Exploration of Factors Technology Acceptance of LMS Google Classroom

(A Systematic Literature Review)

Muhamad Iqbal Rizki Permana*
Technology and Vocational Education Study Program
School of Postgraduate Studies
Universitas Pendidikan Indonesia
Bandung, Indonesia
*muhamadiqbalrp@gmail.com

Iwan Kustiawan
Technology and Vocational Education Study Program
School of Postgraduate Studies and TVET RC
Universitas Pendidikan Indonesia
Bandung, Indonesia
Iwan_kustiawan@upi.edu

Abstract—The purpose of this study is to explore the methods and factors that influence the acceptance of Google Classroom technology. This study uses a Systematic Literature Review. Articles are retrieved via the application publish or perish 7 issue of 2010-2021. Then the article is made into a logbook for easy analysis. The result show that the TAM and UTAUT models are the most widely used. Meanwhile, the most influential factors in the acceptance of Google Classroom are perceived usefulness and perceived ease of use. In addition, the factors of learning content quality, self-efficacy, user interface, performance expectancy, effort expectancy, social influence, facility condition, habit, hedonic motivation, effort expectancy, and facility condition influences the acceptance of google classroom.

Keywords—Google Classroom, LMS, TAM

I. INTRODUCTION

During the Covid-19 pandemic, teachers and students are required to switch from face-to-face learning methods to e-learning-based learning. e-learning is information and communication technology to enable students to learn anytime and anywhere [1]. While the Learning management system (LMS) is an infrastructure that delivers and manages content, identifies, assesses, tracks progress, collects and presents data to oversee the overall learning process [2]. Meanwhile, according to another understanding LMS is a software that helps in teaching / delivery of subject matter via the internet. One example of an LMS is Google Classroom [3].

Google Classroom has recently grown rapidly and is the most widely adopted in education [4]. Google Classroom is a free web-based learning management platform that allows anyone to create and manage classes online as long as they have a Google Account [5]. Google Classroom is a mobile learning platform that is popular in learning today, commonly used to make attendance lists, provide material, give assignments, to provide assessments. Mobile learning is learning that utilizes technology and mobile devices. In this case, the device can be a cell phone, laptop, tablet PC, and so on. With mobile learning, users can access learning content anywhere and anytime, without having to visit a certain place at a certain time [6].

Understanding why people accept or reject new information or communication technologies has been one of the most challenging problems in the study of new technologies [7]. User acceptance is defined as a user’s tendency to use the system [8]. User acceptance is an important factor in demonstrating the value of the system [9]. The effectiveness of the implementation of all kinds of technology still depends on the acceptance of its users [10]. No matter how good and sophisticated the technology is developed, it will be meaningless if the technology cannot be accepted or even desirable by its target users [10]. Continued use of technology is very dependent on user acceptance. This study aims to see the methods and factors most influencing the acceptance of Google Classroom.

II. METHODOLOGY

In this literature review process, the authors adopted the method used in Smet [11], among others:

- Determine the area to be covered and literature search
- Determine inclusion and exclusion criteria
- Analysis
- Writing

A. Determining the Covered Area and Literature Search

The first step, the researcher determines the research question and some keywords. This study aims to determine the research area in the field of LMS Google Classroom technology acceptance, so the research questions to be answered include:

- What factors have had the most influence on the acceptance of Google Classroom?
• What research methods were used?

Based on these areas, researchers used keywords including Google Classroom, LMS and TAM to find relevant articles. Articles are searched using the publish or perish 7 application published in 2010-2021. The choice of the publish or perish application is because it makes it easier for researchers to search for data related to articles according to keywords, and the majority of Scopus indexes. The data that appears are then opened one by one and recapitulated. The applied data were then considered according to the inclusion criteria.

B. Inclusion Criteria and Exclusion Criteria

The criteria for articles that can be included in the literature review in this article include:

• Scientific article that discusses the acceptance of Google Classroom technology
• Articles in English and published in indexed journals.
• Articles with years published between 2010-2021.

