's teaching and learning experience. LMS strengthens the learning process through an online classroom environment. In current developments, students depend on digital content or ICT (Rabiman et al., 2020). In the future, the concept of e-learning, prioritizing quality models, must address different technical aspects of the e-learning system that can guarantee the continuous development of the system due to rapid changes in information and communication technology (Nikolić et al., 2018).

This research aimed to determine how many educational institutions have used an LMS as an alternative learning method and the readiness of students and lecturers or teaching staff to use media devices in online learning. The results of this research were expected to reveal the development of the LMS used in universities to enter the 5.0 revolution.

METHODOLOGY

This research used quantitative methods with primary observation data, probability sampling, and descriptive analysis. Simple statistics were used to analyze data collected and then processed into information.

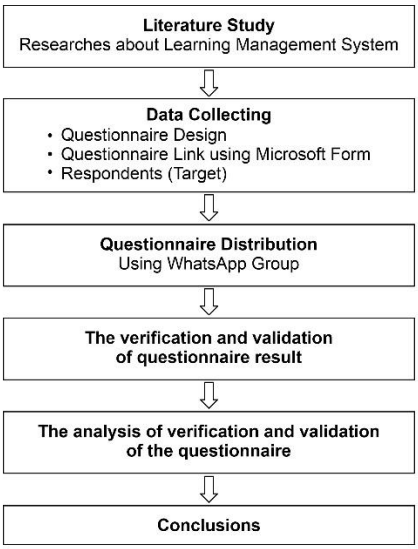

Figure 1. Research Methodology

Research Questions

1. R1: What are students' skills in using media devices in online learning?
2. R2: What are the lecturer's skills using the LMS in the lecture process?
3. R3: What is the aim of universities in using LMS?

An electronic form was prepared to obtain data from the public through respondents. The electronic form technology used in this research is Microsoft Form with the link because this platform is currently subscribed to and used by the researchers. Apart from that, this platform can also accommodate ongoing research needs.

The instrument on this electronic form was then discussed internally to obtain a straightforward, concise, easy-to-understand order of questions that respondents could fill out easily from their desktop computers, laptops, or mobile phones in responsive mode.

The questionnaire's list of questions designed at this stage was organized into three groups, i.e., university origin, users, and their knowledge of the goals and benefits of the LMS. The following questionnaire questions have been created:

I. Origin of University: [fill in]
II. User: (Presented on a Likert scale: All [5], Most [4], Half [3], Somewhat [2], None [1])
    1. How many lecturers experienced in managing and evaluating online-based learning?
    2. Are there lecturers/mentors/instructors/models in online learning at your institution?
    3. Are most students at your institution able to use various online learning media?
    4. Are most lecturers at your institution able to use various online learning media?

5. Are the menus/features offered by professional e-learning service providers from outside the institution adequate for implementing e-learning at your institution?

III. Benefits/Objectives and Types of Learning Management Systems

1. Does your institution already use a learning management system? [Yes/No]
2. What learning management system (LMS) is used? [Moodle/canvas/Google Classroom/others (can be filled in according to what is used by the college)]
3. What are the aims and benefits of using a higher education learning management system? [fill in]

The survey form was distributed through an instant messaging platform (WhatsApp) using individual and group features available (Wulandari, Dewi ; Wandy, 2023). This form's distribution period lasts one month, in February 2023. The target respondents are private universities located in West Jakarta.

RESULT AND DISCUSSION

In this section, we discussed the results of a survey conducted for one month in February 2023. Of the target private universities located in West Jakarta, i.e., 30 universities, 17 respondents filled in, but out of the 17 respondents who filled in, only 13 gave complete and valid data. So, we decided to analyze those valid data (13 respondents), where the respondents filled in all the questions correctly.

Here, we will discuss one by one based on the survey results we received. The first question concerns the number of experienced lecturers managing and evaluating online-based learning. The survey results are shown as a pie graph, which can be seen in Figure 2. Here it can be seen that 92% of lecturers have experience in managing and evaluating online-based learning, with a composition of 54% answered that most lecturers were experienced and 38% answered that all lecturers were experienced.

