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Usability Evaluation of Learning Management Systems: Google Classroom, Microsoft Teams and Padlet

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Abstract

In education, it is crucial to make the students enjoy during the class. Many platforms have been introduced for online classes, especially since the COVID-19 pandemic; thus, it is significant to assess the student's perception of the usability of those platforms. This research aims to evaluate the usability of the selected platforms, Google Classroom, Microsoft Teams, and Padlet. The System Usability Scale is used to measure the usability of each Learning Management System platform. A survey consisting of ten questions is distributed to a group of students. The result indicates that Google Classroom got the highest usability score, suggesting that it provides students with a more user-friendly and intuitive experience. Although Microsoft Teams received the lowest usability score, ironically, most students prefer to use it compared to the other LMSs. These findings emphasise that it is important to consider factors beyond usability alone when assessing students' platform preferences. Understanding these factors can assist educators in making informed decisions about selecting and implementing LMS platforms.

Keywords: Learning Management Systems, Google Classroom, Microsoft Teams, Padlet.

Introduction

Online education has become popular in the modern era and plays a vital role in education (Liu et al., 2020). Open and Distance Learning (ODL) in higher learning institutions has become common due to the Covid-19 pandemic, and it is still relevant even in the endemic situation in Malaysia. Several ODL platforms or tools can be used to support online education needs. Those platforms and tools allow communication between the lecturers and the students. Several activities should be considered in online learning, such as giving lectures, sharing resources, assignment submissions, quizzes, tests, and final exams.

Over the years, studies on Learning Management Systems (LMS) and ODL tools have widely been done to measure the different aspects crucial for teaching and learning. This includes the study on user experience on Google Classroom (Az-Zahra et al., 2023), students' perception of using Telegram (Zubbir et al., 2022), the acceptance of Google Meet (Radzi et

al., 2021), the impact of Google Classroom on student's literacy (Dewi et al., 2022), and the student's preferences of the ODL tools (Saidi et al., 2021).

Although many studies have been done, there is still room for further research, and this study will focus on the usability of the LMS. This research is conducted to evaluate the usability of ODL platforms used by students for at least ten weeks. This research focuses on three online platforms: Microsoft Teams, Padlet and Google Classroom.

Microsoft developed Microsoft Teams, while Google developed Google Classroom, and it is also a cloud application that can be run on desktop and mobile devices. It is a part of Google Apps for Education (GAFE) (Rahmawati et al., 2019). Both cloud applications allow users to share resources, conduct online meetings, chat, submit and receive files. They can also run on a desktop or mobile device like a smartphone or tablet.

Padlet is a virtual wall that functions like a notice board. The creator of the wall controls the layout, the contents, the design, and the privacy of the wall (Deni & Zainal, 2018). The Padlet is a web 2.0 tool like Facebook and Twitter. The Padlet also allows users to share resources and communicate through comments.

Using Microsoft Teams and Google Classroom, a lecturer can create a group and invite the students to join it. Thus, the lecturer and the students can communicate like in an actual classroom (Okmawati & Tanjak, 2011). With Padlet as an online learning tool, lecturers and students will have another online platform to discuss, creatively throw ideas, and share resources and their work like in a physical classroom.

Methodology

This research is divided into several stages, as shown in Figure 1. The first step is identifying LMSs that are available for the learning process. Next, let the students use those LMSs for at least 10 weeks. Then, a survey question is distributed to the students. The last step is collecting their responses, analysing, and discussing the result.

