Research article

Secondary Students' Perceptions on Learning Management System in the Midst of Covid-19 Pandemic

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Abstract.
The breakthrough of using Learning Management System (LMS) is urgently required nowadays midst pandemic era to boost the outcome of teaching learning. Such facts proved that the provided LMS are felt to be difficult and complicated that students are discouraged to operate them. Therefore, this paper aimed at exploring students' perceptions about the implementation of LMS used. It was sequential explanatory mixed-method research design involved 48 students from various secondary schools in Semarang as the samples. The questionnaire distributed using Google Form was then analyzed to identify their perceptions about LMS quantitatively and qualitatively. The result shows that the highest need was about the need of platform which covers a synchronous learning process (63%) and interaction between students and students, both in small groups and large groups (60%), also platform that has been equipped with facilities/menus that accommodate students in order to improve their critical thinking habits (54%). As solution, they need platform which has more interesting menu options so as to make students not to be bored in the learning process (54%), they also need simple platforms covering synchronous and asynchronous activities (54%). They even need platform which has menus where teachers can give feedback or correction on students' work independently both in small and large groups. Therefore, the findings of this study incite the researchers to design a Hybrid Smart Learning System in order to fulfil the students' need and build students' metacognition.

Keywords: Students' perceptions, LMS, secondary schools, covid-19 pandemic

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1. Introduction

Covid-19 has spread worldwide rapidly and Indonesia has been greatly affected that forces people to adapt to the current situation. In the education sector, for example, students are forced to do their learning activities at homes through online learning with the so-called Learning Management System (LMS) so as not to create crowd among students that can spread the decease.

LMS is the framework that conveys and oversees instructional content, recognizes and evaluates individual and organizational learning or preparing objectives, tracks the progress towards meeting those objectives, and gathers and presents information for managing the learning process of organization overall Szabo & Flesher in a journal by

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[1]. It can facilitate the instructors, the learners, and also the administrators, so that they are easy to utilize and get to the service and it is past the limitation of your time and place in the teaching and learning process Ellis cited by [2].

However, online learning leads to some disadvantages in Indonesia, particularly *Kota Semarang* where it does not seem to be easy to create or to operate it. The result of our pre-observation showed that only 2 out of 10 schools have utilized LMS such as Zoom, Google Meet, and Microsoft Teams. Such facts prove that the fulfilment of the students and teachers need to have practical and easy LMS is hard and complicated that teachers and students are discouraged to operate them which lead to frustration and confusion.

This is the reason why this present paper aimed at exploring students' perceptions on the implementation of LMS used in particular something dealing with the handicaps and solutions where the findings would be helpful in designing Smart Learning System to build students' metacognition.

2. Review of Literature

2.1. Learning Management System (LMS)

An application that computerizes the administration, documentation, tracking, reporting of learning programs is called LMS (Learning Management System) Ellis cited by [2]. An online portal that interfaces lecturers and students within the higher institutions community is commonly known as LMS or Learning Management System. It gives a chance for classroom materials or activities that easy to share, it is also allows lecturers and students to connected out of the classroom, and having discussions through forums that could be spending too much time that should be spent learning in classroom[3]. There are common characteristics for an LMS in education: (a). guidelines objectives are tied to individual lessons, (b). lessons are included into the standardized curriculum, (c). courseware extends several grade levels in a consistent manner, (d). a management framework collects results of student performance, and (e). lessons are given based on the individual student's learning advance [1].

2.2. Challenges of LMS Adoption

In using LMS, previous researchers found several challenges and various perceptions from teachers also students. A study by Rahman[3] explained three aspects of the

challenge of LMS adoption, There are technical problems, organizational problems, and sociocultural issues. The two main problems of technical problems are the lack of Indonesian expertise in computer literacy and technology infrastructure constraints. Next, there are three challenges from organizational issues that need to be enhanced: systemic, systematic institutional procedures in implementing systems, teacher and staff awareness and commitment to the transformation of LMS, and the university leadership's active involvement in promoting the system. In addition, the government has to face a challenge due to the geographical and social conditions of Indonesia to provide equal educational services to every city and university across the country and to change people's social attitudes about the technology of education.

