



The Development of Problem-Based Learning E-Modules on Correspondence Materials

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ABSTRAK

Riset ini memiliki tujuan untuk mengembangkan bahan ajar berupa E-modul berbasis Problem Based Learning (PBL) pada materi persuratan untuk membantu proses pembelajaran di SMKN Mojoagung kelas X OTKP. Riset ini menggunakan R&D dengan model 4D yaitu Define, Design, Develop, tetapi tidak sampai Disseminate karena keterbatasan waktu dan biaya. Teknik analisis data menggunakan kuantitatif dan kualitatif. Terdapat 20 responden yaitu siswa kelas X OTKP 3. Produk dari riset pengembangan ini diuji oleh ahli materi, media, dan bahasa. Dari hasil validasi diketahui bahwa kelayakan materi dari validasi ahli materi sebesar 90 persen, validasi ahli grafis 96,3 persen, dan validasi ahli bahasa 80 persen. Dari hasil validasi ketiga validator tersebut diperoleh rata-rata sebesar 88,7 persen dengan kategori sangat layak. Hasil respons siswa memperoleh rata-rata sebesar 78,8 persen dengan kategori positif di mana dapat dinyatakan bahwa E-modul ini dapat digunakan untuk menunjang pembelajaran materi persuratan.

ABSTRACT

This research aims to develop teaching materials in the form of Problem-Based Learning (PBL) E-modules on correspondence materials to assist the learning process at SMKN Mojoagung class X OTKP. This research uses R&D with a 4D model, namely Define, Design, Develop, but did not reach Disseminate due to time and cost limitations. Data analysis techniques use quantitative and qualitative. Twenty respondents, namely students of class X OTKP 3, participated in the study. The product of this research was validated by materials, media, and language experts. The results reveal that the feasibility of the product from the materials expert was 90 percent; from graphic expert was 96.3 percent; and from linguist expert was 80 percent. From these results, it obtains an average of 88.7 percent with a very decent category. The results of student responses obtain an average of 78.8 percent with a positive category. So, it is concluded that this E-module can be used to support learning correspondence materials.

INTRODUCTION

One of the impacts of the COVID-19 outbreak in education is the change in online learning policies or online learning to reduce the spread of the COVID-19 virus ((Goldschmidt, 2020). COVID-19 impacts student education because it can interfere with specific learning goals and student goals in disciplines (Zolotov et al., 2022). Without a doubt, this brings a tremendous change for teachers and students using technology. Teaching and learning have greatly improved with the use of the internet in learning through online platforms because it uses computers and technology in an online learning environment (Mingfang & Qi, 2018). Teachers must be able to adapt to develop technology-based teaching material products. The quality of education must be compromised because there has been a drastic change, namely the implementation of distance learning using digital platforms (Hsu et al., 2019). These sudden changes require different skills from educators because educators require technology to conduct distance learning. Distance learning demonstrates the delivery of instructional instruction using the information and communication technology (ICT) that keeps the distance between students and teachers (Gray & Diloreto, 2016). Teachers must have an excellent understanding of how to make students understand any given learning material. The way that can be used by teachers so that learning becomes effective and attracts students' attention is by making innovative teaching materials. The creation of teaching materials created by educators must be adapted to today's online learning needs so that students can quickly learn anywhere and anytime, and the teaching materials are efficient for students. Teaching materials are a systematic collection of written and unwritten materials intended to create an environment that allows students to learn (Desyandri, 2021). Teaching materials can be used as learning evaluations and guidelines for students and teachers.

Electronic modules are teaching materials that can help teachers make teaching more accessible and increase student interest in learning. According to Wibowo & Pratiwi (2018), the module is an educational resource developed methodically using language that is easy to understand, and students can study independently without much help from the teacher. However, electronic modules are used more than printed modules as teaching tools. Electronic modules are teaching materials prepared to be used independently by students, whereas the E-module shows how to use them for self-study (Rahmi, 2018). Based on the research conducted by Aryanti & Arief (2021), E-module flipbook based on archival subjects can make learning outcomes increase. E-module is presented in a beautiful form using communicative language and equipped with pictures and materials so students can quickly learn from anywhere using a smartphone. Flipbook is an application to create E-modules, E-books, and the like. The use of flipbooks provides innovation in the world of education. Flipbook can improve student understanding and learning outcomes and increase student interest in learning. Several types of flipbooks include Ubisoft flipbook maker, Professional PDF flipbook, and corporate flipbooks.

