Qalamuna - Jurnal Pendidikan, Sosial, dan Agama | Vol. 14 No. 2 (2022)
685-704

DEVELOPMENT OF E-MODULES WITH ONLINE TESTS TO INCREASE STUDENTS' MOTIVATION AND LEARNING OUTCOMES IN CLASS XI

Syafrida Anggraini [1], Armiati [1]
[1] Universitas Negeri Padang 1, Indonesia
**Corresponding Address*: *syafridaagg@student.unp.ac.id*

Received: 29 August 2022 | Approved: 17 November 2022 | Published: 29 December 2022

Abstract: This study aims to develop an e-module learning media that contains online tests on the subject of Accounting Practicum in Service, Trade, and Manufacturing Companies for class XI Accounting. The method used is Research and Development using the ADDIE development model (Analyze, Design, Development, Implementation, Evaluation). Data collection techniques used interviews, questionnaires, and assessment of student learning outcomes in the form of tests. The data analysis technique used is quantitative descriptive. To find out the impact of e-module learning media containing online tests, an analysis was carried out by testing the hypothesis. The results showed that the development of e-modules containing online tests met the valid, practical, and effective criteria to increase student motivation and learning outcomes. The validation results from the experts stated that the e-module learning media containing online tests was valid with a valid assessment category. The practicality test conducted with teacher and student respondents showed that the e-module learning media containing online tests was practical to use. The results of testing the effectiveness of e-module learning media containing online tests showed a significant difference between the motivation and learning outcomes of students who studied using e-module learning media containing online tests and students who studied without using e-module learning media containing online tests.

Keywords: Learning Media, E-Modules, Online Tests, Learning Motivation, Learning Outcomes

INTRODUCTION

The learning process is an interaction between educators and students themselves; the learning process is also something that cannot be separated from the role of a teacher. In the learning process, an educator is required to be able to understand all the ways related to things to make it easier for students to understand learning material. Teachers have a strategic role in the learning process in class with students, so teachers are required to be able to design learning activities as well and as interesting as possible so that the learning process becomes a meaningful experience for students. According to Herly, (2019) said, learning that connects the core learning material with the student's environment will produce a learning process that is far more meaningful. This will help students understand the paradigm or concept in the lesson.

The research is based on Bruner's Constructivism theory. Constructivism theory emphasizes the active role of students in building understanding and understanding information or learning materials (Kukuh, 2021);(Sugrah, 2020). The learning process of constructivism is centered on students who are actively involved in constructing knowledge rather than passive students (Nasution, 2017). The main foundation in Bruner's theory is that the learning process is an active process in which students build ideas and ideas based on the knowledge they have before and at that time. In other words, the teacher must encourage students to discover the principles or concepts of learning itself. One of the things that the teacher must do is how to present learning material well to students.

Learning material is a form of teaching or learning substance that can assist teachers in teaching and learning activities (Mayasari et al., 2021). The material taught must also be material that can support the achievement of the quality of student learning. For this reason, educators must improve the quality of learning through predetermined teaching materials to provide a meaningful learning process for students. Improving the quality of learning in the educational process must align with developments in communication and information technology (Anih, 2016);(Effendi, 2019). Various developments in communication and information technology can support progress in education. One part that is inseparable from information and communication technology development is related to learning media (Megawaty et al., 2021). Learning media are all forms and ways of providing information used by learning theory to achieve learning outcomes by learning objectives.

Meaningful learning cannot be separated from the role of learning media as a learning resource for students. The use of learning media is a process that is inseparable from the learning process. The use of learning media can make the learning atmosphere that was initially unattractive become interesting. Learning media can convey messages and stimulate students' thoughts, feelings, and desires (Chumsukon, 2021);(Capuno et al., 2019). According to Ismara et al., (2021), Learning

materials can show facts, concepts, principles or procedures to make them more concrete. So, learning materials can offer a more real motivation and increase students' absorption and memory in the learning process. By using learning materials, it is hoped that the provision of learning materials can be more easily by students (Rahma, 2019). Learning media is adapted to the conditions of students and the material to be delivered.

One form of learning media is a module. According to Feriyanti (2019), the module is defined as the smallest teaching-learning unit which describes in detail the learning objectives of the subjects to be used as the basis for the process and teaching, the subject to be studied, the position the function of the module in the unit of the program the role of the teacher in the teaching-learning process, the and resources to be used, the learning activities that students must complete and internalize sequentially, students must complete worksheets, and the program to be implemented. The learning module is one media that students can use independently (Lestari et al., 2022). A good module should be systematically structured, attractive, and clear. Modules can be used according to student needs.

The development of technology and information is slowly starting to experience a transition from print media to digital media. Information originally only documented through print media has turned to electronic media as an alternative, including electronic media. In the world of education, there are lots of learning media. According to Taib and Mahmud (2021), Media can be grouped into four types: visual media, audio, audiovisual, and multimedia. One of the learning media that is quite interesting in today's era of technological development is e-modules. E-modules are a set of non-printed digital learning media that are systematically arranged and can be used independently by students to solve problems in their own way (Gufran & Mataya, 2020).