2.3. Perceptions toward Learning Management System (LMS)

On the other side, the implementation of the Online Learning Management System (OLMS) will help provide an opportunity for students to get easy and communicative access, work collaboratively, and express their own opinion. [2] who investigated Indonesian EFL students' perspectives towards learning management system software showed that the participants give positive feedback toward their experiences in using LMSs. By utilizing LMSs, acknowledged that LMS was given enhancement to their speaking, reading, listening, and writing ability. In any case, some students stated that there were some technical problems that were discovered when they used the LMS, like a bad gateway connection. However, in helping students to have independent learning experiences, using the LMSs as strategy in learning a language. Taufiqurrochman[4] pointed out that LMS applications bolster the implementation of the blended learning model in Arabic learning. Students' perceptions results as users of the LMS application revealed as many as 112 of 150 students (75%) voting blended learning since this model now able to be implemented through various applications platform of LMS. Students stated, of the 10 LMS applications, the best is Edmodo and the most popular is Google Classroom. The results indicate that LMS application assists students to learn and develop their skills in speaking, writing, and grammar (Sharaf and Nahwu) based on students' perception of the features of the LMS application. Almareta & Paidi [5] who investigated biology teachers who used Learning Management System (LMS) for collaborative learning concluded that the presence of Moodle in learning is a choice of forms of learning for teachers online but there remains a collaborative interaction with students. Moodle is one type of LMS that is often utilized and well known all through the world. Moodle can be utilized by teachers for collaborative learning with the

interaction between the teachers and students through the system on Moodle. Form of learning biology using Moodle, specifically quizzes, exercises, group discussions, distribution of teaching material so that there is a collaborative interaction between teachers and students or collaboration peer students.

2.4. Smart Learning System

A technology-enhanced learning system that is able of advising learners to learn within the real-world with access to the digital world resources can be seen as a smart learning system[6]. The concept of smart learning is an effective and efficient learning method by utilizing smart technology in relevant systems. The main core of learning is the students themselves so that smart learning can provide service-based self-learning. An ideology of smart education in a framework is part of three main elements: smart environment, smart pedagogy, and smart learner as the center Zhu et al. cited by[7]. The following smart learning concept: first, focus more on learners and content than on the device; second, it is effective, intelligent, and adapted learning based on advanced IT infrastructure. Technology plays a vital role in supporting smart learning, but the focus is not only on the use of smart devices Gwak cited by [7].

3. Methodology

This study used mixed-method approach for its data collected were in the forms of quantitative and qualitative ones and whether it is carried out in a single study or in a multiphase series of studies Creswell (10). The type of mixed method used in this study is sequential explanatory. A sequential explanatory mixed methods design (also called a two-phase model; Creswell & Plano Clark) consists of first collecting quantitative data and then collecting qualitative data to help explain or elaborate on the quantitative results [8]. The population of this study is secondary schools in Semarang in which based on the references from *Kementrian Pendidikan & Kebudayaan* it is amounted to 232 schools. The sample involved 48 students taken from various secondary schools in Semarang by using cluster random sampling. The data were collected by distributing Google Form and making calls for the interview. Other data were taken through questionnaire consisting of closed-ended using Likert Scale with the criteria of Strongly Agree (SA), Agree (A), Slightly Disagree (SD), Disagree (D), Strongly Disagree (STD). The, the data were analyzed quantitatively and qualitatively.

4. Findings and Discussion

The quantitative data obtained from questionnaire regarding to students' perceptions about the implementation of LMS used are presented in tables as follows.

The following tables are the results of questionnaire about handicaps and solution of LMS used.

TABLE 1: Handicaps.

