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Development of Electronic Project Modules to Strengthen Pancasila Students' Profile in Engineering and Technology Theme

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Abstract: The project activity for strengthening the Pancasila Student Profile (P5) at SMA Negeri 1 Rejotangan was implemented in the second semester of the 2022/2023 academic year. The P5 module used was still in printed form, which was less engaging and interactive, causing some students to be less active in participating. This was reflected in their assessment results. To address this issue, researchers developed an electronic P5 module. The study employed the Reflective, Recursive, Design, and Development (R2D2) method, consisting of three stages: defining focus, designing and developing, and dissemination. The results showed that (1) the P5 electronic module with the theme "Engineering and Technology to Build NKRI" was developed using the Canva platform; (2) validation by media and material experts indicated the product was very valid, with an average percentage of 82%; and (3) the module was feasible for use based on small- and large-group trials, with an average percentage of 79%. The study concludes that the Canva-based electronic module is valid and feasible to use as an independent learning medium for grade X students of SMA Negeri 1 Rejotangan, enhancing engagement and interactivity in P5 learning.

INTRODUCTION

The Merdeka Curriculum is an additional option in the context of learning recovery during 2022 - 2024. The Merdeka Curriculum was developed as a curriculum while focusing on essential material, character development, and learner competencies. Schools that are not ready to use the independent curriculum can still involve the 2013 Education program as a learning implementer, as well as the emergency curriculum which is a change from the 2013 curriculum.

The Merdeka Curriculum prioritizes the Pancasila Student Profile Strengthening Project (P5) and extracurricular activities. P5 activities demonstrate the Pancasila student profile. The Pancasila student profile consists of six main qualities, namely belief, devotion to God Almighty and Glorious, world diversity, joint participation, basic thinking, autonomy, and imagination.

The learning results of students at SMA Negeri 1 Rejotangan show that there are students who are less active in participating in P5 activities. 341 students participate in P5 activities and 57 students who are less active in participating in P5 activities. This is known from the assessments carried out. There are 4 assessments in P5 activities, namely peer assessment, summative assessment, formative assessment, and diagnostic assessment. These assessments will determine the value of students in the P5 report card. Learners' grades are categorized into 4 types, namely starting to develop, developing, developing as expected, and very developed. Learners who are less active in participating in P5 activities will be categorized in the starting to develop or developing category assessment. The P5 report card is printed once a year and contains the competencies that students have learned in P5 activities for 1 year.

Students are less dynamic in participating in P5 training because of the learning media used. The media used in education is less interactive and interesting so students quickly get bored in carrying out P5 activities. This causes students to get less than optimal scores in P5 activities.

Based on the results of observations in November 2022. Muhammad Hasan, M.Pd. as a productive teacher in Informatics Subjects explained that SMA Negeri 1 Rejotangan implements two curricula, namely the 2013 Curriculum and the Merdeka Curriculum. The 2013 curriculum is applied in grades XI and XII. The Merdeka Curriculum is applied in class X. This is because the Merdeka Curriculum is a new curriculum that was launched and implemented in schools in 2022. The Pancasila student profile activity is one of the activities in the Merdeka Curriculum. The Pancasila student profile activity still requires a lot of preparation, one of which is the preparation of modules as a medium in its implementation.

Based on the above problems, the researchers are interested in developing P5 E-modules with the theme of engineering and technology to build the Unitary State of the Republic of Indonesia (NKRI). This P5 e-module is intended to solve the problem of the lack of P5 modules at SMA Negeri 1 Rejotangan. Interactive and interesting P5 e-modules are expected to make students more active in participating in P5 exercises. With a schedule that can be set by students themselves, the P5 E-module makes it easier for students to learn on their own.

A. E-Modules

Sugiyono, et al (2013) state that E-modules are a type of electronic display of teaching materials that are independent, and logically organized, with audio, animation, and navigation (Seruni et al., 2019). Meanwhile, Arsyad (2013) argues that E-modules are Personal Computer (PC)-based learning media that provide an open door potential for students to explore themselves in obtaining illustrations exclusively by following the instructions of the program used (Agung, 2021). Based on the opinions of several experts above, it can be concluded that E-modules are computer-based learning media that include audio, animation, and navigation and are presented in electronic format with systematic organization.