Several factors can influence a person's learning process. Support from various parties will encourage the success of one's learning process. According to Slameto (2013), many factors can be classified into internal and external. External factors influencing learning outcomes can be grouped into family, school, and community factors. School factors include teacher-student relations, student-student relations, discipline, learning, course standards above size, homework, construction conditions, and learning methods.

Researchers have conducted interviews with teachers from SMKN 1 Pulau Punjung; from the results, it can be concluded that SMK N 1 Pulau Punjung is currently carrying out a conventional learning process. The teacher explains the learning material using the lecture method and is accompanied by learning resources like printed books to support the learning process. Based on the class average score in the practice questions, it can be seen that student learning outcomes have yet to be maximized. This can be seen in the average student score, which is still around 70 and below.

Through this, it is also seen that many students need to meet the minimum completeness score. As in class X, AKL 2 averages below the minimum completeness score.

Learning motivation is needed to optimize learning outcomes because individuals will only carry out learning activities with motivation. Motivation is a driving force for students in carrying out learning activities. If students' motivation is high, the learning process will be followed by high curiosity, attention in the learning process, reading and looking for learning resources, and doing assignments on time. According to (Saputra et al., 2018), no one learns without motivation. It would be best if you had the motivation to have learning activities. Therefore, motivation is needed in learning activities as a driving force to carry out activities to achieve goals.

Prananda, G., & Hadiyanto (2019) reveal that motivation is the impetus contained in a person to try to make changes in behavior that are better in meeting their needs. According to Djamarah, motivation is an impulse that transforms one's inner energy into a tangible activity to achieve goals. From the opinion of the motivational experts above, it can be concluded that motivation is an encouragement or driving force to do something that arises from within to achieve a goal. Rofiatun Nisa' & Eli Fatmawati (2020) postulates that motivation plays a very important role in student development through the learning process. Motivation regarding the target will increase learning activities. If the goals are clear, learning will be more diligent, active, and enthusiastic.

Previous research on e-modules was conducted by Purwaningtyas et al. (2017). The product produced in this study is an electronic module with 8 PJOK materials, which are packaged as interactive media with online learning using the Edmodo application. Based on the research results, the product can answer the problem, namely the need for teaching materials, and help students with different learning characteristics learn. Widiana & Rosy (2021) attempt to develop E-modules. Developing E-Modules in office technology subjects is feasible, can increase learning motivation for students, and is very helpful when learning activities occur. Adhhan & Tanjung (2022) explore E-Modules development on Static Fluids for class X SMA/MA students. This research was motivated by the low student learning outcomes and student creativity in the learning process. The result of this research is the increase in student learning outcomes by using e-modules. Tania (2016), in her research entitled "Development of E-Module Teaching Materials as a Support for Learning the 2013 Curriculum on the Material of Adjustment Journal Entries for Class X Student Service Companies at SMK Negeri 1 Surabaya," stated that the developed e-module was suitable for use as teaching materials at the school. However, the e-module still needs to be more exciting and innovative because this e-module does not provoke students to be more creative and active in the learning process. Suppose the module has been loaded electronically. You should also load the online test in the e-

module. Electronic modules have more advantages than printed modules because they are more practical to carry anywhere. They are small and not heavy, use CDs, USB flash drives, or memory cards as their data storage medium and lower production costs. Hence, this is what makes this research different from previous research. According to Pagarra (2020), tests in online form provide the following advantages: 1) Teachers can prepare materials with higher quality as test material, 2) the test administration process will be standardized, and 3) they can monitor student motivation. This is in line with previous research regarding Online Tests conducted by Mastuti (2016) that there are advantages of online tests, including 1) students can see their test scores immediately, 2) Examiners do not need to make corrections manually or by scanning, 3) randomization of questions and the answer choices make it difficult for students to cooperate in completing tests so that cheating behavior can be avoided. The evaluation or test that the researcher will include in developing this e-module is expected to help students learn and evaluate themselves independently in the learning process whenever and wherever.

Therefore, the paper aims to develop an e-module learning media that contains online exam questions in the Accounting Practicum course in Service, Trade, and Manufacturing Companies for class XI Accounting to enhance student motivation and learning outcomes.

METHODS

The study employs research and development, oriented towards products developed in education. Sugiyono (2019) states that research and development is a process or method used to develop and validate products. The development model used by researchers is the ADDIE development model, which consists of five stages: analysis, design, development, implementation, and evaluation. Researchers use the ADDIE model because the development steps in this model are structured with systematic activities. Each phase is evaluated and revised from the stages passed to validate the resulting research product. This research was conducted at SMKN 1 Pulau Punjung and SMKN 2 Pariaman. The subjects of this study were students of Class XI Accounting at SMKN 1 Pulau Punjung and SMKN 2 Pariaman. As for the research instruments used from each stage, the researcher first conducted interviews with teachers and students for the preliminary research stage. Second, in the development stage of learning media, researchers use learning media validation instruments, which will be carried out with 6 (six) experts consisting of 2 (two) material experts, 2 (two) linguists, and 2 (two) media experts. Third is the implementation stage of learning media. At this stage, a trial is carried out on the e-module that has been made to find out the practicality of the e-module. This practicality instrument is given to students and teachers. In the Evaluation Stage,

experiments were carried out in two schools: SMKN 1 Pulau Punjung and SMKN 2 Pariaman. In each school, there was an experimental class and a control class. A two-way ANOVA test was carried out to see the evaluation results.