Statement	SA	A	SD	D	STD
The platform covered a synchronous learning process.	13%	63%	23%	0%	2%
The platform covered a synchronous interaction between students and students, both in small groups and large groups.	10%	60%	23%	4%	2%
The platform covered an asynchronous learning process.	6%	29%	38%	21%	6%
The platform covered an asynchronous interaction between students and students, both in small groups and large groups.	4%	42%	33%	17%	4%
The platform been equipped with facilities that keep students from tiring out in the learning process.	8%	48%	35%	4%	4%
The platform been equipped with facilities/menus that accommodate students in order to improve their critical thinking habits.	10%	54%	29%	4%	2%

As it is seen in Table 1, 13% respondents strongly disagree that the platform used has covered the synchronous learning process, 63% respondents agree, 23% respondents slightly disagree, 0% respondent disagree, and 2% respondents strongly disagree.

The statement about "The platform covered a synchronous interaction between students and students, both in small groups and large groups" got 10% respondents who answered strongly agree, 60% agree, 23% slightly disagree, 4% disagree, and 2% strongly disagree.

Respondents' response to statement about "The platform covered an asynchronous learning process" is 6% of respondents strongly disagree, 29% agree, 38% slightly disagree, 21% disagree, and 6% strongly disagree.

4% respondents answered strongly disagree that the platform used has covered interactions between students and students, both in small groups and large groups unsynchronized (asynchronous), 42% respondents agree, 33% respondents slightly disagree, 17% respondents disagree, 4% respondents strongly agree.

There were 8% respondents who were strongly agree that the platform used has been equipped with facilities/menus that keep students from getting bored in the learning process, 48% respondents agree, 35% respondents slightly disagree, 4% respondents disagree, and 4% respondents strongly disagree.

Respondents' response to "The platform been equipped with facilities/menus that accommodate students in order to improve their critical thinking habits" is 10% respondents strongly agree, 54% respondents agree, 29% respondents slightly disagree, 4% respondents disagree, 2% respondents strongly disagree.

TABLE 2: Solutions.

Statement	SA	A	SD	D	STD
If there are simple platforms, covering synchronous and asynchronous activities, also effective.	29%	54%	15%	2%	0%
The needed platform has a more interesting menu option so it makes students not bored in the learning process.	54%	35%	8%	2%	0%
The platform needed is synchronous interaction between students, both small groups and large groups.	38%	52%	10%	0%	0%
The platform needed is asynchronous interaction between students, both small groups and large groups.	15%	40%	33%	8%	4%
The platform needed has menu options/menu variations that could increase students' creativity.	42%	48%	8%	2%	0%
The platform needed has a menu where teachers can give feedback (correction/feedback) on students' work both independently and in small/large groups.	44%	50%	6%	0%	0%

Table 2 explains 29% respondents strongly disagree if there are simple platforms, covering synchronous and asynchronous activities, also effective, 54% respondents

agree, 15% respondents slightly disagree, 2% respondent disagree, and 0% respondent strongly disagree.

The statement about "The needed platform has a more interesting menu option so it makes students not bored in the learning process" got 54% respondents who answered strongly agree, 35% agree, 8% slightly disagree, 2% disagree, and 0% strongly disagree.

Respondents' response to statement about "The platform needed is synchronous interaction between students, both small groups and large groups" is 38% of respondents strongly disagree, 52% agree, 10% slightly disagree, 0% disagree, and 0% strongly disagree.

15% participants strongly disagree that the platform needed is asynchronous interaction between students, both small groups and large groups, 40% respondents agree, 33% respondents slightly disagree, 8% respondents disagree, 4% respondents strongly agree.

There were 42% respondents who were strongly agree that the platform needed has menu options/menu variations that could increase students' creativity, 48% respondents agree, 8% respondents slightly disagree, 2% respondents disagree, and 0% respondents strongly disagree.

Respondents' response to statement "The platform needed has a menu where teachers can give feedback (correction/feedback) on students' work both independently and in small/large groups.", is 44% respondents strongly agree, 50% respondents agree, 6% respondents slightly disagree, 0% respondents disagree, 0% respondents strongly disagree.

