The Development of E-Module in the making of LMS by using G-Suite to Improve Indonesian Language Media Literacy

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Abstract— **Learning Indonesian during the current COVID-19 pandemic is required to organize the learning process and use and select appropriate learning media. Teachers make efforts to meet these demands by developing competitive and comparative e-modules. E-modules can make it easier for teachers to understand in the making LMS using G-Suite. The development of this pdf e-module can improve Indonesian language media literacy. The e-module was developed using the Research and Development method. Based on the questionnaire results, it is known that scores of 60, 63, and 65 were achieved by one person or 1% each.**
Furthermore, as many as 13 persons or 18% got a score of 68, 14 persons or 20% got a score of 70, 11 persons or 16% got a score of 73, 9 persons or 13% got a score of 75, 11 persons or 16% got a score of 78, 8 persons or 11% got a score of 80, and 2 persons or 3% earned a score of 83. This shows that the development of the e-module for making LMS using G-Suite to improve Indonesian language media literacy got a good response from the teacher. In terms of the application's usability based on the SUS test, 73 was obtained. Based on material validation, media validation, and usability testing, the e-module for making LMS using G-Suite is a good category for being used as one of the supporting media in the Indonesian language learning process.

Keywords— **development, e-module, LMS, G-Suite, literacy**

I. Introduction

The current COVID-19 pandemic has an impact on the education sector. The students and teachers face various learning problems. This condition leads the teachers to motivate the students to increase the learning outcomes. Teachers are required to liven up the learning atmosphere in the classroom by leading to Active, Innovative, Creative, Effective, and Fun Learning (PAIKEM). The goal is that students feel happy to follow the lesson. This fun learning is expected to improve student learning outcomes at the end of the lesson.

Indonesian language teachers try to organize the learning process, use and choose the right learning media. The teachers must adjust the learning media as information technology in the learning process to students' interests in responding to technological advances. For this reason, teachers can use e-modules in the form of pdf. The physical structure of the e-module is very practical and easily accessible to teachers.

Electronic modules (e-modules) can be interpreted as presenting self-study materials that are systematically arranged into the smallest learning units to achieve certain learning objectives. This E-Module is presented in an electronic format so that the teacher is interactive with the program, equipped with the presentation of pictures and video tutorials [1]. The e-module is the latest innovation from the print module because the electronic module can be accessed with the help of a computer that has been integrated with software that supports accessing the e-module.

To assist the management of electronic learning, several LMS (Learning Management System) applications are generally used, such as Moodle, ATutor, Canvas, Open edX, and so on [2]. Another alternative is to use G-Suite. The advantages of the e-module for making LMS using G-Suite compared to the print module are its interactive nature, ease of navigation, display or load images and videos, and is equipped with quizzes that allow feedback.

Teachers make efforts by developing competitive and comparative e-modules. This e-module for making LMS using G-Suite makes it easier for teachers to understand and apply existing teaching materials to be included in the LMS. In addition, the development of e-modules in the form of pdf can improve Indonesian language media literacy.

This study aims to determine the process of developing learning media for e-modules for making LMS using G-Suite for Indonesian subjects and to improve Indonesian language media literacy. The e-module was developed in the form of a pdf using the Research and Development method. The results of material validation, media validation, and usability testing show that the e-module is in a good category to be used as one of the supporting media in the Indonesian language learning process.

In the e-module, the productivity of teaching materials produced will be included in the LMS. Even this e-module can create fun learning conditions and provide a meaningful learning experience. More importantly, making LMS using G-Suite can help teachers explain the Indonesian subject matter described. E-modules are also teaching materials that are arranged systematically and can coherently present material. In the E-modules, materials and practice questions make it easier for students to learn the material. Learning patterns can be student-centered. In this case, the teacher is a motivator to create a pleasant learning atmosphere and, in the end, will improve the quality of education.

To organize learning management, several LMS (Learning Management System) applications are used. Utilization of LMS by using Google Classroom, which has become part of the G-Suite for Education service provided by Google for educational institutions at the junior high school level.

The LMS application offers several facilities, namely access to learning materials, assignment assignments, task collection, discussion forums, announcements, making student progress reports, student seating arrangements, and recording student attendance.

Google Classroom is an easy-to-use Learning Management System (LMS) application. Some of the features that can be used in the classroom are 1) Class management, 2) Management of students and teachers, 3)Task and quiz management, 4) Announcement management, 4) Discussion management, 5). Material content management 6). Integration between classroom, drive, calendar, mobile applications, and so on. Based on these advantages, Google Classroom is suitable for online learning for Junior High school students in Banjarmasin City.