RESULTS AND DISCUSSIONS

Analysis

At the analysis stage, a needs analysis is carried out for E-Module learning media in Accounting for Service Companies, Trade, and Manufacturing. Needs analysis includes a) an analysis of problems that arise in learning activities, b) an analysis of the applicable curriculum, and c) an analysis of the characteristics of XI Accounting students at SMKN 1 Pulau Punjung.

Problem Analysis

The research data for this problem analysis were obtained from direct observations by researchers, teacher interviews, and student interviews. Problem analysis aims to collect about the learning activities carried out. This information is used as a basis for developing E-Module learning media. Based on the results of interviews with two teachers on the subject of accounting for service companies, trade, and manufacturing, the following data were obtained:

Table 1. Interview Results with Accounting Teachers

No.	Description
1	Question: What media do you use in Accounting for Service Companies, Trade, and Manufacturing during the learning process? Answer: Teacher: The media used are books, as well as student worksheets.
2	Question: What weaknesses or limitations did you find in the learning media you used? Answer: Teacher: The weakness of using books is that students sometimes need to bring books with them. This makes learning difficult because students need to have learning standards and be more active in reading.
3	Question: What kind of service, trade, and manufacturing company accounting subjects do you need to increase student motivation and learning outcomes for the subjects you teach? Answer: The learning media is in the form of videos because students are happy with seeing cell phones, so I think students will be happier with learning media using cell phones
4	Have you ever implemented learning with digital-based modules?

	Answer: It has not. During the COVID-19 pandemic, I only gave learning materials in PDF form, which I got online.
5	Question: Are you willing to apply learning using E-Module learning media? Answer: Of course, I am willing. Knowing this renewal in the learning process in class can make students more interested in learning.

Source: Interview with teachers at SMKN 1 Pulau Punjung in 2022

The results of interviews with these teachers show that there are still obstacles related to the learning media used during the learning process, such as students needing more motivation to learn the material using books and students' lack of motivation to learn. In providing material, the teacher said that he could use alternative media in the form of digital, which could be used via cell phones due to students' high habit. Based on interviews with teachers, researchers can say that learning materials from electronic modules may be the learning process because learning materials with electronics is developed as another alternative to provide learning materials that students can use due to the habits of people who use cell phones. It is hoped that students can read material on their mobile phones wherever they are.

Curriculum Analysis

Curriculum analysis is carried out so that the resulting e-module learning media is the accounting learning material for service, trade, and manufacturing companies in the applicable curriculum. The curriculum used as a reference in the development of learning media is the 2013 curriculum. The objectives of the curriculum include four aspects of competence, namely (1) aspects of spiritual attitude competence, (2) social attitudes, (3) knowledge, and (4) skills.

Spiritual Attitudinal Competence is expressed as "living and practicing the teachings of one's religion." In contrast, Social Attitudinal Competence is expressed as "living and practicing honest behavior, discipline, courtesy, caring (cooperation, cooperation, tolerance, peace), Demonstrate responsible, responsive, and proactive attitudes through exemplary ongoing consultation, reinforcement, adaptation, and adjustment, and demonstrate attitudes in addressing a variety of problems that interact effectively with society and the natural environment and position them as national Reflected in the World Commonwealth. These two competencies are achieved through indirect learning (indirect teaching), i.e., example, habit, and school culture, taking into account the specifics of the subject and the needs and conditions of the students.

Learning objectives are achieved through the learning process. Regarding the learning process, the government stipulates what the teacher must do before the learning process is complete. This is written in Permendikbud No. 65 of 2013. The government's supervision of higher education

institutions includes the planning of the learning process, the implementation of the learning process, the evaluation of learning outcomes, and the monitoring of the learning process. Planning of the learning process, including curriculum and learning implementation plans.

Analysis of Student Characteristics

The analysis of the characteristics of the students was carried out for an outline of the design of the product to be developed. Thus, the learning materials developed are based on the characteristics of the students. Based on the results of a questionnaire on students in class XI accounting, it can be said that the students who can quickly absorb the learning material are only about 30%. The remaining 70% need improvement and help absorb the learning material under study quickly. However, around 47% of students were ultimately able to make conclusions from each material that had been studied. From the results of the interviews, this was because they were working on practice questions and working with their friends during the learning process, which could support students' achievement in the ability to conclude learning material. Only 47% of students could explain and understand accounting concepts in their language. Still, around 60% of students read books that contain accounting knowledge. Still, the remaining nine people tend to read less or not even read books for several reasons, such as not having a book, or other reasons, such as feeling that reading about accounting is heavy because it contains numbers. From the interviews, all students liked the learning process in groups, and through this group learning process, 21 people, or 92% of students, could solve accounting questions. Analysis of student characteristics showed that students preferred the alternative to learning in small groups. Small group study allows students to collaborate in understanding the accounting study material, find new ideas through group discussions, and share information from the readings they understand.