From October 25, 2021, to November 19, 2021, researchers conducted teaching and learning observations on Archival subjects at SMAN Mojoagung class X OTKP 3, where the observation results were the learning process carried out online and offline. The researcher made observations by interviewing the Archives subject teacher and students directly at school. The results unveiled that during learning, the teacher used teaching materials in the form of power points files containing material that is packaged in the form of word and pdf. Teachers had not innovated teaching materials tailored to the needs of online learning, so this was very unfortunate. Teachers do not take advantage of technological developments in online education today.

In Archiving Subjects, especially correspondence materials, namely basic competence (henceforth, KD) 3.4 about implementing incoming mail management and KD 3.5 about implementing outgoing mail management in class X OTKP 3 SMKN Mojoagung, teaching materials are essential to support more accessible, more practical, and more exciting learning such as the use of e-mail. Module with the help of a flipbook can be beneficial to create more creative and innovative teaching. Initially, teachers at SMKN Mojoagung only sent material in the form of word, pdf, and PowerPoint. In KD 3.4 and KD 3.5, teaching materials help students understand how to manage incoming and outgoing letters properly. The KD 3.4 and KD 3.5 materials can later be used and applied when students work in the company's administration or secretarial department.

Therefore, the researchers chose KD 3.4 and KD 3.5 materials for further research and made an innovative teaching material produced from these materials. It is hoped that later on, with this research, teachers can take advantage of the products developed by researchers to assist learning activities and can also be helpful for students to make it easier for students to understand the material in applying incoming and outgoing mail management. Students need materials for more creative and innovative teaching to make their enthusiasm for learning grow.

According to Supriadi (2016), learning using teaching materials can positively impact students. One form of developing teaching materials is in the form of an E-module with the help of a flipbook. Undoubtedly, researchers chose to use flipbook-assisted E-modules because the flipbook-assisted E-module teaching materials are a means that can make students interested in participating in learning activities because apart from being able to insert images into the E-module, teachers can also include video and audio in the E-module. The choice of E-module is also because it can make its use more practical. Then, the researchers chose to use flipbooks because flipbooks can make E-modules look more creative and innovative. In addition, flipbooks can make it easier for students to increase their understanding of a problem that cannot be presented in a class (Andarini & Masykuri, 2013). Students' encouragement, interest, and learning activities by utilizing flipbook-assisted teaching materials can increase. This flipbook-assisted E-module uses a mobile phone as the medium (Sugianto et al., 2017). Using mobile phones will make it easier for students to access the material in the E-module and the teacher only becomes a facilitator to explain the materials that students do not understand. From the survey results in the field, 100% of students at SMKN Mojoagung already have mobile phones. Mobile phone is the medium they use to participate in online learning at home.

The critical thinking of students and analysts at SMKN Mojoagung is still lacking. From the observations, many students are still less able to solve problems when the teacher asks a question in the form of a case study. They do not understand how the case should be resolved and implemented in daily activities. This certainly can encourage research to develop E-modules assisted by flipbooks based on Problem Based Learning (PBL).

Problem-based learning is activities from everyday life that lead to problems in the scenario (Balim et al., 2016). PBL is a student-centered learning method aiming to develop problem-solving skills through independent learning and teamwork (Ali, 2019). Students are encouraged to think deeply with analysis to find the appropriate and appropriate learning resources. A teacher's main task is to create a learning atmosphere that encourages students to participate in learning activities. So educators must have new ideas in developing a teaching material that is adapted to current needs, and teachers must be able to make students more active to think critically to solve a problem in the life around them. In previous research conducted by Farenta & Setyosari (2016), it is proven that the use of the problem-based learning model is a practical learning media. Further research by Serevina & Sari (2018) shows that PBL can improve students' science process skills. In line with this, Widiawati, et al. (2018) argued that it is proven that students who use the PBL model approach, which includes the development of 4C abilities, are better than those who use the Think-Pair-Share approach. Furthermore, previous research conducted by Susanto (2020) showed a high level of effectiveness of 96% in application Small Group Discussion method with Problem Based Learning (PBL) model.