After quantitative data were collected, qualitative data were also analyzed to support and help to explain more about the topic. The qualitative data were taken by interview through call. The researchers provided one example of students' interview data.

Table 3

Interviewer	:	*In this pandemic situation, do you use online learning for school?*
Student	:	*Yes*
Interviewer	:	*What platform do you usually use?*
Student	:	*Google Meet, Zoom, Google Form, Quizizz.*
Interview	:	*Are there any advantages and disadvantages of those platform?*
Student	:	*The advantage is the assignment can be easily submitted. It is more practical. The advantage is boring. There is no interaction between teacher and student. It's not kuota friendly.*

From the interview, respondents had various opinions about LMS used. In students' opinions, they expressed some handicaps like lack of interaction between students and teachers, less attractive view, and boredom. They also suggested several solutions such

as developing new features which they could think more critically and communicate in terms of better learning. Furthermore, it may be equipped with facilities/menus that keep students from boredom in the teaching-learning process.

4.1. Discussion

Considering the results of both questionnaire and interview, some students have the same thought that the platforms they used do not cover synchronous and asynchronous learning process. It is shown in the result of questionnaire about handicaps in using LMS where most of the students who state disagree (38%) occurred in the statement of "the platform covered an asynchronous learning process", it means that the platform they used do not cover an asynchronous learning process. Others state disagree (35%) referred to the platform being equipped with facilities that keep students from tiring out in the learning process. The students who had been interviewed said that the platform they used makes them bored in learning process. 33% students slightly disagree that the platform covered an asynchronous interaction between students and students, both in small groups and large groups. It is supported by the interview data where some students expressed the platform, they used to be insufficient in students' interaction or both students and teachers' interaction. Likewise, the platform that has been equipped with facilities/menus that accommodate students in order to improve their critical thinking habits got 29%. The same slightly disagree percentage 23% shown in statements "the platform covered a synchronous learning process" and "the platform covered a synchronous interaction between students and students, both in small groups and large groups". Students commented that the platform lack interaction between students and teachers.

In Table 2, 54% students state strongly agree to the statement "the needed platform has a more interesting menu option so it makes students not bored in the learning process". They have such an opinion related to this point is due to the fact that the platform may be equipped with facilities/menus that keep students from boring in the learning process. Second, 44% of the students strongly agree that the platform needed has a menu where teachers can give feedback (correction/feedback) on students' work individually or in small/large groups. 42% of the students strongly agree that the platform needed has the menu options/menu variations that could increase students' creativity. Students need the platform that can make discipline, creative, independent. Then, 38% of the students strongly agree that the platform needed is synchronous interaction between students, both in small groups and large groups. They said that an effective

learning platform that can create good communication between teachers and students. 29% of the students strongly agree if there are simple effective platforms covering synchronous and asynchronous activities. It is supported by the interview data in which they said that an effective platform is a simple, face-to-face feature, access to the links and materials given by teachers; there are features for chat with teachers and students, and saves quota. Another 15% of the students strongly agree that the platform needed is asynchronous interaction between students, both small groups and large groups. The platform that they need is quite easy to operate and could help them learn effectively, interact with teachers and with other friends.

Based on the data collected, the platform they used does not cover a synchronous and an asynchronous learning process. Besides, it does not cover a synchronous and asynchronous interactions between students and students, both in small groups and large groups. In addition, the platform they used has not been equipped with facilities that accommodate students' interest and need in order to make the teaching learning process enjoyable or can enhance students' critical thinking. The need of the students to have simple, effective and practical platforms that cover synchronous and asynchronous interaction among students in small or large groups as well as between students and teachers is across from the result of the study. The fact that students do not need complicated platforms but simple ones which are easy to be operated. However, they provide various interesting menus and are easy to be operated. The platforms should also provide options where teachers can give feedback on students' work. Thus, through these activities students' motivation to learn as well as their creativity is increased.

