



**STUDENTS' SATISFACTION WITH THE TESTING METHODS PROVIDED BY
MOODLE-BASED LEARNING MANAGEMENT SYSTEM:
A SURVEY IN GENERAL ENGLISH 2 CLASSES IN A PRIVATE HIGHER
EDUCATION INSTITUTION IN BANDUNG, INDONESIA**

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ABSTRACT

The outbreak of the novel corona virus COVID-19 has changed the way people interact to each other as well as the way people do in almost every walk of life, including education. Because of the physical distancing rule to slow down the spread of the virus, education system has now been facing a 360^o change in the way teachers deliver materials, interact to as well as with students and assess students' progress in their learning process facilitated by educational technology such as Moodle-based learning management system or LMS. This study was conducted to find out students' satisfaction with the testing methods delivered via a university's LMS in General English 2 class by employing a five-point-Likert scale questionnaire of which result was analyzed using descriptive statistical formulas. The results indicate that students involved in this study are highly satisfied with the testing methods provided by the university's LMS, which shows the adequate online teaching and learning management proficiency of the faculty members. This study calls for further research into the exploration of Moodle-based LMS affordance in assessing specific language skills.

Keywords: Moodle, learning management system, LMS, test, students' satisfaction, university, English class

**KEPUASAN SISWA TERHADAP METODE PENGETESAN YANG DILAKSANAKAN
DENGAN MENGGUNAKAN SISTEM MANAJEMEN PEMBELAJARAN BERBASIS
MOODLE: SEBUAH SURVEY DI KELAS GENERAL ENGLISH 2 DI SEBUAH INSTITUSI
PENDIDIKAN TINGGI SWASTA DI BANDUNG, INDONESIA**

ABSTRAK

Terjadinya pandemi yang disebabkan virus korona COVID-19 telah mengubah cara manusia berinteraksi satu sama lainnya serta cara manusia melakukan sesuatu di berbagai sektor kehidupan, termasuk pendidikan. Karena aturan jaga jarak untuk mengurangi kecepatan penyebaran virus tersebut, sistem pendidikan harus menghadapi perubahan yang begitu drastis dalam hal bagaimana pengajar menyampaikan materi, berinteraksi kepada dan dengan siswa, dan melakukan penilaian terhadap kemajuan belajar siswa yang difasilitasi oleh teknologi Pendidikan seperti sistem manajemen pembelajaran berbasis Moodle. Penelitian ini bertujuan untuk mengetahui tingkat kepuasan siswa terhadap metode pengetesan yang dilakukan dengan menggunakan LMS di kelas General English 2 di sebuah universitas swasta dengan menyebarkan kuesioner yang menggunakan skala Likert lima (5) yang kemudian dianalisis dengan menggunakan formula statistik deskriptif. Hasil penelitian ini menunjukkan bahwa mahasiswa yang terlibat dalam penelitian ini merasakan kepuasan yang cukup tinggi terhadap metode pengetesan yang dilakukan melalui LMS universitas, yang memperlihatkan kemampuan yang memadai dari sumber daya kampus dalam mengelola proses belajar mengajar secara online.

Keywords: Moodle, sistem manajemen pembelajaran, LMS, tes, kepuasan siswa, universitas, kelas Bahasa Inggris

1. INTRODUCTION

In the first three months of 2021, the world faced one of the deadliest diseases caused by the novel corona virus COVID-19 spreading fast from human to human through respiratory



system (Ismiyati *et al.*, 2021). To date, medicine to cure the disease has not been found yet, and even though the vaccines to prevent contagion has been developed and injected, the research is still in its infant phase. Therefore, COVID-19 prevention protocol such as maintaining physical and social distance is still the best choice despite of increasing number of vaccinated individuals (Yuniartha, 2021).

To conform this protocol, education system throughout the world evolves its delivery from traditional face-to-face class into online face-to-face, or face-to-screen class made possible by the advancement of information and telecommunication technology regardless of teachers' and students' level of expertise and preparedness (Almusharraf & Khahro, 2020). In Indonesia, the government via the ministry of education also implements fully online teaching and learning process to adapt to the situation (Rosayanti & Hardiana, 2021). Therefore, teaching or learning from home mediated by synchronous or asynchronous platforms is now considered normal although in the beginning of the remote online teaching and learning many thought it was almost impossible to do, as well as felt uncomfortable in using them because of the sudden change forced by the situation.