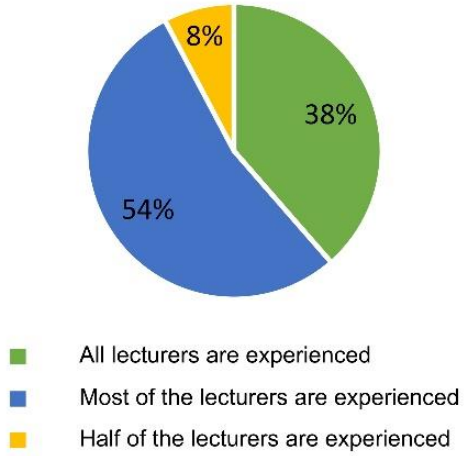

Figure 2. Respondents' answers based on lecturers' skills and experience.

The following survey results are regarding the existence of a lecturer/mentor/instructor/ model in online learning—the survey results were presented as a bar chart, as shown in Figure 3. In the diagram, there were 7 respondents chose the answer that most of the lecturers were mentors, 5 respondents chose the answer that all lecturers were mentors, and 1 respondent chose the answer that there were no lecturers who were mentors.

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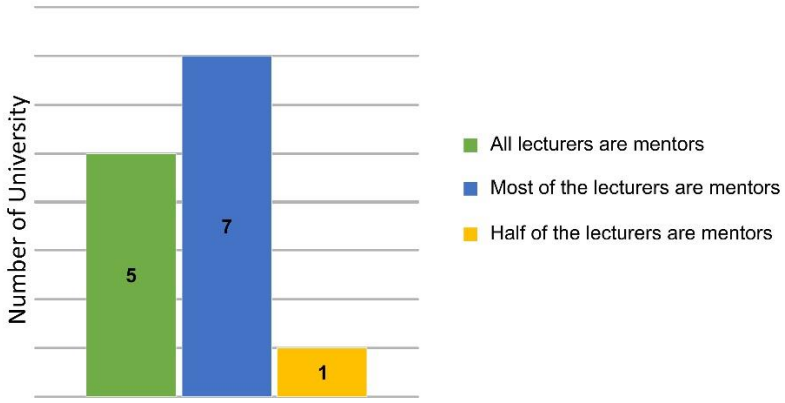

Figure 3. Respondents' answers based on lecturer's function and duty

In graph no.4 it can be seen that students' ability to use various types of media during online lectures was very good, and this can be seen from the results of the questionnaire, i.e., more than 69% or close to 70% chose the answer that most of the students were able to use various online learning media, this has been done in previous research which stated that 70% of respondents were ready to choose online classes (Muthuprasad et al., 2021).

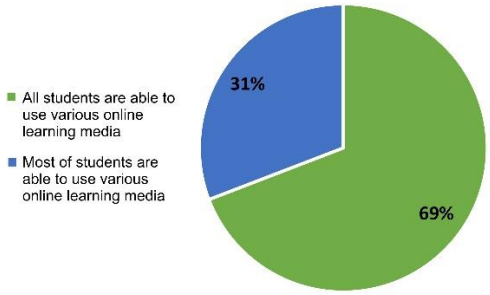

Figure 4. Respondent's answers based on students' ability to use device(s)

The following survey results show lecturers' ability to use various online learning media. The survey results can conclude that almost 100% of lecturers can use various online learning media; this can be seen in Figure 5, which explains the composition of respondents who chose the answer for all lecturers: 54%, 38% chose the answer for most lecturers, and 8% chose the answer for half of the lecturers at each university.

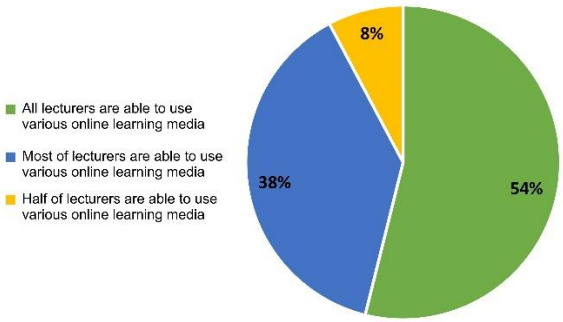

Figure 5. Respondent's answer based on lecturers' ability to use device(s)

Figure 6 shows the results of questions regarding universities that have used LMS at their institutions. Based on the survey results, it turns out that of the 13 respondents, 9 or 69%, whose campus uses the LMS. In comparison, 4 respondents or 31%, have not used the LMS in online learning.