Design

This stage is the second stage carried out by researchers in developing e-modules. The results obtained are as follows:

1. Determine the subjects developed in this research activity, namely the subjects of Practicum Accounting for Service, Trade and Manufacturing Companies
2. Develop learning tools
3. Compile learning material manuscripts in PDF format. The structure of the material used in the e-module is based on the syllabus for class XI in the 2013 curriculum. The material compiled by the researchers was collected from various references such as articles and printed books.
4. Designing e-module learning media to be developed

Development

The development stage consists of three activity steps: a) Developing e-modules using Canva that has been designed, b) Conducting validity tests on the media being developed, and c) Carrying out product revisions according to expert input. The researcher uses the Canva application to choose a template in this step. The researcher can choose the Design menu.

Figure 1. Selection of templates or designs for e-modules

At this stage, the researchers input the material into the design that has been selected and make edits according to the initial design that has been determined. At this stage, the researcher also chose several animations that could be used and inserted videos using the menu on Canva.

Test the Validity of the E-Module

The results of the expert's assessment are presented in a table that is made separately according to the assessment category. More details can be described as follows.

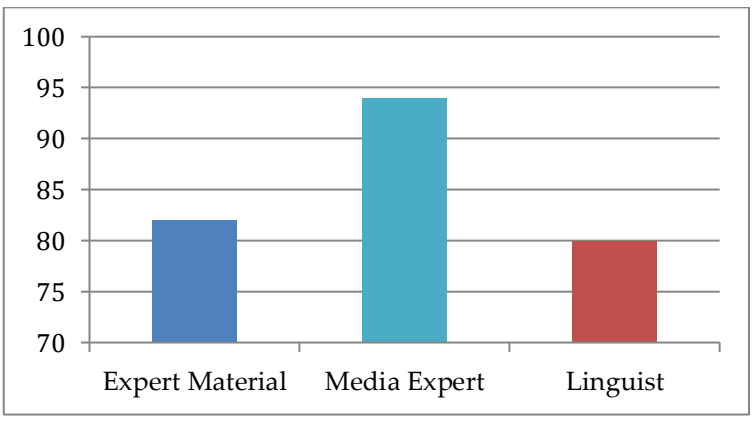

Figure 2. Expert Assessment Results

Implementation

At this stage, the researcher implemented the e-module in the learning process at school. Before implementation, the researcher made a Learning Implementation Plan (RPP), and the questions were tested for their validity level with small groups. The small group test item test involved 20 students from class XI Accounting 2 SMKN 1 Pulau Punjung. Trials were conducted to determine the level of validity of the questions. Then, the valid ones are used as the pretest and posttest.

This implementation phase is carried out through limited trials. Limited trials were conducted in class XI Accounting 2 SMKN 1 Pulau Punjung. At the trial stage, researchers used e-modules to assist students in obtaining learning materials and using the devices that had been prepared. E-modules are given to students as independent learning media and can be read repeatedly anywhere and anytime.

After the implementation phase, the student learning outcomes using the e-module increased; namely, the average pretest before using the e-module was 5.70, and after using the e-module, the average post-test for students was 7.20. After conducting a limited trial, the researchers also obtained the extent to which the teacher and students responded to the product made by the researcher. The teachers who participated in this limited trial were Ms. Santri Movva, S.Pd, and Mrs. Desnimar, S.Pd. The results of the trial can be seen in the following:

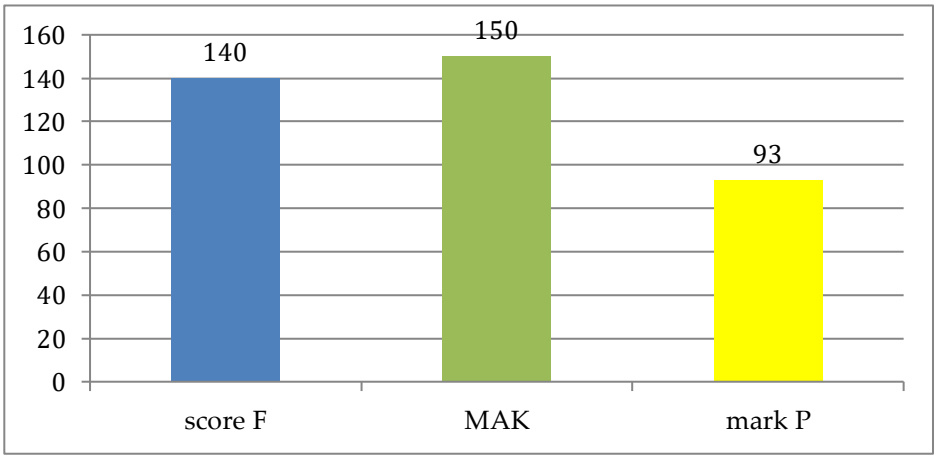

Figure 3. Results of the Teacher Trial

Based on the teacher trial table above, % a practicality value of 93% is obtained with a practicality level of "Very Practical." Furthermore, the researchers also took data on the practicality of the trials on 20 students at SMKN 1 Pulau Punjung. The results of the field trials can be seen in the following table:

Table 2. Field Trial Results (Students)

Obtained Score (F)	Maximum score	Final Score (P)	Interpretation
1277	1400	91%	Very Practical

Based on the test table for students, a practicality value of 91% is obtained with a practicality level of "Very Practical."