Then the research conducted by Sofyan & Komariah (2016) shows that most teachers say the PBL learning model is feasible to be implemented in every subject in the 2013 Curriculum. Research from (Triwahyuningtyas et al., 2020) also stated that the use of the E-module with the PBL model is declared feasible to be used in learning. Therefore, this learning model selected by the researcher. to support success in research on the development of E-modules based on Problem Based Learning on correspondence material. Development E-module teaching materials has been done by previous researchers some of them shows the results that the E-module development that has been carried out has obtained a very feasible category from the validators and also from student responses (Ismiarti & Nikmah, 2021). Based on research which is conducted by Wulandari et al. (2021), the research stated that the results of developing E-module teaching materials app assisted flip pdf builder based on contextual teaching and learning what has been done has met the criteria of being very valid, very practical, and very

effective so that it is expected to increase student understanding and become an attraction for students. Other research conducted by Wibowo & Pratiwi (2018) show that E-module development obtained an average score 3.64 and 3.49 with exciting criteria so that it can be declared feasible to be used in learning mathematics material set. Research conducted by Fahrezi & Susanti (2021) shows that the results of developing teaching materials with flip books are declared valid and included in the very feasible category of three expert validators, and the results of student responses to educational materials are interpreted very well and can be used in learning activities. Furthermore, previous research on the development of interactive E-modules showed that the average feasibility results obtained 96.84% in the very feasible category (Retnosari & Hakim, 2021). Based on the results of these studies, it can be concluded that using E-modules is the right choice and is feasible to use as teaching materials where it can make learning easier.

From the description above, the objectives of this research are to answers these research questions: (1) how is the process of developing an E-module based on Problem Based Learning (PBL) on the correspondence material intended for class X OTKP 3 SMKN Mojoagung? (2) how is the feasibility of E-module based on Problem Based Learning (PBL) in correspondence materials? and (3) how are students' responses to E-modules based on Problem Based Learning (PBL) on correspondence material? The difference from previous research is that the researcher uses two KDs, namely KD 3.4 for implementing incoming mail management and KD 3.5 for implementing outgoing mail management. This research uses a corporate PDF flipbook; in the E-module is a barcode that connects to a youtube video about writing learning letter disposition and control card, and apart from an interesting image by the illustrator, the flipbook has an audio of the researcher explaining the instructions for using the module and music that accompanies the reader later.

METHOD

This research belongs to R&D (Research and Development). R&D research is a form of a study conducted to develop a product and assess its applicability (Sugiyono, 2015). The development model of this research is a 4D development model, which includes definition, design, development, and dissemination (Figure 1). The 4D development model was chosen because the 4D model is arranged systematically to deal with learning problem-solving. This research did not reach the disseminate stage because the developed E-module was only limited to Archival Subjects, especially KD 3.4 and KD 3.5, namely the material for implementing incoming mail management and implementing outgoing mail management as well as limitations in distribution.

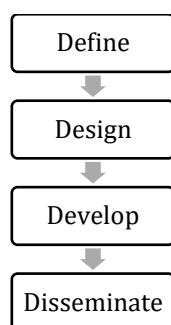


Figure 1. Development stage

The research focus on PBL-based E-modules for archiving correspondence materials or implementing incoming and outgoing mail management. Research time began in November 2021. The target of the research and limited product testing is class X OTKP 3 SMKN Mojoagung. Before being tested on students, the product must be validated by a graphic expert, material expert, and linguist. After being declared eligible by the validator, the product is ready to be tested on students. A test taken by twenty students was done to measure the student's response. According