School email is an important means of official school communication. However, an integrated information technology-based education management system is needed to be more efficient in the teaching and learning process. An online learning system is required to make the teaching and learning process easier, more flexible, and can be carried out without limitations of space and time. One of the institutional management systems, integrated email, has many applications for online learning systems, and is free is the application system owned by Google.

Google provides the name of its integrated application service with the name G-Suite. G-Suite is an integrated system used for G-Mail email-based institutional management, which the users can also access with a mobile application. This application also has an LMS (Learning Management System) facility called Google Classroom.

To use G-Suite, it is necessary to set up an institutional email registered first for free with Google. After the school has a Google-based institutional email, the school will be able to take advantage of all the applications owned by G-Suite, such as Google Docs, Sheets, Forms, Drive, and Calendar, including Google Classroom for online learning.

Media literacy skills hone the ability to effectively and efficiently understand and use various forms of media communication. Media literacy is accessing and critically analyzing media messages and creating messages using media tools [3]. In addition, [4] describes media literacy as understanding the source, communication technology, code used, the message generated, selection, interpretation, and impact. Media literacy provides a framework for accessing, researching, evaluating, creating, and taking sections with messages in various forms from print to video to the internet.

[5] identifies five elements of media literacy/media literacy, namely: a) awareness of the impact of media on individuals and society, understanding of the mass communication process, c) developing strategies to analyze and discuss media messages, d) awareness of media content as a text that gives understanding to our culture and ourselves, and e) an enhanced sense of enjoyment, understanding, and appreciation of media content. The goals of media literacy include a) helping consumers to have sufficient knowledge and understanding of media content so that they can control the influence of media in their lives, b) protecting vulnerable and weak consumers against the impact of media penetration of new media culture, c) generating citizens who are "well informed" and can make an assessment of media content based on their knowledge and understanding of the media concerned [6].

II. RESEARCH METHODS

A. Development Model

The E-Module for making LMS using G-Suite was developed utilizing the R&D research method with the ADDIE model. The ADDIE model consists of 5 basic stages: analysis, design, development, implementation, and evaluation.

B. Data Collection Techniques

Data collection in this study used three techniques, namely: observation, interviews, and questionnaires. Observations were made during a meeting held by the MGMP. Interviews with 12 Indonesian language teachers who are members of the core structure of the Indonesian Language MGMP at the junior high school level in Banjarmasin City. Interviews were conducted using an interview guide that contained learning media, learning methods, and learning facilities. The results of the interviews were then taken into consideration in the media development process. Furthermore, the questionnaire was addressed to 71 Indonesian language teachers who are members of the Indonesian Language MGMP at the junior high school level in Banjarmasin City.

C. Usability Test

The usability test was conducted to measure the ease of making LMS e-modules using G-Suite in pdf form. The System Usability Scale (SUS) [7] [8] was developed by

Brooke [28] in 1996 to evaluate the system usability of a product or service, consisting of 15 questions based on Likert scale rules.

D. Design and Content Validation

Before implementing and using e-modules, the G-Suite LMS was validated twice to ensure the content and module design validity. Validation is needed to avoid misunderstanding concepts among teachers so that research results can be accepted academically.

III. RESULTS AND DISCUSSION

Development of e-module Making LMS using G-Suite in pdf form for poetry learning using the analysis, design, development, implementation, and evaluation (ADDIE) model is described below.

A. Analysis

In this analysis phase, the researchers attended a meeting held by the MGMP. Interviews were conducted with 12 Indonesian language teachers who are members of the core structure of the Indonesian Language MGMP at the junior high school level in Banjarmasin City. Furthermore, the questionnaire was addressed to 71 Indonesian language teachers who are members of the Indonesian Language MGMP at the junior high school level in Banjarmasin City. The analysis includes several aspects, namely learning media, learning methods, and learning facilities. Based on interviews, information was obtained that teachers used the lecture method assisted by power points, discussions using Whatsapp groups, learning media partially used YouTube, and network facilities were sometimes less stable.