After more than one-year struggles of coping with the emergency remote teaching and learning as well as adapting to the novel teaching and learning environment, teachers and students across school systems as well as universities now begin to carry out the implementation proficiently. The shift of research topics in the field of education bears witness to continuous process of the change happened since the break out of the pandemic up until now. Prominent topics discussed in the early stage of emergency remote teaching and learning were those related to readiness to do online teaching and learning as well as obstacles faced in the implementation of online teaching and learning process. The investigation by Dwiyanti *et al.* (2020) found out that English learners involved in their study were ready for online learning but need a few improvements. Further, a study by Astuti & Solikhah (2021) showed that teachers in their study perceived teaching English during the outbreak of COVID-19 problematic mainly because of the lack of support system availability and internet quota. Similarly, Hermansyah & Aridah (2021) also reported that the obstacles emerged during the emergency remote teaching related to internet connection, internet data and teachers' knowledge to exploit education technology. One of the effects of the situation as Amiruddin & Jannah (2021) revealed after comparing students' aptitude before and after the pandemic was the decrease of students' English proficiency level.

Making the obstacles as lessons to learn, the ministry of education has been leading the way to the improvement of national online education. There have been various workshops, assistance packages, introduction of educational technologies *etc.* as serious efforts to cope up with the situation. Today, the use of learning management system shortened LMS to carry out teaching and learning process is a normality in almost all levels of education in Indonesia. LMS is chosen to improve the quality of education in this fully online era as it is a powerful software system providing automated mechanism assisting education institutions to deliver course content as well as track student progress. By using LMS, teachers are able to create lessons with specialized lesson tools, and on the other hand students can view multimedia lectures,



communicate with teachers and each other, download course materials, take quizzes, and submit homework as well as assignments (Kakasevski, Mihajlov & Arsenovski, 2008).

One of the most widely used LMSs is an open-source software called Moodle, or Modular Object Oriented Dynamic Learning Environment. According to a study by Krалеva, Sabani & Krалev (2019), Moodle meets almost all factors and evaluation criteria of the modern LMSs they compare. Among the three (3) umbrella criteria: learning skills tools, communication tools and productivity tools, only one sub criteria of learning skills tools is not available in Moodle, that is gamification. Moreover, Moodle offers free as well as premium paid version, and provides multilingual interface support. The complete package offered by this LMS makes Moodle become popular choice among higher education institutions in Indonesia to enhance the quality of teaching and learning process.

Numerous investigations on the implementation of Moodle-based LMS are extant. A study by Posese-Okesene (2017) revealed that the use of Moodle to facilitate online interactions improved student-lecturer, student-student as well as student-content interactions, of which improvement then had positive influence on students' motivation, confidence and performance. Likewise, a study by Salas-Rueda *et al.* (2020) involving 70 teachers showed an indication that Moodle positively influenced communication and participation during teaching and learning process. This strengthens previous finding by Popovic *et al.* (2018) which reveals the increase of students' interest, attendance as well as formative and summative scores when Moodle is introduced. Further, Deliwe (2020) mentions that Moodle becomes the choice as it meets the need of the university being investigated of a learner management system, blended learning, a students' feedback system, an interface between students and lectures as well as an enhancement tool.

Previous studies also cover learners' satisfaction with the use of Moodle in teaching and learning process. Research to reveal Moodle learners' satisfaction is important as it is one of the indications of the LMS success in mediating teaching and learning process. Investigation by Wongsate & Rutaikarn (2019) found out that students involved in their research felt moderately satisfied with the effectiveness of Moodle as e-learning medium. Similarly, Rodriguez *et al.* (2019) report that most of the students in their investigation are satisfied when using a Teaching Assistant System in Moodle. Those examples studies reflect general satisfaction perceived by students when using this LMS. However, investigation on students' satisfaction with testing methods provided by Moodle-based LMS is still limited. To name but a few, a study by Xu & Mahenthiran (2016) reveals successful online assessment activities indicated by students' satisfaction with the easiness of completing assessment via Moodle-based LMS. It is important to enrich extant literature by conducting investigation on students' satisfaction with testing methods provided by Moodle-based LMS in many contexts to reveal the success, or failure, of conducting online assessment. Therefore, this study intends to find out the answer to the following question:

1. What is the level of students' satisfaction with the testing methods provided by a Moodle-based LMS in a private university in Bandung, Indonesia?