The practicality of E-module for subjects of Accounting Practicum for Service Companies, Trade, and Manufacturing

The practicality of e-modules for accounting practicum subjects in service, trade, and manufacturing companies is seen from the practicality of e-modules according to the teacher and practicality according to students. According to students, the following shows 26 e-module practicality data for accounting practicum subjects in service, trade, and manufacturing companies. Questionnaires were given to students in 2 (two) schools, namely at SMKN 2 Pariaman and SMKN 1 Pulau Punjung.

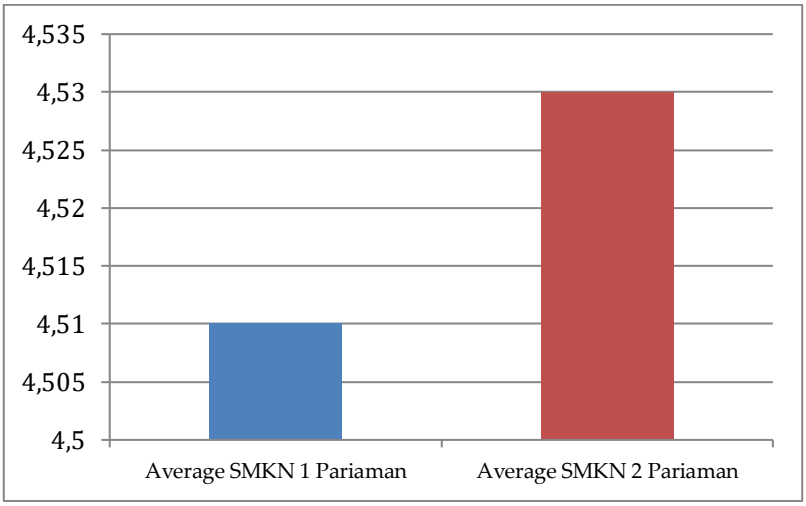

Figure 4. Practicality of e-module according to students

The average practicality test results by students at SMKN 1 Pulau Punjung and SMKN 2 Pariaman, with a percentage of 90%, are in the very practical category. Based on the results of the e-module practicality questionnaire recapitulation according to students, it can be concluded that students' assessment of practical e-modules is used in accounting practicum subjects in service, trade, and manufacturing companies.

The results of the e-module practicality test for accounting practicum subjects in service, trade, and manufacturing companies in terms of practicality according to teachers and practicality according to students show that the e-module is practical.

Effectiveness of E-modules for the subject of Practicum Accounting for Service Companies, Trade and Manufacturing

The pre-questionnaire shows students' initial motivation toward learning practical accounting for service, trade, and manufacturing companies. The results of grouping student learning motivation:

Table 3. Classification of Student Learning Motivation Pre-Questionnaire

No	School	Class	Mean	Total Number of Students		
				High Motivation	Moderate Motivation	Low Motivation
1	SMKN 2 Pariaman	Experiment	5,23	7	17	6
2	SMKN 1 Pulau Punjung	Experiment	5,37	4	21	5

Source: Results of Processed Primary Data for 2022

Post Motivation Questionnaire

The questionnaire (post) aims to see students' motivation after learning using e-modules. This post-questionnaire was given in the experimental class. In contrast, in the control class, the researcher only distributed one questionnaire, namely after the learning process, without providing the application of the e-module. The final motivational grouping results are as follows:

Table 4. Grouping of Student Motivation Post

No	School	Class	Mean	Total number of students		
				High Motivation	Moderate Motivation	Low Motivation
1	SMKN 2 Pariaman	Experiment	8,17	16	11	3
2	SMKN 2 Pariaman	Control	6,47	7	16	7
3	SMKN 1 Pulau Punjung	Experiment	7,90	13	12	5
4	SMKN 1 Pulau Punjung	Control	6,37	5	22	3

Source: Results of Processed Primary Data for 2022

Based on the data above, at SMKN 2 Pariaman in the experimental class, it can be seen that the number of students with high motivation is more than those with low motivation. The same thing also happened at SMKN 1 Pulau Punjung. Meanwhile, in the control class, the number of students with high motivation was less when compared to the experimental class.