to (Sadiman, 2014), if the number of respondents is less than 10, the data obtained is insufficient, and if the number of respondents is greater than 20, the data obtained is redundant. The research instrument used expert validation sheets and student response questionnaires. Data analysis techniques used in this research are qualitative as well as quantitative. Qualitative data were from the comments of validators, namely graphic experts, media experts, and linguists. The quantitative data were from the results of development data. E-module teaching materials assisted by a corporate PDF flipbook taken from the results of the validator's assessment and also student responses. The data were then analyzed, and the results were used to improve teaching materials developed. The evaluation of the E-module validation sheet assisted by a PDF corporate flipbook uses a Likert scale. Meanwhile, the student response questionnaire sheet using the Guttman scale. The following formula was used to calculate and analyze the results of expert's validation:

$$\text{Percentage} = \frac{\text{Number of values}}{\text{maximum number of values}} \times 100\% \quad (1)$$

Table 1. Interpretation expert validation score with likert scale.

Percentage	Criterion
0% - 20%	Very unfeasible
20% - 40%	Not feasible
40% - 60%	Enough Feasible
60% - 80%	Feasible
80% - 100%	Very Feasible

The resulting teaching materials will get a proper or very feasible interpretation if all experts components of the feasibility assessment get an average percentage of > 61 percent (Table 1). The following is a table of rating scales for student response questionnaires. The resulting E-module teaching materials get a good or very positive predicate if all the assessment components in the student response questionnaire get an average percentage of >70% (Table 2).

Table 2. Interpretation of student response questionnaire scores with a scale guttman.

Percentage	Criterion
85% - 100%	Very positive
70% - 85%	Positive
50% - 70%	Not enough positive
0% - 50%	Not positive

Source: Risandi in Jannah & Pahlevi (2020)

RESULT

Development *e-module* based on problem based learning (PBL) on correspondence materials

There are only three stages in this development process, namely the define, design, and development stages, without disseminate. The following is an explanation of the three 4D stages carried out by researchers.

Defining stage (define)

From the results of the needs analysis at SMKN Mojoagung, teachers need an E-module teaching material to make learning more enjoyable. During the learning process, the teacher has never implemented and used an E-module assisted by a flipbook, especially a corporate PDF flipbook in the archiving subject of correspondence, which is about implementing the management of incoming and outgoing letters. The teacher exclusively uses textbooks in class, sends information in the form of word files, and uses Google Classroom and Whatsapp for communication. The provision of unorganized material makes students disinclined to prepare unorganized material files, making them reluctant to store files of the material provided by the teacher in such a way that it impacts student interest and learning outcomes. From the interview results with the students, they needed teaching materials that can provide enthusiasm for

learning during online learning. Even if they study and practice at home, students can learn independently and understand the subjects delivered by the teacher.

From the analysis of student's needs, it can be concluded that students need vibrant teaching materials so that during online learning, students do not get bored quickly. The materials of incoming and outgoing letters was chosen because the materials require teaching material to make students more interested in learning. Therefore, the E-module research assisted by a flipbook contains not only written materials but also audio, video, barcode, and images that can attract students to read the material in the E-module.

Design stage (design)

After completing the preliminary research, the next step is to design PBL-based E-modules on correspondence materials. This E-module consist of cover, preface, table of contents, introduction, selected essential competencies, learning objectives, instructions for using the E-module, material for applying incoming mail management, material for applying outgoing mail management, multiple choice questions, essays, answer keys, skill questions, glossary, and bibliography. The differences in the design of this research module from that of the previous research are that this module: (1) provides a barcode connected to youtube videos about making letter dispositions and control cards; (2) provides audio in the form of music and audio of the researcher's voice explaining the introduction and instructions for using the E-module; (3) and covers 2 competences, namely competence 3.4 of applying the management of incoming mail and competence 3.5 of applying the management of outgoing mail. Researchers use corporate PDF flipbooks to make teaching materials more gripping. While previous research conducted by Wulandari et al. (2021) and research by Oktaviara & Pahlevi (2019) only used 1 basic competence.

Figure 2 shows the front page of the developed E-module. The cover in the E-module is made as attractive as possible to attract students' interest in learning the contents of the E-module. Figure 3 shows the display of the material present in the E-module. There are barcodes, illustrative images and also audio in it. Figure 3 shows that there is material in the form of videos that can be studied in the module. So, in addition to barcodes and audio, videos are also added in the E-module so that learning is more compelling for students.