B. Design

The next step is to design an e-module for LMS creation using G-Suite. This stage consists of developing assessment instruments and designing e-modules as follows:

- Making assessment instruments for e-modules. LMS development using G-Suite is formulated in the form of a questionnaire to test the feasibility of e-modules. This instrument aims to collect data from material experts, media experts, and teachers. This instrument uses a Likert scale reference which includes four categories, namely Very Good, Good, Bad, and Very Bad.
- The pdf e-module consists of two main menus, namely the cover and material, as shown in Figures 1 and 2.
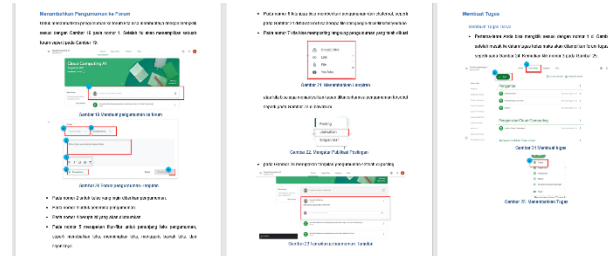

Fig. 1 Cover

Fig. 2 Material

C. Development

The next stage is the development stage consisting of material and media validation. Material and media validation is done by filling out a questionnaire consisting of 15 questions.

D. Implementation

After the validation stage is carried out, it is continued with the implementation stage. At this stage, the e-module was tested on 71 Indonesian language teachers who are members of the Indonesian Language MGMP at the junior high school level in Banjarmasin City. This stage aims to determine the results of using e-modules as a medium for learning Indonesian subjects. Teachers were asked to fill out a questionnaire consisting of 15 questions.

Image 2 shows the results of the questionnaire that has been responded to by 71 Indonesian language teachers.
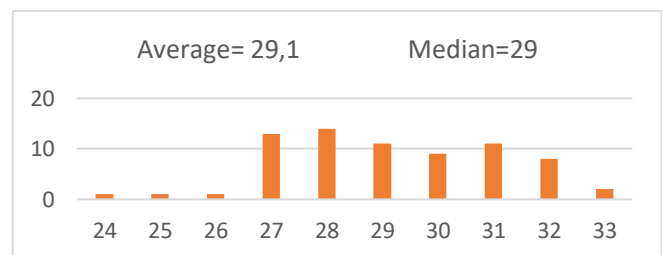
Fig 3. Questionnaire Results

Furthermore, the following table shows the results of the SUS test. The results of the SUS test were obtained from a questionnaire containing 15 questions, and 71 Indonesian language teachers had responded. The score obtained is then processed to get the overall system usability score multiplied by 2.5.

Table 1. SUS Test Results

NO	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	JML
1	2	3	2	3	4	2	2	4	3	2	3	3	4	3	2	42

| NO	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	JML
2	3	3	4	3	2	4	3	2	2	3	4	3	2	3	4	45
3	2	4	3	2	2	3	4	2	2	4	3	2	3	4	3	43
4	3	3	2	4	3	2	2	3	2	4	2	2	4	3	4	43
5	2	3	4	4	2	2	4	3	4	3	3	4	3	3	2	46
6	4	3	2	3	4	4	3	2	2	2	4	3	3	4	4	47
7	2	4	2	2	3	2	3	4	3	3	4	3	2	3	2	42
8	4	4	2	3	4	4	2	2	4	3	4	2	4	3	3	48
9	2	3	2	2	3	2	4	3	2	4	2	2	2	3	2	38
10	2	4	2	2	3	4	2	3	4	4	2	2	3	3	2	42
11	3	4	2	3	4	2	2	4	3	2	3	2	3	3	2	42
12	3	3	4	3	2	4	3	2	2	3	4	3	2	3	4	45
13	2	3	2	2	3	2	4	3	2	4	2	2	2	3	2	38
14	2	4	3	2	2	3	4	4	2	2	3	4	4	2	3	44
15	4	4	2	2	2	4	3	4	4	2	2	3	4	4	3	47
16	4	2	3	4	4	2	2	3	4	2	3	4	2	3	4	46
17	3	3	2	3	4	4	4	2	2	3	4	4	2	2	3	45
18	2	2	3	2	3	4	4	2	2	3	4	2	3	4	2	42
19	2	3	2	2	3	2	4	3	2	4	2	2	2	3	2	38
20	2	4	3	2	2	2	3	2	3	4	3	2	3	4	3	42
21	4	3	4	2	4	2	2	2	3	4	4	2	2	3	4	45
22	3	3	4	3	2	4	4	2	3	4	2	4	2	2	2	44
23	2	2	3	4	4	2	4	2	2	2	3	4	4	2	3	43
24	4	4	3	2	3	3	2	3	4	4	2	2	3	3	2	44
25	3	3	2	4	2	2	2	2	2	2	3	4	4	2	4	41
26	2	3	4	4	2	4	3	2	3	4	2	3	3	4	2	45
27	2	3	4	4	2	2	2	3	4	4	2	2	3	3	3	43
28	3	3	2	4	2	2	4	2	2	2	2	4	3	2	2	39
29	4	2	2	4	3	3	2	2	2	3	2	3	4	4	2	42
30	3	4	3	4	2	3	4	4	2	3	4	4	3	3	2	48
31	2	3	4	4	2	4	3	2	3	4	2	2	4	3	3	45
32	3	4	2	2	3	4	4	2	3	4	3	3	4	2	4	47
33	4	2	3	4	4	2	2	3	4	2	2	2	4	3	2	43
34	3	3	2	2	4	3	3	4	2	3	3	2	2	3	4	43
35	2	4	4	4	2	3	3	4	2	3	4	4	2	3	2	46
36	2	3	4	4	2	3	4	2	4	3	4	2	2	3	4	46