Gains Motivation

Table 5. Gain of Student Learning Motivation

No	School	Class	Total number of students								
			High Motivation			Moderate Motivation			Low Motivation		
			Pre	Post	Gain	Pre	Post	Gain	Pre	Post	Gain
1	SMKN 2 Pariaman	Experiment	7	16	**9**	17	11	**-6**	6	3	**-3**
2	SMKN 1 Pulau Punjung	Experiment	4	13	**9**	21	12	**-9**	5	5	**0**

Source: Results of Processed Primary Data for 2022

Based on Table 5, regarding the gain of students' learning motivation, it can be seen that there is an increase in the number of students who have high motivation in the experimental class. At SMKN 2 Pariaman, the number of students with high motivation increased by 9 (nine) people; meanwhile, at SMKN 1 Pulau Punjung, the number of students with high motivation also increased by 9 (nine) people. Students with moderate motivation are decreasing at SMKN 2 Pariaman and SMKN 1 Pulau Punjung, respectively, with 6 and 9 students. This is directly proportional to the increase in students who have high motivation. On the other hand, there was a decrease in students who needed more motivation at SMKN 2 Pariaman 3 people. However, at SMKN 1 Pulau Punjung, the number of students with low motivation remained the same.

Discussion

Students are unique individuals with different traits, characters, and learning styles. Teachers have a tough task to provide meaningful learning to students with all this diversity. In this digital era, teachers must keep up with the rapid technological developments that continue to move towards practicality. Information originally documented, shared, or disseminated through printed paper has now turned into digital or electronic media. This shows that human life is increasingly leading to practicality. So, this is a new challenge for the world of education to choose the most effective learning media according to students.

There are various types of print media, one of which is a student learning module that can be transformed into a digital form known as an e-module. E-modules can reduce the use of paper amid the climate crisis that continues to threaten the world. In addition, e-modules can also contain text, video, audio, and even animation, which can be accessed via electronic devices such as laptops and

even smartphones, which can be accessed anytime and anywhere, so things can keep up with the pace of practical human needs in this era.

According to Muhson (2018), using media in learning can increase teacher access to new educational paradigms, such as learning and presenting information using different learning media. Researchers have developed an e-module that has been tested for validation and testing. Data was obtained from the validation and testing activities, which researchers then used to determine if the electronic modules were good quality and met the criteria for practicality and efficiency. Here is a more detailed description of each criterion:

The validity of the e-module in accounting practicum subjects in service, trade, and manufacturing companies

Experts first validated the initial e-module product developed by the researcher. Three types of experts are involved in assessing the products developed by researchers: material experts, linguists, and media experts. Each category has 2 (two) experts, so the total number of experts involved in testing product validity by experts is 6 (six) people.

Based on the data processing results based on an expert's assessment through a questionnaire given to the expert, the material in the category is quite valid. For media experts, it is very valid, while for language aspects, it is in the category it is quite valid. After the researchers made improvements according to expert input, the e-module for accounting subjects in service, trade, and manufacturing companies developed for class XI students was valid and suitable for learning activities.

The practicality of e-modules in accounting subjects in service, trade, and manufacturing companies

After the e-module product can be declared valid and feasible, the researcher continues to conduct trials on teachers and students. The “Very Practical” criteria were based on teacher and student assessments. Based on interviews with several students after the learning process was completed using the e-module, students expressed their satisfaction with the e-module being developed because they could open the e-module via their smartphone, so the practicality of the e-module product had been proven.

One of the functions of learning media, according to Aghni (2018), is a manipulative function, namely the ability of learning media to overcome the boundaries of space and time. Based on this, the function of e-modules as learning media has been fulfilled because e-modules can be read or accessed without space and time limits. In addition, e-module learning media can also attract and direct students' attention to focus on learning material. The benefits that can be felt when using

electronic modules as learning aids are the assimilation of material; learning is more active and time efficient, results in learning, learning is not limited by space-time, cultivates a positive attitude towards learning, the role of the teacher is more positive and increased productivity.

Judging from the teacher's response, based on the results of distributing questionnaires to the practicality assessment of the e-module, a score of 96% was obtained, which can be concluded that the e-module is very practical. After carrying out the experimental process in class, the researcher held discussions with subject teachers at related schools; first, the results of the researcher's discussion with subject teachers at SMKN 1 Pulau Punjung showed that previously, there were school rules not allowing students to bring smartphones to school, but because when research, schools allow students to bring smartphones, from the results of the researchers' monitoring, students are so interested and enthusiastic about using e-modules from smartphones. According to SMKN 1 Pulau Punjung teachers, they have yet to use digital-based learning media that can be accessed from smartphones; teachers only use learning media in the form of books and sometimes use Microsoft PowerPoint. This is sometimes rarely done due to the limited number of projectors.

Second, the researchers also discussed with teachers at SMKN 2 Pariaman; at SMKN 2 Pariaman, students can carry and access smartphones at school. However, during the research, the researchers found that some students were found to open other applications that were not related to the learning process. Then, the researchers discussed this with the teacher regarding the student's behavior before and whether students often did the same thing. From the discussion results, students often do this, secretly using smartphones and opening social media, disrupting the learning process. This will be noted in the long-term application of learning media such as e-modules accessed via smartphones.

The effectiveness of e-modules in accounting subjects in service, trade, and manufacturing companies

The effectiveness test is checked from the test of student learning outcomes in the experimental and control classes. Implementation was carried out in two schools, namely SMKN 1 Pulau Punjung and SMKN 2 Pariaman. The results of trials at SMKN 1 Pulau Punjung showed that the learning outcomes of students who studied using the e-module were higher than those of students who studied conventionally.