B. Pancasila Student Profile Strengthening Project

Satria (2022) states that the Pancasila learner profile strengthening project is a task-based co-curricular movement intended to strengthen efforts to achieve the abilities and character shown by the Pancasila student profile which depends on the norms of graduate expertise. Meanwhile, Asrijanty (2021) argues that the task of strengthening the profile of Pancasila students is an effort to perfect the profile of Pancasila students by utilizing other learning worldviews. Based on the above opinions, it can be concluded that the Pancasila learner profile strengthening project is an effort-based co-curricular activity that aims to achieve the abilities and characteristics shown by the Pancasila learner profile by using different learning insights.

C. Canva

Permimaizita (2022) states that Canva is a graphic design tool that makes it easy for users to create various creative designs online. Meanwhile, Mulianti (2021) argues that Canva is an online design program that allows you to create various graphic designs for various media, including invitation cards, presentations, graphics, posters, banners, photo editing, Instagram posters, and Facebook covers (Zariono, 2022). Based on the opinions of several experts above, it can be concluded that the Canva application is an online graphic design tool that is used in making media such as graphics, posters, banners, invitation cards, presentations, photo editing, and Instagram and Facebook covers.

RESEARCH METHODS

A. Development Model

Research and development is an examination strategy to create and test items that will be made in research. The research method used is the Multimedia Development Life Cycle (MDLC). MDLC is a system development method that works well for systems that use multimedia. One model of the MDLC technique is the Reflective, Recursive, Design, and Development (R2D2) created by Willis (1995).

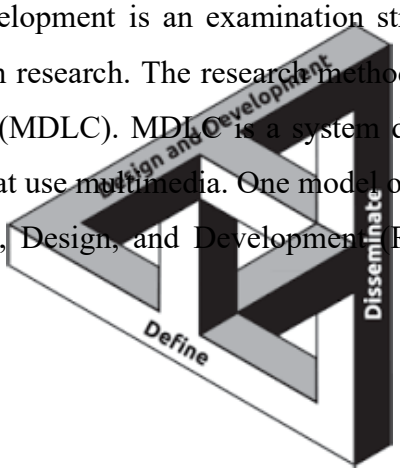

Figure 1. Chart of R2D2 Design Model

The R2D2 model has 3 main focuses namely: (1) define focus, (2) design and development focus, and (3) dissemination focus. This model has three flexible principles: recursive, reflection, and participation. Reflection, in particular, is the

consideration of what has been and is being accomplished. In this, a new strategy is tested, tried, and sometimes adopted before being revised again or discarded. Things that don't go according to plan are changed again and adjusted to suit the circumstances. Recursive, which means ideas are looked at repeatedly throughout the design and development process. The recursive development of learning materials allows users and experts to fully participate in the revision and reformation process. Mentoring, where students, originators, planning experts, media experts, and other groups felt to be involved are fully engaged with the planning as participants, not as research objects (Mistiani, 2016). The R2D2 model is very suitable for use in this study because it is to the problems found in the field. The problem found is that the P5 module used at SMA Negeri 1 Rejotangan is still a printed module that is less interesting and interactive. Based on these problems, an interactive E-module is needed that can attract students to be more active in carrying out P5 activities. The developed E-module is expected to be feasible and valid for students to use by being tested by media experts, material experts, and students.

B. Research Procedure

The development procedure is based on the R2D2 model which consists of 3 main focuses which are adjusted to the steps of the P5 E-module development procedure which will be made with the following steps:

1. Define Focus Stage

At this stage, researchers created a participatory team to test the feasibility of the E-module and conducted observations, observations, and interviews with SMA Negeri 1 Rejotangan teachers. The results of forming a participatory team include researchers forming a participatory team consisting of media experts, material experts, and respondents. While observations and observations produce, among others, learning activities carried out in stages, namely, the teacher explains the theoretical material first then the students take notes, after which the students follow the instructions or directions given by the teacher.