5. Conclusion

Based on what has been discussed concerning the handicaps in using LMS faced by the students, conclusion can be drawn. Some students expressed their thoughts that the platforms they used do not cover synchronous and asynchronous learning process. Besides, it does not cover synchronous and asynchronous interactions among students both in small groups and large groups. In addition, the platforms they used were not equipped with facilities that keep students enjoy the learning process and were not equipped either with facilities/menus that accommodate students' interest in order to improve their critical thinking habits.

In short, students need platforms which cover effective synchronous and asynchronous activities, where interaction among students, both in small groups and large groups can be built. Besides, interesting menu options are badly needed in order to

avoid the students' boredom and thus can increase students' spirit and motivation to learn as well their creativity during the teaching and learning process.

It is expected that the result of this study may incite the researchers to design a Hybrid Smart Learning System that fulfill the students' need and can build students' metacognition.

Authors' Contributions

All authors contributed to the design and implementation of the research, to the analysis of the results and to the writing of the manuscript.

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References

[1] Watson, W. R., & Watson, S. L. (2007). An argument for clarity: What are learning management systems, what are they not, and what should they become? *TechTrends*, *51*(2), 28–34. https://doi.org/10.1007/s11528-007-0023-y

[2] Putri, E., & Sari, F. M. (2020). Indonesian EFL students' perspectives towards learning management system software. *Journal of English Language Teaching and Learning*, *1*(1), 20–24. https://doi.org/10.33365/jeltl.v1i1.244

[3] Adzharuddin, N. A., & Ling, L. H. (2013). Learning management system (LMS) among university students: Does it work? *International Journal of E-Education, E-Business, E- Management and E-Learning*, *3*(3), 248–252. https://doi.org/10.7763/ijeeee.2013.v3.233

[4] Rahman, A. A., Arifin, M. A., & Al-Furqan. (2019). Adopting Learning Management System in Indonesian higher education: The encountering challenges to the transformation. *Asian EFL Journal*, *23*(3), 83–97.

[5] Yunus, H. (2021). Online learning management system (OLMS) in Indonesian higher education: Investigating benefits and obstacles. *P-JEIS: Parahikma Journal of Education and Integrated Sciences*, *1*(1), 1–9.

[6] Taufiqurrochman, R., Muslimin, I., Rofiki, I., & Abah, J. (2020). Students' perceptions on learning management systems of Arabic learning through blended learning model. *Jurnal Al Bayan: Jurnal Jurusan Pendidikan Bahasa Arab*, *12*(1), 22–36. https://doi.org/10.24042/albayan.v

[7] Almareta, R., & Paidi. (2021). Biology teachers used Learning Management System (LMS) for collaborative learning. *Journal of Physics:Conference Series*, 1–6. https://doi.org/10.1088/1742-6596/1788/1/012029

[8] Irawan, R. (2020). Exploring the strengths and weaknesses of teaching speaking by using LMS- Edmodo. *ELTICS (English Language Teaching and English Linguistics) Journal*, *5*(1).

[9] Safriyani, R., & Khasanah, S. U. (2021). The strengths and pitfalls of Edmodo to Indonesian EFL learners: Student and teachers' voices. *Englisia: Journal of Language, Education, and Humanities*, *8*(2), 106–119. https://doi.org/10.22373/ej.v8i2.8092

[10] Hwang, G. J. (2014). Definition, framework and research issues of smart learning environments - a context-aware ubiquitous learning perspective. *Smart Learning Environments*, *1*(1), 1–14. https://doi.org/10.1186/s40561-014-0004-5

[11] Al Faruqi, U. (2019). Smart learning platform for management executive: A systematic literature review. *Jurnal Sistem Cerdas*, *2*(3), 194–202. https://doi.org/10.37396/jsc.v2i3.46

[12] Zhu, Z. T., Yu, M. H., & Riezebos, P. (2016). Aresearch framework of smart education. *Smart Learning Environments*, *3*(1), 1–17. https://doi.org/10.1186/s40561-016-0026-2

[13] Creswell, J. W. (2012). *Educational research planning, conducting, and evaluation quantitative and qualitative research* (Fourth Edi). Pearson.