Based on data processing, the N Gain Score obtained an average gain of 0.62 and 0.55 for each of SMKN 2 Pariaman and SMKN 1 Pulau Punjung, so it can be concluded that the increase in student learning outcomes using e-modules is in the moderate classification. E-module learning media is effective in improving learning outcomes. With the increase in these learning outcomes, the e-module

is by the understanding of learning media according to Melawati (2019), who argues that learning media is an educational tool that is used as an intermediary by using display tools in the learning process to enhance the effectiveness and efficiency of achieving instructional goals, including tapes, audio, slides, videos, and so on. Improving student learning outcomes by using e-modules in this study aligns with research conducted by Lestari (2020), who concluded that e-modules are effective and successful in increasing student learning outcomes. Similar research was also conducted by Inanna et al. (2021), who concluded that what they had developed and the quizzes contained in one module were used electronically by distance learning. The results of the response questionnaire to this e-module received a positive response where students reported that a basic chemistry practicum e-module could increase students' knowledge regarding implementing practicum in the laboratory. However, it could only partially replace practicum directly. Based on the student's responses, it was found that the basic chemistry practicum e-module is classified as a good e-module to be used as a learning resource during a pandemic. In the future, this electronic-based module can be used to carry out online and offline processes. Based on the results of research measuring student motivation, the use of e-modules also increases student learning motivation; this can be seen from the increasing number of students who have high motivation in the experimental class, both at SMKN 1 Pulau Punjung and at SMKN 2 Pariaman. At SMKN 2 Pariaman, the number of students who had high motivation increased by 9 (nine) people. Meanwhile, at SMKN 1 Pulau Punjung, the number of highly motivated students also increased by 9 (nine) people. Students with moderate motivation are decreasing at SMKN 2 Pariaman and SMKN 1 Pulau Punjung, respectively, with 6 and 9 students. This is directly proportional to the increase in students who have high motivation. On the other hand, there was a decrease in students who needed more motivation at SMKN 2 Pariaman. Increased student motivation and learning outcomes occur because the e-module can be accessed and read flexibly, and students can read the learning material in the e-module relaxed outside the classroom without opening a book. This is also due to the habits of students who generally prefer practical things.

CONCLUSION

Can be concluded that the E-module for learning accounting for service, trade, and manufacturing companies has high validity. Second, the E-module for learning accounting for service, trade, and manufacturing companies. The resulting manufacturing has high practicality. Third, the E-module on learning accounting for service, trade, and manufacturing companies effectively increases student motivation and learning outcomes. The effectiveness observed in the implementation of learning is the aspect of knowledge. Based on the data analysis and discussion

results, it can be concluded that there are differences in the learning outcomes of students who use e-modules and those who do not use e-modules.

REFERENCES

Adhhan, M. F., & Tanjung, R. (2022). Pengembangan E-Modul Menggunakan Aplikasi Kvisoft Flipbook Maker Pada Materi Suhu dan Kalor Kelas XI SMA. Jurnal Ikatan Alumni Fisika, 8(2), 11.

Aghni, R. I. (2018). Fungsi Dan Jenis Media Pembelajaran Dalam Pembelajaran. Jurnal Pendidikan Akuntansi Indonesia, 16(1).

Anih, E. (2016). Modernisasi Pembelajaran Di Perguruan Tinggi Berbasis Teknologi Informasi Dan Komunikas. Jurnal Pendidikan UNSIKA, 4(2), 185–196.

Capuno, R., Revalde, H., Etcuban, J. O., Aventuna, M., Medio, G., & Demeterio, R. A. (2019). Facilitating Learning Mathematics Through the Use of Instructional Media. International Electronic Journal of Mathematics Education, 15(1), 677–688.

Chumsukon, M. (2021). Developing a Geography Curriculum Framework for Promoting Pre-Service Teachers' Creative Thinking Through Instructional Media Production. Journal of Education and Learning, 10(5), 197.

Effendi. (2019). Pemanfaatan Teknologi Dalam Proses Pembelajaran Menuju Pembelajaran Abad 21. Prosiding Seminar Nasional Pendidikan Program Pascasarjana Universitas Pgri Palembang, 125–129.

Feriyanti, N. (2019). Pengembangan e-modul matematika untuk siswa SD. Teknologi Pendidikan Dan Pembelajaran, 6(1), 1–12.

Gufran, G., & Mataya, I. (2020). Pemanfaatan E-Modul Berbasis Smartphone Sebagai Media Literasi Masyakarat. JISIP (Jurnal Ilmu Sosial Dan Pendidikan), 4(2).

Herly. (2019). Penerapan Teori Belajar Sosial Albert Bandura Dalam Proses Belajar Mengajar Di Sekolah. KENOSIS: Jurnal Kajian Teologi, 4(2), 186–202.

Inanna, Nurjannah, Ampa, A. T., & Nurdiana. (2021). Modul Elektronik (E-Modul) Sebagai Media Pembelajaran Jarak Jauh. Seminar Nasional Lembaga Penelitian Dan Pengabdian Kepada Masyarakat Universitas Negeri Makassar.