NO	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	JML
37	3	3	3	3	3	4	4	3	3	2	4	4	2	2	2	45
38	3	3	3	4	2	2	2	2	4	3	2	4	2	2	3	41
39	4	2	2	3	3	4	2	2	4	4	2	2	4	4	3	45
40	3	4	2	2	4	2	2	4	2	2	4	4	2	2	4	43
41	4	3	4	2	4	2	2	2	3	4	4	2	2	3	4	45
42	3	3	4	3	2	4	4	2	3	4	2	4	2	2	2	44
43	2	4	3	2	2	3	4	2	2	4	3	2	3	4	3	43
44	3	3	2	4	3	2	2	3	2	4	2	2	4	3	4	43
45	2	3	4	4	2	2	4	3	4	3	3	4	3	3	2	46
46	2	4	2	2	3	4	3	2	3	4	4	3	2	4	3	45
47	2	4	3	3	2	4	2	2	2	3	4	3	2	3	4	43
48	4	3	2	3	4	4	3	4	3	2	2	2	4	3	2	45
49	3	2	3	2	3	2	3	2	3	4	4	4	3	2	3	43
50	4	2	2	4	3	3	2	3	2	3	2	3	2	3	4	42
51	2	4	4	4	2	3	3	4	2	4	3	2	3	2	3	45
52	2	3	4	4	2	3	4	2	2	4	3	3	4	2	3	45
53	3	3	3	3	3	4	4	3	3	4	3	2	2	3	4	47
54	3	3	3	4	2	2	2	2	2	2	4	2	4	2	2	39
55	3	2	3	4	3	2	3	4	3	2	2	2	4	3	3	43
56	2	3	2	3	2	3	2	3	3	4	3	2	4	2	4	42
57	4	2	3	2	2	4	3	4	2	2	4	2	4	3	2	43
58	3	3	4	3	2	3	3	2	3	3	2	3	2	3	5	42
59	3	2	2	3	3	4	3	3	4	2	4	3	3	2	3	44
60	4	3	2	3	2	4	2	3	3	2	4	3	3	4	2	44
61	3	3	3	4	2	3	3	4	4	2	2	3	2	2	2	42
62	4	2	2	2	4	2	2	2	4	3	3	4	4	3	4	45
63	2	3	4	2	4	3	3	2	3	2	2	2	3	2	2	39
64	2	2	2	3	3	4	4	2	2	4	3	3	2	3	3	42
65	4	3	4	2	2	2	2	2	3	4	4	2	2	3	4	43
66	3	3	4	3	2	4	4	2	3	4	2	4	2	2	2	44
67	3	3	4	4	3	2	3	2	3	2	3	3	2	3	4	44
68	4	2	2	2	4	2	2	4	3	3	2	2	3	3	2	40
69	3	2	4	3	3	2	3	4	2	3	2	3	4	3	2	43
70	4	4	3	2	4	2	3	2	3	4	2	4	2	2	3	44
71	3	4	2	3	4	4	2	3	4	4	3	3	2	3	3	47