2. Design and Development Focus Stage

1) Design

The Design stage is the stage where the P5 E-module learning media is designed. In this design, the theme of the material included in the P5 E-module is engineering and technology to build the Republic of Indonesia with the title of making learning media.

2) Development

The development of the P5 E-module was made using the Canva application. The use of the Canva application in E-module development is based on many previous studies that use the Canva application as a medium for making E-modules. The following are previous studies that used Canva as a medium for making E-modules:

1. Research by Intan Wahyu Wilujeng (2021). In this study, researchers used Canva as a medium for making E-modules with the content of material on the benefits of animals for humans.
2. Mellisa's research (2021). In this study, researchers used Canva as a medium for making E-modules with the content of environmental pollution material.
3. Research by Athika Maisyarah Nillofa Ende (2022). In this study, researchers used Canva as a medium for making E-modules with basic electrical and electronic material content.
4. Fitriani's research (2022). In this study, researchers used Canva as a medium for making E-modules with the content of cooperative material.
5. Research by Safira Putri Salsabila (2022). In this study, researchers used Canva as a medium for making E-modules with the content of Indonesian natural appearance material.
6. Research by Lathifa Budiaty (2022). In this study, researchers used Canva as a medium for making E-modules with the material content of the factors of Islamic civilization in the world.
7. Even Ceria's research (2022). In this study, researchers used Canva as a medium for making E-modules with the content of cube and beam material.

8. Research by Tri Wahyuni (2022). In this study, researchers used Canva as a medium for making E-modules with the contents of vibration, wave, and sound materials.

   E-modules developed in previous studies are very feasible and valid for use as learning media.

3) Dissemination Focus Stage

The dissemination of this product is the submission of E-module P5 to SMA Negeri 1 Rejotangan teacher in the hope that it can be used as an interesting learning media for students.

C. Product Trial

1) Trial Design

The initial design in the trial was equipped with several materials that helped production and media experts and materials related to the Canva-based P5 E-module, such as media experts, namely lecturers at Bhinneka PGRI University Tulungagung, material experts, namely teachers of SMA Negeri 1 Rejotangan and students of SMA Negeri 1 Rejotangan.

2) Test Subject

a. Media and Material Expert Trials

   Media trials by media expert Mr. Fahrur Rozi, M.Kom., as a lecturer at Bhinneka PGRI University, and material trials by material expert Mr. Muhammad Hasan, M.Pd., as a teacher at SMA Negeri 1 Rejotangan. The products that have been produced are tested to see their validity.

b. Small Group Trial

   Small group trial by taking a sample of 5 students of class X SMA Negeri 1 Rejotangan. During the small group trial, the Canva-based P5 E-module was displayed. In addition, students will be given a questionnaire to assess the product that has been presented. Small group trials were conducted to determine the feasibility of the products made.

c. Large Group Trial

Small group trial by taking a sample of 24 students of class X SMA Negeri 1 Rejotangan. During the small group trial, the Canva-based P5 E-module was displayed. In addition, students will be given a questionnaire to assess the product that has been presented. Large group trials were conducted to determine the feasibility of the products made.

3) Data Type

The types of data obtained in this study are:

a. Qualitative Data

Qualitative data is generated from interview activities and input in the form of criticism and suggestions from validators and educators on products produced and tested.

b. Quantitative Data

Quantitative data is generated from the assessment of validation questionnaires, students, and educators.

4) Data Collection Techniques and Instruments

a. Data Collection Technique

Supporting data should be collected using appropriate data collection strategies for this research. Here's how the data was collected:

1. Observation

This observation data is generated through observing and recording activities carried out by teachers and students at SMA Negeri 1 Rejotangan.

2. Interview

This interview data is generated through interviewing teachers of SMA Negeri 1 Rejotangan regarding the learning process at school.

3. Inquiry

This questionnaire data is generated by filling out and evaluating questionnaires by material expert validators, media experts, and students during product trials.

b. Data Collection Instruments

Measuring tools or guidelines used to collect research data are called data collection instruments. There are three instruments used by researchers in developing E-modules, among others:

1. Media Expert Instrument

   This instrument contains 3 aspects, namely aspects of communication, technical design, and display format.