Figure 2. Display of material content



Figure 3. Material in the form of videos

Development stage (develop)

In this stage, the feasibility of using E-modules in learning materials to apply incoming and outgoing letters with the help of a corporate PDF flipbook is known. After that, the researcher revised the teaching materials that had been assessed and included the input from experts in the comments column of the validation sheet. Then, the validation result was analyzed to obtain the percentage of feasibility. Table 3 shows the results of the comments column contained in the expert validation sheet:

Table 3. The results of the study from experts

Validators	Commentary
Media experts	Teaching materials are very feasible and can be continued.
Linguists	In general, the model is good, but it is necessary to pay attention to punctuation, writing a table of contents, and writing a bibliography
Material expert	Immediately to be completed at the next stage.

Eligibility of e-module development

The feasibility of E-modules based on Problem Based Learning (PBL) in the correspondence material can be seen from the results of the validation carried out by materials experts, media experts, and linguists. The Archival subject teacher validated the feasibility of the material at SMKN Mojoagung. The feasibility of the language was carried out by the Indonesian language teacher of SMKN Mojoagung. The graphic feasibility was validated by a lecturer at the Faculty of Economics and Business, State University of Surabaya. Table 4 shows the final average score of E-module eligibility by material experts, graphic experts, and linguist.

Table 4. E-module feasibility validation results

Aspects	Interpretation	Categories/ Classifications
Material Expert	90%	Very Feasible
Media Expert	96,3%	Very Feasible
Linguist	80%	Very Feasible
Average E-module eligibility	88,7%	Very Feasible

From the results of the validator's assessment of the E-module, it can be seen that the feasibility of the material, graphic, and language components of the overall material obtained an average of 88.7%, which categorized "very feasible". After the module was declared feasible, the next step was conducting trials to measure students' responses. Meanwhile, previous research by Meidita & Susilowibowo (2021) obtained an average of 89.10% with very high criteria, while Widiana & Rosy (2021) reported that e-module development based on flipbook maker in office technology subjects obtained an average of 88.33% by the three validators.

Student responses to e-modules

After knowing the results of the graphic, material, and language expert validators, the next step was distributing questionnaires to class X OTKP 3 SMKN Mojoagung. Based on the questionnaire distributed to 20 students, from the 12 items validated, the score of 78.8% was obtained. So, the student's response belongs to the positive category. The following is a calculation of the results of the student responses consisting of 3 indicators:

Perception

In this indicator, as shown in the [Figure 4](#) students answered "Yes" was 84% in the sense of agreeing, and 14% in the sense of disagreeing.

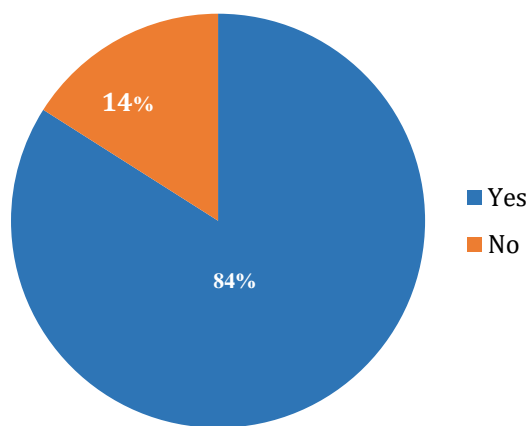


Figure 4. Results of perception indicators

Attitude

Based on the [Figure 5](#), it is known that 87.5% of students answered "Yes" as a sign of agreement, and 12.5% answered "No" as a sign of disagreement.