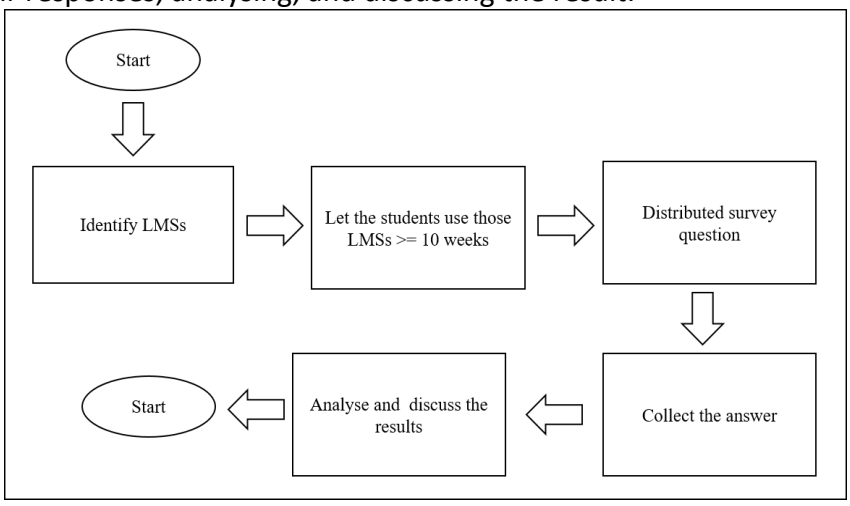

Figure 1 Steps involved

System Usability and System Usability Scale (SUS)

System usability refers to the ability of a system to provide users with conditions to perform tasks effectively, efficiently, and safely while enjoying the experience (Ilyas et al., 2022). John Brooke in 1986 initially created System Usability Scale (SUS), which was adapted to various systems and applications to measure the product's usability.

There are ten (10) statements with five (5) response actions to be answered by the respondents, as shown in Table 1. Respondents must select a scale from one (strongly disagree) to five (strongly agree).

Table 1
The System Usability Scale Questionnaire

No	Statements
1	I think that I would like to use this system frequently.
2	I found the system unnecessarily complex.
3	I thought the system was easy to use.
4	I think that I would need the support of a technical person to be able to use this system.
5	I found the various functions in this system were well integrated.
6	I thought there was too much inconsistency in this system.
7	I would imagine that most people would learn to use this system very quickly.
8	I found the system very cumbersome to use.
9	I felt very confident using the system.
10	I needed to learn a lot of things before I could get going with this system.

To measure the SUS score, there are guidelines to be followed. Referring to Table 1, for odd statements; 1,3,5,7 and 9, subtract one from the user response, while for even statements; 2,4,6,8 and 10, subtract the user response from 5. Then, get the total scores and multiply them by 2.5. This gives the range values of the SUS score from 0 to 100.

Figure 2 shows the guidelines for interpreting the score. If the value is between 90 to 100, it is considered the best or in the A category. The rest of the score category is shown in Figure 2.

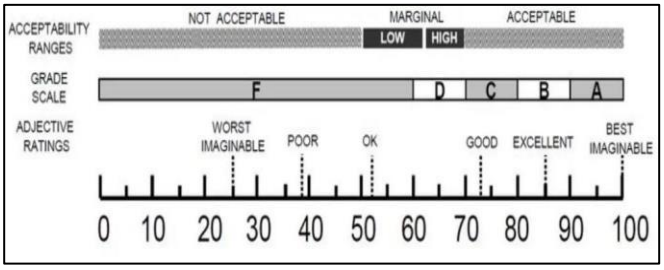

Figure 2 SUS Score Scale

For this study, a survey was disseminated to the control groups. All the respondents were undergraduate students from one local university who enrolled in the Science and Technology program. All the respondents have at least ten weeks of experience using Google Classroom, Microsoft Teams, and Padlet. Their lecturers used all these platforms to share lecture materials such as notes and videos. This survey was distributed through the Telegram platform. There are ten questions centred on the usability of each platform based on the System Usability Scale (SUS) and one additional question on the most preferred platform. The summary of the respondent's demographic is tabulated in Table 2.