2. RESEARCH METHOD

The purpose of this study is to explore students' satisfaction with online testing methods delivered via a Moodle-based learning management system built by a private university in Bandung, Indonesia. To seek the answer to the previously mentioned research question, a survey utilizing a five-scale questionnaire adapted from an extant literature (Wang, 2003) was carried out. The survey was generated and disseminated using Google Forms application then made available to a hundred students from several study programs such as Architecture, Industrial Engineering, as well as Geodetic in a private university in Bandung, Indonesia in May 2021 via the university LMS as well as classes' WhatsApp Group. The students were taking General English 2 in the fourth semester of their study and had 2 and half semesters of fully online learning experience. The university's Moodle-based LMS had been developed some time before the outbreak of the novel corona virus COVID-19. However, the fully online usage of the LMS began in the beginning of the learning-from-home program because of the pandemic.

The first three questions of the questionnaire ask respondents' demographic information *i.e.* name, student number and gender. The second part of the questionnaire consists of six (6) questions aiming at seeking students' satisfaction level of the testing methods delivered through the university LMS. The seven questions require respondents to choose one out of five (5) agreement levels typically employed in a Likert's scale ranged from 1) strongly disagree, 2) disagree, 3) neutral (neither agree nor disagree), 4) agree and lastly 5) strongly agree. To gain deeper understanding towards respondents' choice, each question also requires students to provide reason why they choose a certain level of agreement. The notification of consent is attached in introduction of the questionnaire therefore the completion of the survey indicates their agreement to participate in this study.

To analyze the data gathered from the completed questionnaire, a descriptive statistical analysis was conducted using Microsoft Excel as the gathered data are not robust and the application is equipped with statistical formulas which can adequately be used to analyze the data of this research. The responses to each of the questions in the questionnaire were imported into Microsoft Excel from Google Forms quite easily as the platform offers file with the extension of .xlsx when downloading the result. Before analyzed using the formulas readily available in Microsoft Excel, respondents' choices among the five Likert scales were transformed into values where strongly disagree scores 1, disagree 2, neutral 3, agree 4 and strongly agree 5. The scores are then measured to find the average score as well as standard deviation, skewness and kurtosis values. The average score was used to answer the research question of the extent of students' satisfaction with the testing method delivered via the university's LMS while SD was used to find out how closer the data to the true value. Moreover, the skewness and kurtosis values measured from the data of this study were used to find out the normality of the data spread.

3. RESULT & DISCUSSION



The first part of the questionnaire asking respondents' demographic information yielded three (3) types of results; respondents' name, student number and gender. The two first consecutive answers are not displayed in this article as part of research ethics to protect respondents' personal information. Meanwhile, the result of the question about gender is shown in Tabel 1.

Tabel 1. Respondent gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	F	31	33,3	33,3	33,3
	M	62	66,7	66,7	100
	Total	93	100	100	

Out of the total 100 students asked to fill in the form, only 93 were consent to be the respondents of this investigation. The table shows that out of the total collected data, 33 % were female students, and 67 % were male students. Even though the result indicates that there is imbalance composition between female and male respondents, the fact is that generally more males attend higher education institutions focusing on engineering and design. Therefore, the result shows a general picture of female-male composition in this type of university.

Table 2 shows the average mean score of all questions incorporated in this study's questionnaire. The table also shows the results of standard deviation, skewness and kurtosis. Standard deviation score indicates how data spread out and values no higher than plus or minus 2 SD are the ones that are closer to the true value. Skewness is the measurement of asymmetry while kurtosis indicates the "peakedness" of data distribution. Zero (0) skewness value means the data symmetrically spread, and the values for skewness between plus minus 2 are considered appropriate to prove normal distribution. Meanwhile, normal kurtosis values are those between plus minus 3, which means data are evenly distributed.