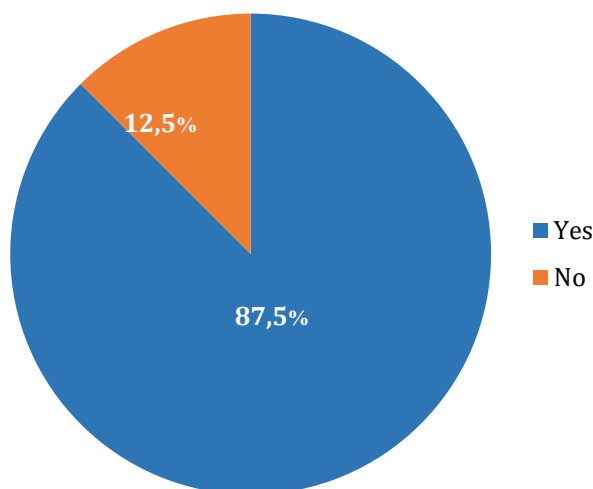


Figure 5. Results of attitude indicators

Actions related to the attitude object

Finally, there are indicators of actions related to attitude objects. The researchers wanted to know whether the students wanted to try the product and how students tend to use the E-module. The 65% of students answered "Yes" as a sign of agreement, and 35% answered "No" as a sign of disagreement (Figure 6).

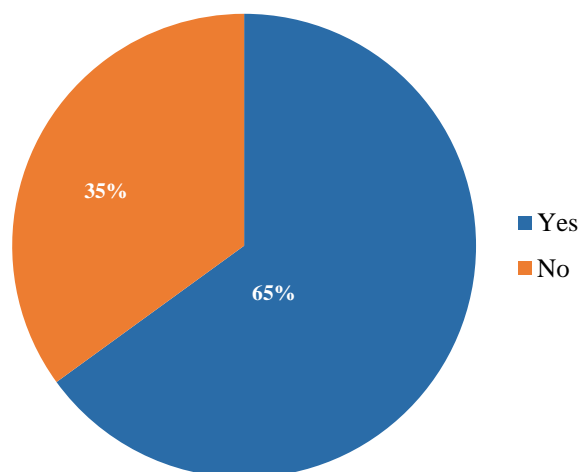


Figure 6. The results of the indicator of the action of the object of attitude

From the three aspects or indicators above, it can be seen the average result of student responses to the use of Problem Based Learning (PBL)-based E-modules in correspondence material. The results show a percentage of 78.8% with a positive category, indicating that this E-module development product can be used in the learning process. Table 5 shown the average acquisition of the three aspects:

Table 5. Student response questionnaire results

Aspects	Percentage
Perception	84%
Attitude	87,5%
Actions related to the object of attitude	65%
Average rating percentage	78,8%
Category	Positive

DISCUSSION

Online learning causes learning activities to be less effective. The need for individual driven learning skills is the key to effective online learning during a pandemic and during normal times (Mehta et al., 2021). Students must understand the use of IT (Information and Technology) to carry out online learning. The importance of the role of IT must be increased in education and non-education. IT in the world of education can influence the learning process, impacting the level of individual competence in a virtual learning environment (Mosanya, 2021). By understanding IT, students and teachers can take advantage of technological advances in the learning process. One of the technologies that can be used is E-modules with the help of a flipbook. From the research results, it can be seen and analyzed that the average result of the E-module validation by material experts is 90%. This shows that the content feasibility category of the teaching materials is classified as very feasible. In the previous research conducted by Meidita & Susilowibowo (2021), in carrying out this development, it can be seen that 90.36% is resulted from the material expert validation. These results fall into the very feasible criteria. Material expert validation covers several aspects: material coverage, material accuracy, up-to-date, compliance with laws and regulations, ways in carrying out supporting presentations for material presentation, presentation of learning, and completeness of presentation.

Then, media experts validation includes the following aspects: layout of the cover of the teaching materials, the typography of the teaching materials, layout of the contents of the teaching materials, typography of the contents of the teaching materials, and illustration of the teaching materials. The average result evaluation validation by graphic expert obtains the percentage of 96.3% with the category very feasible. This shows that the appearance or design of the E-module is very attractive, starting from the cover, introduction, content of the material, to the display of practice questions and others. The previous research shows the validation results obtained from media experts amounted to 89.10% where the results were included in the very feasible criteria. From this research, it can be analyzed that the use of E-modules with attractive and creative forms can be used as learning materials to attract students' attention. This is in line with (Sidiq, 2020) that using of E-modules can captivate students because in these products, there are appealing images, animations, videos, and audios.