Table 2
Demographic characteristics of respondents (N = 59)

Demographic characteristic	Items	Number of respondents	Percentage (%)
Institution	Public Institution (IPTA)	59	100
Field of Study	Science & Technology	59	100
Experience using the LMS	Yes	59	100
	No	0	0

Result and Analysis

This part presents the quantitative results of the study used to answer the research questions on the Usability of Learning Management Systems (LMS) for Google Classroom, Microsoft Teams, and Padlet. There are 10 items used in the questionnaires for each LMS based on SUS. In this study, the SUS mean score was calculated for each respondent based on the online learning tools' usability, and the results were presented in Table 3. The mean score was used to compare the usability of the existing LMSs used in this study.

The usability of LMSs was measured using the System Usability Scale (SUS) questionnaire, which assesses the usability of Google Classroom, Microsoft Teams, and Padlet. The results are illustrated in Table 3.

Table 3
Summary of SUS Scores on Learning Management Systems (LMS)

LMS Platform	Mean Score	Total SUS Mean Score
Google Classroom	28.45	71.14
Microsoft Teams	23.00	57.50
Padlet	26.74	66.84

Through the adjective rating shown in Figure 1, the gain values from the total SUS score were processed to classify the system's usability. From the study, the SUS score for Google Classroom is 71.14 which is classified as a good adjective rating with high acceptability range (>70 scores). Padlet has an okay adjective rating with an SUS score of 66.84, followed by Microsoft Teams with 57.50 and classified as a poor rating.

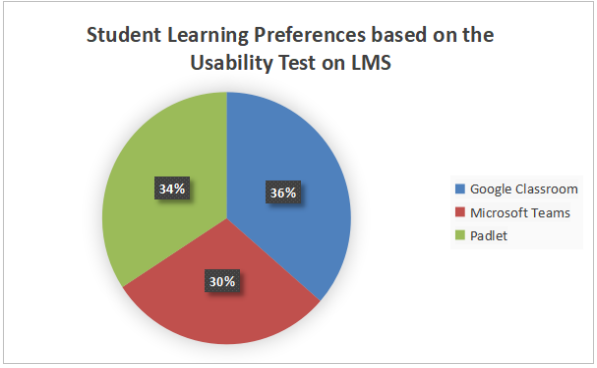

Figure 3 The Percentage of Student Learning Preferences based on the Usability Test on LMS

The results shown in Figure 3 were based on the statistical results used to measure learning preferences among students using the SUS score. From the survey, google Classroom had the highest percentage with 36%, followed by Padlet with 34% and Microsoft Teams at 30%. The study was also conducted to get responses for respondents' preferred LMS.
However, the results were contradictory; it found a higher percentage for Microsoft Teams than Google Classroom and Padlet, as shown in Figure 4. Based on the comparison of these two results, Padlet had become the least preferable LMS with 14% compared to SUS mean score of 66.84.

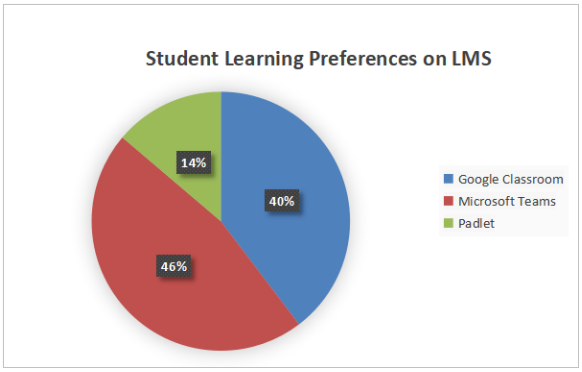

Figure 4 The Percentage of Student Learning Preferences on LMS

Conclusion

This paper aims to evaluate the student's perspective on the usability of the selected LMSs. There are three LMSs in this study which are Google Classroom, Microsoft Teams, and Padlet. Based on the survey, the result shows that the highest SUS score goes to Google Classroom, followed by Padlet and Microsoft Teams. It means the most usable LMSs is Google Classroom. However, even though the SUS score showed Google Classroom has the highest score, most students preferred using Microsoft Teams. Further studies can be done to study the relationship between the SUS score and the student's preferences.

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