2. Material Expert Instrument

   This instrument contains 2 aspects, namely aspects of material content and technical design.

3. Learner Instrument

   This instrument contains 3 aspects, namely programming, content, and appearance aspects.

5) Data Analysis Technique

Data analysis techniques are ways of processing data and information during the research process so that later the data can be used as information or new research results. This research is still in its early stages. Therefore, the data analysis method of the questionnaire sheet is descriptive. Information obtained from surveys of media masters, material experts, and students as quantitative quality (numbers) will be converted into quantitative quality (letters).

Table 1. Rules for Scoring Media Expert and Material Expert Instruments

Criteria	**Score**
Strongly Agree	5
Agree	4
Moderately Agree	3
Disagree Less	2
Disagree	1

Source: (Sugiyono, 2011)

Table 2. Instrument Scoring Rules for Learners

Criteria	**Score**
Strongly Agree	5
Agree	4
Moderately Agree	3
Disagree Less	2
Disagree	1

Source: (Sugiyono, 2011)

Determine the general score of the evaluation section of each test by working out the normal score of the assessment, then convert it into the measures contained in tables 1 and 2 Based on the percentage assessment and the following formula (Busiri, 2015), the feasibility can be determined:

$$\textbf{Presentation}\ (\%) = \frac{\textbf{analysis result score}}{\textbf{maximum score}}\ \textbf{x 100\%}$$

Then the calculation results will be compared using the score interpretation table in the following table:

Table 3. Interpretation of Validity Score

Score	Qualification
81% - 100%	Very valid
61% - 80%	Valid
41% - 60%	Valid enough
21% - 40%	Less valid
0% - 20%	Very invalid

Source: (Rizal, 2018)

Table 4. Interpretation of Feasibility Score

Score	Qualification
81% - 100%	Very feasible
61% - 80%	Worth
41% - 60%	Decent enough
21% - 40%	Less feasible
0% - 20%	Very unfeasible

Source: (Arikunto, 2006)

RESULTS AND DISCUSSION

A. Problem and Needs Analysis Results

The problem and needs analysis stage aims to find out about the Pancasila Student Profile Strengthening Project (P5) activities that run in class X SMA Negeri 1 Rejotangan. At this stage, the researcher interviewed one of the teachers who took care of P5 activities in class X SMA Negeri 1 Rejotangan. The interview was held on December 21, 2022, with the resource person Mr. Muhammad Hasan, M.Pd.

Based on the interviews, the following information was obtained:

a) SMA Negeri 1 Rejotangan in the 2022/2023 academic year began implementing P5 activities in class X.

b) The phase used in P5 activities in class X is phase E.

c) Teachers still use printed modules in P5 activities.

d) Some students are less active in participating in P5 activities, this can be seen from the assessments obtained by students.

Based on what is found in the field, it is necessary to develop teaching materials in the form of interactive E-modules that can facilitate students to be more active in carrying out P5 activities. Based on this, researchers developed a P5 electronic module with the theme of engineering and technology to build a unitary state of the Republic of Indonesia.

B. Product Development Analysis Results

1. Define Focus Stage

At the defined focus stage, researchers created a participatory team to test the feasibility of the P5 E-module. The results of forming a participatory team are as follows:

1) The media expert is Mr. Fahrur Rozi, M.Kom., a lecturer in the information technology education study program at Bhinneka University Tulungagung.
2) The material expert is Mr. Muhammad Hasan, M.Pd., the information and communication technology subject teacher of SMA Negeri 1 Rejotangan.
3) Small Group Test, namely X-B class students with a total of 5 people.
4) Large Group Test, namely X-B class students with a total of 24 people.

2. Design and Development Focus Stage

a. Design Stage

At the design stage, the first thing the researcher did was to type the material that would be contained in the E-module in Microsoft Word.

The second stage is to open the Canva application to design the E-module and enter the text that the researcher has made previously in the Microsoft Word application.

The third stage is looking for image and video references that are to the material that will be contained in the E-module using Google and YouTube applications.