Table 2. Result of the Questionnaire

Item	N	M	SD	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std Error	Statistic	Std Error
1	93	4.41	1.09	-0.93	0.25	-0.27	0.50
2	93	4.46	0.82	-0.45	0.25	0.81	0.50
3	93	4.10	0.87	-0.48	0.25	-0.01	0.50
4	93	4.55	0.71	-0.93	0.25	2.54	0.50
5	93	4.73	0.78	-1.02	0.25	2.45	0.50
6	93	4.43	0.83	-0.5	0.25	0.61	0.50

As seen in table 2, all question items intended to find out students' satisfaction level towards the testing methods delivered via Moodle-based LMS in the university being studied have SD values within the range plus minus 2. This indicates that the data gathered in this study



are really close to the true values. Moreover, the skewness values of all question items are near to zero (0) except for item number five (5). However, the skewness value of item five (5) is still within the normal distribution range of plus minus 2. Therefore, it is highly likely that the data of this research quite evenly spread. This finding is also strengthened by the result of kurtosis measurement. The kurtosis values of all items, which are within the range plus minus 3 indicate that the curves are mesokurtic. Therefore, it is safe to assume that the data gathered to find the answer of the research question spread ideally.

Regarding the first item of the questionnaire: *“The university’s LMS makes it easy for you to evaluate your learning performance”*, the average score of the respondents’ answer is 4.41. This indicates that the students involved in this study are highly satisfied with the use of the University’s LMS to evaluate their learning performance. Based on the reasons the respondents provided for this question item, it is found out that the most common reason for the positive answer is that the testing methods delivered via the university’s LMS provides the score and answer key right after the students complete their tests. Therefore, students are well aware of how well, or bad their learning performance is. The impact is that they feel they are encouraged to do better in the up-coming tests. However, there is also complaint from the respondents that the key answers are not equipped with the reasons for the provided right answers. They need the explanation of the answers to evaluate why they provide answers differently from the key answers. Actually, Moodle itself provides multimodal tools such as text, audio as well as video for teachers to provide feedback for any given question and answer. Therefore, it is suggested for teachers to make use of these features to help students understand what they know and what they still have not known so that they can learn from their mistakes.

The average score for the second question item in the questionnaire: *“The testing methods such as for quizzes, middle test and final test provided by the university’s LMS are easy to understand.”* is 4.46, which can be considered quite high. This means that the majority of the respondents fairly strongly agree with the statement. When looking at the reasons mentioned by respondents for this item, it is found out that many respondents explain they are able to exploit the features for doing tests in no time. As the consequence, they think that doing tests via the university’s LMS has more flexibility than paper-based tests. They can just log in, click the link for the tests, do the tests according to the instructions and then submit it. They also say that the presence of time count helps them estimate the time allotment. This could be that as the university has implemented Moodle-based LMS since the beginning of the pandemic, students in this investigation are already familiar with the tools needed to do learning tasks such as quiz. However, there is also a voice mentioning the instructions are sometimes ambiguous so that he or she needs to have some time to figure out what the instructions really mean. This demonstrate that test instruction exploiting multimodal tools such as text, sound as well as video provided by Moodle should be maximally used to avoid misunderstanding.

For the third item: *“The testing methods such as for quizzes, middle test and final test provided by the university’s LMS are fair.”* the average score is also fairly high, 4.10. This indicates that the majority of the respondents agree with the fairness of the tests delivered via



the university's LMS. From the provided reasons, it is found out that the respondents mention the fairness of the tests delivered via the university's LMS is because the sequence of the questions is jumbled and students are not able to navigate the questions freely so that at the same time every student gets different question. Some also mention that the tests are fair as the questions asked in the tests are in accordance to the materials learnt in the class as well as the answers are checked by the system that nobody gets good score because of their closeness to the teacher.

However, some students also make complaint that sometimes their answers are deemed wrong by the system but when the tests end, they find out that their answers are exactly the same with the answer key. They feel it is unfair because they should have higher score. Some also report that at the times of tests the class have a meeting using Google Meet then discuss the answers to the questions they get, or they can search online for the answers. From the students' voice it can be understood that Moodle-based LMS is like a coin with two sides. At one end, it provides a sense of security in fairness but at the other end it is worrisome as sometimes it may go wrong because of some unknown reasons. Therefore, teachers should always have backup plan(s) to overcome technical problems which may arise at the time of testing to reassure students that technical problems will not hinder them to gain fair score. Moreover, teachers should also improve their technological knowledge regarding the use of Moodle-based to provide tests with less technical problems. Further, good technical knowledge helps teachers minimize the chances for students to cheat using the advancement of technology.

Question item number four (4): "*The university's LMS provides secure testing environment.*" also gets fairly high average score of 4.55, which indicates a high satisfaction level to the testing methods delivered via the university's LMS. Many of the respondents report that they feel the security as every student has their own account therefore no one is able to intrude them when they are having tests or uses their account to do tests as well as no one except the account owner and the teacher has the information of students' scores. According to them, so far no one has ever breached their account or scores.