Selected several articles as representatives of the acceptance of Google Classroom technology

III. RESULTS AND DISCUSSION

From the search results using the publish or perish 7 application, articles are selected according to keywords and processed. Articles that fall into the inclusion criteria are taken and used as research material. Other articles that fall into the exclusion criteria are not included in the discussion of the literature review in this article. Based on the predetermined criteria, there were 5 articles that discussed about acceptance of Google Classroom technology and 10 articles as supporting articles of technology acceptance.

Articles that have been entered into the summary are then summarized in the form of a logbook table containing the author's name, year of publication, research objectives, research methods, and research results. The summary results can be seen in Table 1.

<table>
<thead>
<tr>
<th>No.</th>
<th>Component</th>
<th>Author</th>
<th>Year</th>
<th>Research Purposes</th>
<th>Method</th>
<th>Research Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LMS</td>
<td>De Smet, Cindy, et al.</td>
<td>2012</td>
<td>This study aims to determine acceptance of LMS technology by middle school teachers</td>
<td>Quantitative Methods, using models TAM (Technological Acceptance Model)</td>
<td>The most influential factors in using an LMS are the Perceived Ease of Use (PEOU) and User Interface (UI) factors.</td>
</tr>
<tr>
<td>2</td>
<td>E-learning</td>
<td>Al-Okaily, Manaf, et al.</td>
<td>2020</td>
<td>This study aims to determine acceptance of new education “e-learning” during the pandemic by students at the university. Jordan</td>
<td>Quantitative Methods, using models TAM.</td>
<td>Factor Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) are strong factors in the acceptance of E-learning. In addition, it turns out that subjective norms such as Peer Influence (PI) and Social Influence (SI) greatly influence the use of e-learning.</td>
</tr>
<tr>
<td>3</td>
<td>LMS</td>
<td>Mafuna, L., and N. Wadesango.</td>
<td>2016</td>
<td>This study aims to determine level of acceptance of lecturers for LMS</td>
<td>Quantitative Methods, using models TAM.</td>
<td>Factor Perceived Ease of Use (PEOU), Perceived Usefulness (PU), subjective (SN) Facility Condition (FC) are factors that influence the acceptance of LMS.</td>
</tr>
<tr>
<td>4</td>
<td>Open Online Courses</td>
<td>Al-Rahimi, Waleed Mugahed, et al.</td>
<td>2019</td>
<td>This study aims to determine the factors that influence students in using MOOC</td>
<td>Quantitative Methods, using a combination model TAM and IDT</td>
<td>The results of the research are Perceived Enjoyment (PE), Perceived Compability (PC), Trialability (TR), Complexity (CO), Observability (OB) Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) have an effect on the use of MOOC. However PC does not affect PU and TR does not affect PEOU.</td>
</tr>
<tr>
<td>5</td>
<td>Google Classroom</td>
<td>Al-Marool, Rana A. Saeed, and Mostafa Al-Emran [15]</td>
<td>2018</td>
<td>This study aims to study the factors that influence the use of Google Classroom among Al Buraimi University College students in Oman</td>
<td>Quantitative Methods, using models TAM</td>
<td>The results showed that PEOU and PU positively influenced the intention to use Google Classroom.</td>
</tr>
<tr>
<td>6</td>
<td>Google Classroom</td>
<td>Kumar, JA, &amp; Bervell, B.</td>
<td>2019</td>
<td>This study aims to determine the factors that influence the use of Google Classroom</td>
<td>Quantitative Method, using the UTAUT2 model</td>
<td>The results showed that the strongest factors found in the use of Google Classroom were Habit (H), Hedonic Motivation (HM) and Effort Expectancy (EE).</td>
</tr>
</tbody>
</table>
Table 1 cont.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td><strong>Google Classroom</strong></td>
<td>Ahmad, TSAS, Ramlan, ZS, &amp; Krishnan, S. K [16]</td>
<td>2020</td>
<td>This study aims to determine the level of student acceptance in using Google Classroom for learning English.</td>
</tr>
<tr>
<td>8</td>
<td><strong>Google Classroom</strong></td>
<td>Chavoshi, A., &amp; Hamidi, H. [17]</td>
<td>2019</td>
<td>Research purposes This is for learn the factors that influence the use of Google Classroom</td>
</tr>
<tr>
<td>9</td>
<td><strong>Google Classroom</strong></td>
<td>Jakkaew, P., &amp; Hemrungrote, S. [4]</td>
<td>2017</td>
<td>The purpose of this research is to learn the factors that influence the use of Google Classroom</td>
</tr>
<tr>
<td>10</td>
<td><strong>M-Learning</strong></td>
<td>Al-Emran, M., Mezhuyev, V., &amp; Kamaludin, A.</td>
<td>2020</td>
<td>The purpose of this study was to determine the acceptance of m-learning at Pahang University Malaysia.</td>
</tr>
<tr>
<td>11</td>
<td><strong>Moodle</strong></td>
<td>Yeeou, M</td>
<td>2016</td>
<td>The purpose of this study was to determine the acceptance of the Moodle LMS by students.</td>
</tr>
<tr>
<td>12</td>
<td><strong>E-Learning</strong></td>
<td>Lee, YH, Hsiah, YC, &amp; Chen, YH</td>
<td>2013</td>
<td>The purpose of this study was to determine employee acceptance of e-learning learning</td>
</tr>
<tr>
<td>13</td>
<td><strong>LMS</strong></td>
<td>Stantchev, V., Colomo-Palacios, R., Soto-Acosta, P., &amp; Misra, S.</td>
<td>2014</td>
<td>The purpose of this study was to determine the acceptance of LMS technology</td>
</tr>
<tr>
<td>14</td>
<td><strong>E-Learning</strong></td>
<td>Song, Y., &amp; Kong, SC</td>
<td>2017</td>
<td>The purpose of this study was to determine the acceptance of the statistics learning platform</td>
</tr>
<tr>
<td>15</td>
<td><strong>Acceptance</strong></td>
<td>Taherdoost, Hamed. [18]</td>
<td>2018</td>
<td>The purpose of this study is to determine the technology acceptance model that is most often used</td>
</tr>
</tbody>
</table>