The next stage is to create evaluation questions using the Google Form application.

b. Development Stage

The development stage is the stage of combining all aspects into one unit into a P5 E-module with the theme of engineering and technology to build a unitary state of the Republic of Indonesia that is ready for use, after being validated by the validator.

3. Dissemination Focus Stage

The dissemination focus stage is the dissemination stage. The dissemination of the P5 E-module is carried out by submitting the E-module link that has been validated by the validator to the teacher of SMA Negeri 1 Rejotangan.

C. Product Trial Analysis Results

1. Media Expert Test Results

1) Media Expert Test 1

Table 5. Media Expert Test Results Testing 1

No.	Aspects	Statement	Score	Percent	Description
1.	Communication	Was it easy to start the media?	4	80%	Valid
		Are the instructions for use clear?	5	100%	Very Valid
		Can the media communicate information clearly and effectively?	4	80%	Valid
2.	Technical Design	Is the start button working properly?	4	80%	Valid
		Does the home button work properly?	4	80%	Valid
		Is the close button working properly?	5	100%	Very Valid
		Does the next page button work properly?	4	80%	Valid
		Is the back page button working properly?	4	80%	Valid
		Is the next button	4	80%	Valid

		working properly?			
		Is the back button working properly?	4	80%	Valid
		Does the video work well?	4	80%	Valid
		Does the animation work well?	4	80%	Valid
		Can the worksheet be opened and filled in properly?	5	100%	Very Valid
3.	Display Format	Is the use of background good?	1	20%	Very Invalid
		Is the animation included in the media interesting and appropriate?	3	60%	Fairly Valid
		Are the images included in the media interesting and appropriate?	5	100%	Very Valid
Total Score = 64					

From the results of the media expert test 1 above, it is known that the score of the media expert test is 64 or equal to 80% of the maximum score of 80. The following is the percentage calculation:

$$\text{Media expert trial percentage} = \frac{\textit{analysis result score}}{\textit{maximum score}} \; x \; 100\%$$

$$= \frac{64}{80} \; x \; 100\%$$

$$= 80\%$$

Based on the calculation of the percentage of the feasibility of the media expert trial, the result is 80%. The results of these calculations were then compared using Table 3 to determine the qualifications of the validity of E-module P5. Based on the table, it is known that the qualification of E-module P5 is valid.

2) Media Expert Test 2

Table 6. Media Expert Test Results Testing 2

No.	Aspects	Statement	Score	Percent	Description
1.	Communication	Was it easy to start the media?	4	80%	Valid
		Are the instructions for use clear?	5	100%	Very Valid

		Can the media communicate information clearly and effectively?	4	80%	Valid
2.	Technical Design	Is the start button working properly?	5	100%	Very Valid
		Does the home button work properly?	5	100%	Very Valid
		Is the close button working properly?	5	100%	Very Valid
		Does the next page button work properly?	5	100%	Very Valid
		Is the back page button working properly?	5	100%	Very Valid
		Is the next button working properly?	5	100%	Very Valid
		Is the back button working properly?	5	100%	Very Valid
		Does the video work well?	3	60%	Fairly Valid
		Does the animation work well?	4	80%	Valid
		Can the worksheet be opened and filled in properly?	4	80%	Valid
3.	Display Format	Is the use of background good?	5	100%	Very Valid
		Is the animation included in the media interesting and appropriate?	4	80%	Valid
		Are the images included in the media interesting and appropriate?	4	80%	Valid
Total Score = 72					

From the results of the media expert test 2 above, it is known that the score of the media expert test is 72 or equal to 90% of the maximum score of 80. The following is the percentage calculation:

$$\text{Media expert trial percentage} = \frac{\textit{analysis result score}}{\textit{maximum score}} \; x \; 100\%$$

$$= \frac{72}{80} \; x \; 100\%$$

$$= 90\%$$

Based on the calculation of the percentage of the feasibility of the media expert trial, the result is 90%. The results of these calculations were then

compared using Table 3 to determine the qualifications of the validity of E-module P5. Based on the table, it is known that the qualification of E-module P5 is very valid.