Based on the results of the SUS test above, it is known that each question in the questionnaire and each Indonesian language teacher showed various answers. Variations in the answers showed very good, good, and bad responses. However, none of the teachers gave a one or very bad response to the e-module. A clear picture of the questionnaire results from 71 teachers to the 15 questionnaire questions can be seen in the following graph.
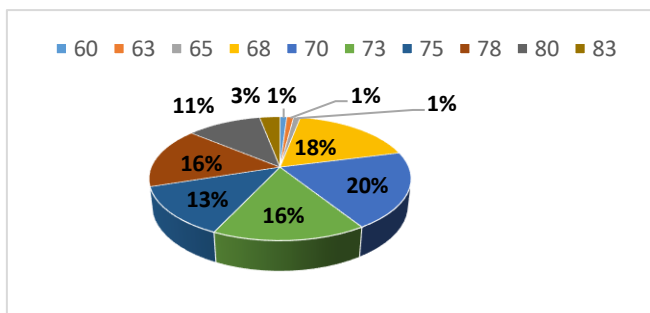
Graph 1. SUS Test Results

Based on the graph above, it is known that scores of 60, 63, and 65 were achieved by one person or 1% each. Furthermore, 13 persons or 18% got a score of 68, 14 persons or 20% got a score of 70, 11 persons or 16% got a score of 73, 9 persons or 13% got a score of 75, 11 persons or 16% got a score of 78, 8 persons or 11% got a score of 80, and 2 persons or 3% earned a score of 83. Thus, overall, the average obtained from the SUS test is 73. The following is the interpretation of the SUS test scores based on the criteria proposed by Bangor et al. (in Ika, Santoso, & Ferdinanda, 2015).

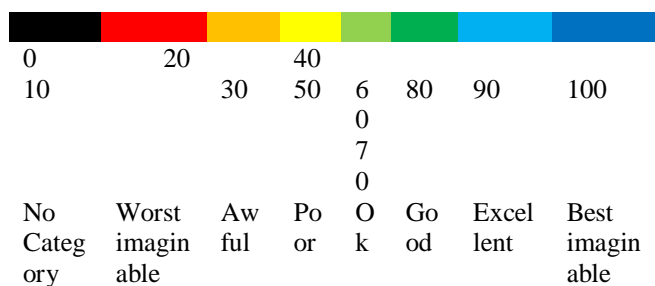|							
0 10	20	40 30	50	6 0 7 0	80	90	100
No Categ ory	Worst imagin able	Aw ful	Po or	O k	Go od	Excel lent	Best imagin able

Fig. 4. Interpretation of SUS Test Results

Based on the picture above, the results of the SUS test show that the e-module for making LMS with G-Suite is good for use in learning because it is in the Good criteria. [9] cite the opinion of Bangor et al., which states that the SUS test score is considered Good if it is worth more than 70.4. Therefore, this media is appropriate to use in learning. This result aligns with [10] opinion, which states that using the right media can be one solution in completing the right learning strategy. One of the suitable media in the current digitalization era is the e-learning module or e-module. E-module is a learning resource that is up to date following recent technological developments.

At the evaluation stage, the final revision of the e-module was carried out based on suggestions and input from the teachers involved in this study. The teacher suggested that improvements were needed so that the contents of the e-module were equipped with examples of LMS one teaching material in Indonesian subjects, and the cover design was made more attractive. The material for making LMS using G-Suite contained in the e-module follows the IT concept. Based on teacher validation and responses, this e-module provides appropriate learning media for Indonesian language subjects and can be used to improve media literacy. The findings in this study are relevant to previous studies regarding the development of making LMS using G-Suite to enhance media literacy [11] [12] [13] [14]

CONCLUSION

E-module Making LMS using G-Suite is a learning media developed through five stages: (1) The analysis phase includes several aspects, namely learning media, learning methods, and learning facilities. (2) The design phase involves developing an assessment instrument and designing an e-module with two main menus, namely the cover and material. (3) The development stage consists of material and media validation. (4) The e-module implementation phase was piloted to 71 Indonesian language teachers who are members of the Indonesian Language MGMP at the junior high school level in Banjarmasin City. (5) The evaluation stage is carried out with the final revision of the e-module based on suggestions and input from the teachers involved in this research. Next, compare the results of the testing phase, test usability, and conclude the feasibility of the application.

Based on the questionnaire results, it is known that scores of 60, 63, and 65 were achieved by one person or 1% each. Furthermore, as many as 13 persons or 18% got a score of 68, 14 persons or 20% got a score of 70, 11 persons or 16% got a score of 73, 9 persons or 13% got a score of 75, 11 persons or 16% got a score of 78, 8 persons or 11% got a score of 80, and 2 persons or 3% earned a score of 83. This shows that the development of the e-module for making LMS using G-Suite to improve Indonesian language media literacy got a good response from the teacher. In terms of the application's usability based on the SUS test, a score of 73 was obtained, which stated that this application was good (Bangor et al., 2009).

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