Five articles have discussed the acceptance of Google Classroom technology. All use quantitative methods and the model used is the Technological Acceptance Model (TAM) [15,16], Unified Theory Of Acceptance And Use Of Technology 2 (UTAUT2) [4,5], and a combination of TAM and Unified Theory Of Acceptance And Use Of Technology (UTAUT) [17]. The TAM and UTAUT models are the most popular and most frequently used models of technology acceptance [18]. Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) variables are the main features of the TAM model, while neither UTAUT nor UTAUT2 have these variables. The TAM model can be used by adding additional variables such as the Using Interface variable[4,14,16] Social Influence [13,17] and Facility Condition [4,14,17].

The strongest factor that affects the interest in using Google Classroom's Behavioral Intention to Use (BIU) is the variable perceived usefulness and perceived ease of use [15–17]. In addition, the factors that influence the use of Google Classroom are learning content quality, self-efficacy, user interface [17], performance expectancy, effort expectancy, social influence, facility condition [4], habit, hedonic motivation, effort expectancy [5], and facility condition [5,17].

**IV. CONCLUSION**

This article has discussed the acceptance of Google Classroom technology, the result is that the most widely used models are the TAM and UTAUT models. Meanwhile, the most influential factors in the acceptance of Google Classroom technology are perceived usefulness and perceived ease of use. In addition, the factors of learning content quality, self-efficacy, user interface, performance expectancy, effort expectancy, social influence, facility condition, habit, hedonic motivation, effort expectancy, and facility condition influences the acceptance of google classroom technology.

**REFERENCES**