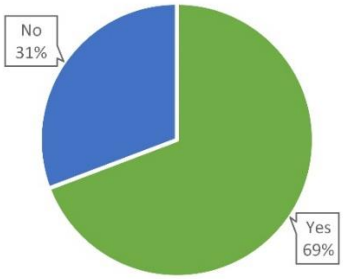

Figure 6. Respondent's answer based on the LMS usage.

The following survey results regarding the type of LMS chosen or used by universities were depicted as a bar chart in Figure 7. The survey results show that most respondents use Moodle to learn online, followed by those who use Canvas and Google Classroom. Meanwhile, 2 respondents chose the other answer, meaning they used an LMS created by their campus.

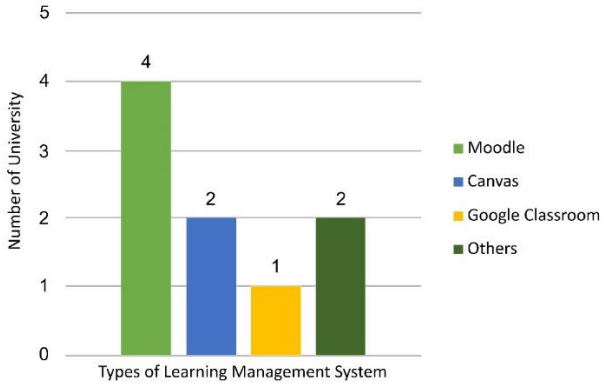

Figure 7. Respondent's answer based on the type of LMS

In Figure 8, presented as a pie graph, are the survey results related to using features or menus in the LMS, whether using existing LMS platforms or those created by universities. In Figure A, 71% of respondents stated that all existing features were adequate, and 29% stated that most were adequate. Meanwhile, in Figure B, of the 2 respondents who created their LMS, one stated that all the features created were adequate, and the other stated that most were adequate.

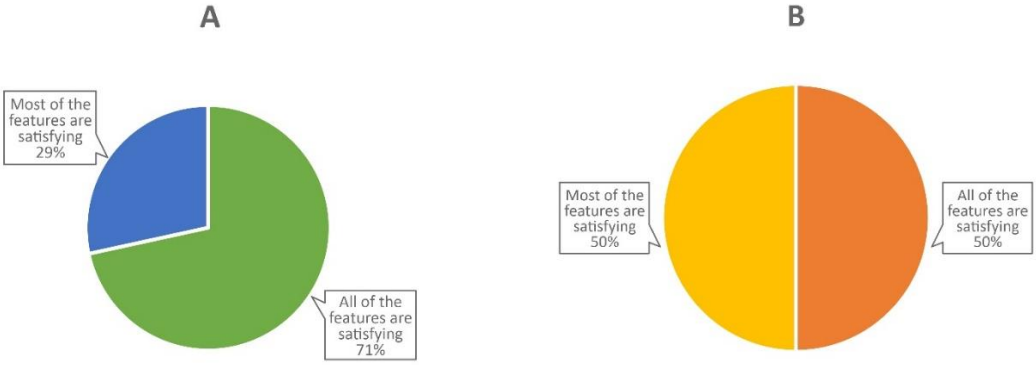

Figure 8. Respondents' answers based on the LMS features.

In this survey, researchers also received feedback regarding the benefits and objectives of using the learning management system in higher education, including the following:

1. Makes administration easier.
2. Technology-based learning makes things easier for lecturers.
3. Makes the online learning process easier.
4. Only to deliver learning delivery to students during the pandemic because they cannot attend face-to-face.

5. For learning and all information for students.
6. Make learning effective.
7. Make it easier for learning and teaching activities in campus.

CONCLUSIONS

This research found that 69% of most respondents had used a learning management system, either by using existing learning management or building their own. Moreover, 44% use the Moodle application as their LMS media. Student readiness was 69%, most of whom were used to using media devices in online learning, and 92% of teaching staff, both lecturers/mentors and instructors, have experience using and evaluating online learning. The aim of higher education institutions in using a learning management system is that, based on the survey results, it can be concluded that the LMS helps in the process of online teaching activities, makes learning administration and management more accessible, and makes learning activities more effective. So, it can be concluded that the results of this research are that universities, especially those in West Jakarta, have used a learning management system to assist the process of learning activities. This can be seen from the ability of users, namely students and teaching staff (lecturers) to use various online learning media. The research results were expected to be a reference in developing LMS models in online learning.