The average score for question item number five (5): "*The university's LMS provides testing results promptly.*" is the highest among all other items in the questionnaire: 4.73. The promptness offered by the university's LMS is also supported by the reasons respondents provide for item number five (5). The majority mention that they are able to access the score as soon as they complete the test. Immediate result of testing is what test takers seek therefore promptness in having test results is an indication of satisfaction.

Question item number six (6) of the questionnaire: "*As a whole you are satisfied with the testing methods provided by the university's LMS*" gets fairly high score of 4.3. This means that the respondents have quite high satisfaction with the testing methods provided by the university's LMS. This finding is also backed up by the reasons provided by the respondents. They say that using LMS in taking a test is easy to do as well as more effective and efficient than paper-and-pencil test. They also mention that the key answers provided by the LMS right after tests are closed help them review their performance and learn from the mistakes they make.



4. CONCLUSION

Because of the world-wide spread of the novel corona virus COVID-19, all sectors through-out the world including in Indonesia are forced to change their usual ways of doing to cope up with the never-ending pandemic. Education as one of the sectors very much affected by the pandemic, must prepare emergency plans to overcome the unexpected situation and provide accessible and good quality of teaching and learning process. Led by Indonesian ministry of education, education institutions both state and private owned, as well as in all levels including higher education institutions prepare fully online teaching and learning process mediated by educational technology. One of teaching and learning media encouraged to exploit is Moodle-based learning management system. Due to the novelty of fully online teaching and learning process mediated by Moodle-based LMS, faculty members made, and still make, numerous efforts to provide the best learning experience, including its assessment for the students.

This study investigated the extent of students' satisfaction with the testing methods provided by a university's Moodle-based LMS. Based on the gathered and analyzed data, the study concludes that students' satisfaction with the testing methods provided by the university's Moodle-based LMS is fairly high. It is revealed that easiness to use and understand, fairness, security, immediate test result as well as provision and explanation of key answers are features offered by Moodle-based LMS which make students content with the testing methods provided by the university's LMS.

Based on the finding, this study suggests it should be rethought the types of testing methods used to assess students' learning progress so that it can be fairly measured. Furthermore, possible chance to cheat such as having online class meeting to discuss the answers, or searching the answers online when having tests also becomes an issue when delivering tests via LMS. Therefore, it is urgent to provide a series of professional development in forms of workshops and practical trainings regarding the use of testing features offered by Moodle-based LMS so that teachers are able to exploit them to provide students with fair and secure testing experiences.

As this study primarily concerned with the extent of satisfaction level towards the testing methods provided by Moodle-based LMS in the context of General English class, future studies are recommended to explore the affordance of Moodle-based LMS in assessing specific language skills such as listening, speaking, reading and writing. Moreover, even though the findings of this research seem promising, the data were gathered from a specific context and limited respondents. As such, it is possible that different results may be achieved in a variety of contexts and large body of respondents.

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APPENDIX

Questionnaire

Part 1: Demographic Information

1. Name
2. Student Number
3. Gender

Part 2: Survey on Students' Satisfaction with the Testing Methods Provided by Moodle-based Learning Management System

1. The university's LMS makes it easy for you to evaluate your learning performance.
- Strongly disagree - Disagree - Neutral - Agree - Strongly agree
Please provide reason(s) for your choice.
2. The testing methods such as for quizzes, middle test and final test provided by the university's LMS are easy to understand.
- Strongly disagree - Disagree - Neutral - Agree - Strongly agree
Please provide reason(s) for your choice.
3. The testing methods such as for quizzes, middle test and final test provided by the university's LMS are fair.
- Strongly disagree - Disagree - Neutral - Agree - Strongly agree
Please provide reason(s) for your choice.
4. The university's LMS provides secure testing environment.
- Strongly disagree - Disagree - Neutral - Agree - Strongly agree
Please provide reason(s) for your choice.
5. The university's LMS provides testing results promptly.
- Strongly disagree - Disagree - Neutral - Agree - Strongly agree
Please provide reason(s) for your choice.
6. As a whole you are satisfied with the testing methods provided by the university's LMS.
- Strongly disagree - Disagree - Neutral - Agree - Strongly agree
Please provide reason(s) for your choice.