Ismara, K. I., Suharjono, A., & Supriadi, D. (2021). Ubiquitous learning in occupational health and safety for vocational education. International Journal of Evaluation and Research in Education, 10(1), 285–292.

Kukuh, N. (2021). Teori Belajar Konstruktivisme dan Implikasinya dalam Pendidikan. GHAITSA: Islamic Education Journal, 2(1), 49–57.

Lestari. (2020). Pengembangan E-Modul IPA Bermuatan Tes Online untuk Meningkatkan Hasil Belajar. Journal of Education Technology, 4(1), 73–79.

Lestari, E., Nulhakim, L., & Indah Suryani, D. (2022). Pengembangan E-modul Berbasis Flip Pdf Professional Tema Global Warming Sebagai Sumber Belajar Mandiri Siswa Kelas VII. PENDIPA Journal of Science Education, 6(2), 338–345.

Mayasari, A., Pujasari, W., Ulfah, U., & Arifudin, O. (2021). Pengaruh Media Visual Pada Materi Pembelajaran Terhadap Motivasi Belajar Peserta Didik. Jurnal Tahsinia, 2(2), 173–179.

Megawaty, D. A., Damayanti, D., Assubhi, Z. S., & Assuja, M. A. (2021). Aplikasi Permainan Sebagai Media Pembelajaran Peta Dan Budaya Sumatera Untuk Siswa Sekolah Dasar. Jurnal Komputasi, 9(1), 58–66.

Melawati. (2019). Implementasi Media Pembelajaran Audio Visual Pada Sekolah SMP AL-Munib. Prosiding Seminar Nasional Pendidikan FKIP, 2(1), 154–160.

Muhson, A. (2018). Pengembangan Media Pembelajaran Berbasis Teknologi Informasi. Jurnal Pendidikan Akuntansi Indonesia, 8(2).

Nasution. (2017). Penerapan Model Pembelajaran Berbasis Masalah (Problem Based Learning) Terhadap Kemampuan Berpikir Kreatif Matematika Siswa Nurul Rafiqah Nasution 1 , Edy Surya 2. Jurnal. Mahasiswa Pps Jurusan Pendidikan Matematika, Unimed., 4(1), 2.

Pagarra. (2020). Peningkatan Kompetensi Guru Dalam Mengevaluasi Pembelajaran Daring Menggunakan Aplikasi Berbasis Tes dan Penugasan Online. Publikasi Pendidikan: Jurnal Pemikiran, Penelitian, Dan Pengabdian Kepada Masyarakat Bidang Pendidikan, 10(3), 260–265. https://ojs.unm.ac.id/pubpend/article/view/16069

Prananda, G., & Hadiyanto, H. (2019). Korelasi antara Motivasi Belajar dengan Hasil Belajar Siswa dalam Pembelajaran IPA di Sekolah Dasar. Jurnal Basicedu, 3(3), 450107.

Purwaningtyas, Dwiyogo, W. D., & Hariyadi, I. (2017). Pengembangan Modul Elektronik Mata Pelajaran Pendidikan Jasmani, Olahraga, Dan Kesehatan Kelas XI Berbasis Online Dengan Program Edmodo. Jurnal Pendidikan, 2(1), 121–129.

Rahma, F. I. (2019). Langkah-langkah Pemilihan Media dan Implementasinya dalam Pembelajaran bagi Anak Sekolah Dasar. Jurnal Studi Islam, 14(2), 87–99.

Rofiatun Nisa', & Eli Fatmawati. (2020). Kerjasama Orang Tua dan Guru dalam Meningkatkan Motivasi Belajar Peserta Didik. Ibtida', 1(2), 135–150.

Saputra, H. D., Ismet, F., & Andrizal, A. (2018). Pengaruh Motivasi Terhadap Hasil Belajar Siswa SMK. INVOTEK: Jurnal Inovasi Vokasional Dan Teknologi, 18(1), 25–30.

Slameto. (2013). Belajar dan Faktor-Faktor yang Mempengaruhinya. In Jakarta: PT. Rineka Cipta.

Sugiyono. (2019). Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R&D. In Bandung: Alfabeta.

Sugrah, N. U. (2020). Implementasi teori belajar konstruktivisme dalam pembelajaran sains. Humanika, 19(2), 121–138.

Taib, B., & Mahmud, N. (2021). Analisis Kompetensi Guru PAUD dalam Membuat Media Video Pembelajaran. Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini, 6(3), 1799–1810.

Tania, L. (2016). Pengembangan Bahan Ajar E-Modul Sebagai Pendukung Pembelajaran Kurikulum 2013 Pada Materi Ayat Jurnal Penyesuaian Perusahaan Jasa Siswa Kelas X Akuntansi Smk Negeri 1 Surabaya. Ayat Jurnal, 3(1), 1–9.

Widiana, F. H., & Rosy, B. (2021). Pengembangan E-Modul Berbasis Flipbook Maker pada Mata Pelajaran Teknologi Perkantoran. Edukatif : Jurnal Ilmu Pendidikan, 3(6), 3728–3739.