REFERENCES

Al-Fraihat, D., Joy, M., Masa'deh, R., & Sinclair, J. (2020). Evaluating E-learning systems success: An empirical study. In *Computers in Human Behavior* (Vol. 102, pp. 67–86). https://doi.org/10.1016/j.chb.2019.08.004

Al-Qora'n, L., Salem, O. A. S., & Gordon, N. (2022). Heuristic Evaluation of Microsoft Teams as an Online Teaching Platform: An Educators' Perspective. *Computers*, *11*(12). https://doi.org/10.3390/computers11120175

Alturki, U., & Aldraiweesh, A. (2021). Application of learning management system (Lms) during the covid-19 pandemic: A sustainable acceptance model of the expansion technology approach. *Sustainability (Switzerland)*, *13*(19). https://doi.org/10.3390/su131910991

Cantabella, M., Martínez-España, R., Ayuso, B., Yáñez, J. A., & Muñoz, A. (2019). Analysis of student behavior in learning management systems through a Big Data framework. *Future Generation Computer Systems*, *90*, 262–272. https://doi.org/10.1016/j.future.2018.08.003

Gupta, R. M., & Sharma, P. (2020). SWOT Analysis of Online Teaching During Lock Down : Blended Teaching the Way Forward. In *Indian Journal of Extension Education* (Vol. 56, Issue October, pp. 19–25).

Intal, G. L., Gonzales, A. L. S., Pono, L. A. R., & Pastrana, J. R. M. (2023). A Study on the Assessment of the Proposed Alitaptap Learning Management System Using SWOT Analysis. In *International Journal of Information and Education Technology* (Vol. 13, Issue 5, pp. 801–805). https://doi.org/10.18178/ijiet.2023.13.5.1870

Mariani, A. S., Widodo, J., Handayani, S. S. D., & Rodiyah. (2022). Evaluating the Online Learning System in Accounting Major Using SWOT Analysis. In *Journal of Educational and Social Research* (Vol. 12, Issue 6, pp. 206–217). https://doi.org/10.36941/jesr-2022-0156

Mohammadi, M. K., Mohibbi, A. A., & Hedayati, M. H. (2021). Investigating the challenges and factors influencing the use of the learning management system during the Covid-19 pandemic in Afghanistan. In *Education and Information Technologies* (Vol. 26, Issue 5). Springer US. https://doi.org/10.1007/s10639-021-10517-z

Nikolić, V., Kaljevic, J., Jović, S., Petković, D., Milovančević, M., Dimitrov, L., & Dachkinov, P. (2018). Survey of quality models of e-learning systems. *Physica A: Statistical Mechanics and Its Applications*, *511*, 324–330. https://doi.org/10.1016/j.physa.2018.07.058

Owolabi, J., & Bekele, A. (2021). Implementation of innovative educational technologies in teaching of anatomy and basic medical sciences during the covid-19 pandemic in a developing country: The covid-19 silver lining? In *Advances in Medical Education and Practice* (Vol. 12, pp. 619–625). https://doi.org/10.2147/AMEP.S295239

Rabiman, R., Nurtanto, M., & Kholifah, N. (2020). Design and development E-learning system by learning management system (Lms) in vocational education. In *International Journal of Scientific and Technology Research* (Vol. 9, Issue 1, pp. 1059–1063).

Saintika, Y., Astiti, S., Kusuma, D. J. A., & Muhammad, A. W. (2021). Analysis of E-learning readiness level of public and private universities in central Java, Indonesia. In *Register: Jurnal Ilmiah Teknologi Sistem Informasi* (Vol. 7, Issue 1, pp. 15–30).

https://doi.org/10.26594/register.v7i1.2042
Sobaih, A. E. E., Salem, A. E., Hasanein, A. M., & Abu Elnasr, A. E. (2021). Responses to covid-19 in higher education: Students' learning experience using microsoft teams versus social network sites. *Sustainability (Switzerland)*, *13*(18). https://doi.org/10.3390/su131810036
Usov, S., Safonov, M., Akbilek, E., & Sorokona, L. (2020). SWOT analysis of moodle platform application in the assessment of foreign language knowledge. In *ACM International Conference Proceeding Series* (pp. 31–34). https://doi.org/10.1145/3416797.3416835
Wulandari, Dewi ; Wandy, W. (2023). *Analisa Sosialisasi Netiket Dalam berkomunikasi di Aplikasi Pesan Instan dan Media Sosial.pdf* (p. 14).