Meanwhile, the validation of linguists includes several aspects, namely: conformity with the students' development level, readability, ability to motivate, straightforwardness, coherence of the flow of thinking, suitability with rule language, as well as presentation technique. The result of the assessment of linguists is 80%, which belongs in the feasible category. The previous research conducted by Meidita & Susilowibowo (2021) obtained 80.47% from the validation assessment of linguists and enter the eligible criteria. Then, for the results of student responses in the perception indicator, the researcher wanted to know students' responses toward the use of the sentences, font type, font size, material presented, questions presented, and students' perceptions of learning. From these sub-indicators, 20 respondents or students answered "Yes" was 84% in the sense of agreeing, and 14% in the sense of disagreeing. With these results, it can be concluded that the teaching materials developed fall into the positive category in this perception indicator. According to Faryanti (2016), someone is said to respond positively to something because they think it is intriguing.

Meanwhile, the results of the attitude indicators show that 87.5% of students answered "Yes" as a sign of agreement, and 12.5% answered "No" as a sign of disagreement. These results indicate that this indicator gets a very positive category. So that the content of the attitude indicators, which are related to student interest in the E-module, student curiosity, interest in the illustrations presented, and finally there is interest in the overall appearance of the E-module seen from the very positive response, which means the product is very attractive to students. With the acquisition of positive results on the attitude indicators, it can be inferred that students feel interested in using E-modules and became more curious during the learning process. According to Zainul & Oktavia (2018), e-modules are assessed by teachers as interactive teaching materials because they can contain pictures, photos, videos, texts, quizzes, and other features that can attract students' attention. In the action indicators related to the attitude object, it is known that the percentage obtained is 65% of students answering "Yes" as a sign of agreement, and 35% of students answering "No" as a sign of disagreeing. From these results, the E-module product is considered less positive. These results were obtained because as many as 12 students from 20 students chose "Yes" regarding wanting to use the E-module and 8 students chose "No". Then, 14 students from the 20 students chose "Yes" related to being more enthusiastic about learning when using E-module teaching materials, and 6 students answered "No". So that obtained an average of 65%.

From the three aspects or indicators above, it can be seen that the average results of student responses to the use of PBL-based flipbook-assisted E-modules in the material for implementing incoming and outgoing mail management. The results show a percentage of 78.8% with a positive category, indicating that this E-module development product can be used in the learning process. Previous research by Sa'diyah (2011) concludes that the development of an E-module based on a digital flipbook for facilitating distance learning in SMA obtained 82% results in the feasible category. Further research conducted by Romayanti et al. (2020) showed that student responses resulted in 86.4% with a very decent category. Then, the research by Wijayanto. & Zuhri (2014) got an average result of 87.49% of student responses that belongs to the exciting category.

CONCLUSION

It is considered very feasible from the results of the research in the development of E-module products based on Problem Based Learning (PBL) on correspondence material. This E-module product, assisted by a PDF corporate flipbook, was declared very feasible by obtaining a material expert validation percentage of 90%, classified as very feasible. Furthermore, the validation by graphic experts resulted in an average of 96.3%, classified as very feasible. Third, the validation results by linguists was with an average of 80%, which was classified as very highly worthy. Of the three assessments carried out by material experts, graphic experts, and linguists, an average of 88.7% was obtained, which falls in the very feasible category. From the students' responses to the E-module product assisted by the corporate PDF flipbook, it received a good response. Twenty respondents obtained an average result of 78.8% with a positive category. E-module that has been developed is suitable for teaching materials when learning material for managing incoming and outgoing letters in class X OTKP 3 SMKN Mojoagung. In this research, there is a limitation, namely in the product development process, it did not reach the Disseminate stage because the product developed is limited to cost and time, and this development research do not reach all schools. With this research, SMKN Mojoagung, in the future, can use or utilize PBL-based E-module development products on correspondence material or in managing incoming and outgoing letters to make it easier for teachers and students to learn.

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