2. Material Expert Test Results

Table 7. Material Expert Trial Results

No.	Aspects	Statement	Score	Percent	Description
1.	Content Feasibility	Is the material by the flow of learning objectives (ATP) and learning outcomes (CP)?	4	80%	Valid
		Is the substance of the learning material correct?	4	80%	Valid
		Is the material useful to add insight?	4	80%	Valid
2.	Linguistics	Is the information in the material clear?	4	80%	Valid
		Is the language used by good and correct Indonesian language rules (EYD)?	3	60%	Fairly Valid
		Is the use of language effective and efficient?	3	60%	Fairly Valid
3.	Presentation	Are the objectives clear?	4	80%	Valid
		Is the order of presentation coherent?	4	80%	Valid
		Are the videos, animations, and images presented related and support the clarity of the material?	4	80%	Valid
	Total Score = 34				

From the trial results above, it is known that the score of the material expert trial is 34, or equal to 76% of the maximum score of 45. The following is the percentage calculation:

$$\text{Material expert trial percentage} = \frac{\textit{analysis result score}}{\textit{maximum score}} \; x \; 100\%$$

$$= \frac{34}{45} \text{ x } 100\%$$

$$= 76\%$$

Based on the calculation of the percentage of the feasibility of the material expert trial, the result is 76%. The results of these calculations were then compared using Table 3 to determine the qualifications of the validity of E-module P5. Based on the table, it is known that the qualification of E-module P5 is valid.

3. Small Group Trial Results

Table 8. Small Group Trial Results

No.	Aspects	Statement	Score	Percent	Description
1.	Usage	Can the media be used properly?	19	76%	Worth
		Is it easy to get in and out of the media?	19	76%	Worth
		Are the instructions for use clear?	20	80%	Worth
2.	Contents	Is the language used by good and correct Indonesian language rules (EYD)?	19	76%	Worth
		Is it easy to understand the learning material?	20	80%	Worth
		Is the language used easy to understand and communicative?	18	72%	Worth
3.	Display	Is the background selection appropriate?	19	76%	Worth
		Are the animated images presented interesting?	19	76%	Worth
		Are the videos presented interesting and appropriate?	20	80%	Worth
Total Score = 173					

From the trial results above, it is known that the score of the small group trial is 173, or equal to 76.89% of the maximum score of 225. The following is the percentage calculation:

$$\text{Small group trial percentage} = \frac{\textit{analysis result score}}{\textit{maximum score}} \times 100\%$$

$$= \frac{173}{225} \times 100\%$$

$$= 76{,}89\%$$

Based on the calculation of the feasibility percentage of the small group trial, the result is 76.89%. The results of these calculations were then compared using Table 4 to determine the qualifications of the feasibility of E-module P5. Based on the table, it is known that the qualification of E-module P5 is feasible.

4. Large Group Trial Results

Table 9. Large Group Trial Results

No.	Aspects	Statement	Score	Percent	Description
1.	Usage	Can the media be used properly?	85	71%	Worth
		Is it easy to get in and out of the media?	82	68%	Worth
		Are the instructions for use clear?	87	73%	Worth
2.	Contents	Is the language used by good and correct Indonesian language rules (EYD)?	83	69%	Worth
		Is it easy to understand the learning material?	79	66%	Worth
		Is the language used easy to understand and communicative?	84	70%	Worth
3.	Display	Is the background selection appropriate?	82	68%	Worth
		Are the animated images presented interesting?	84	70%	Worth
		Are the videos presented interesting and appropriate?	84	70%	Worth
Total Score = 878					

From the trial results above, it is known that the score of the large group trial is 878, or equal to 81.30% of the maximum score of 1080. The following is the percentage calculation:

$$\text{Large group trial percentage} = \frac{\textit{analysis result score}}{\textit{maximum score}} \; x \; 100\%$$

$$= \frac{878}{1080} \; x \; 100\%$$

$$= 81{,}30\%$$

Based on the calculation of the feasibility percentage of the large group trial, the result is 81.30%. The results of these calculations were then compared using Table 4 to determine the qualifications of the feasibility of E-module P5. Based on the table, it is known that the qualification of E-module P5 is very feasible.

CONCLUSIONS AND RECOMMENDATIONS

A. Conclusion

Based on the results of this research and development, it can be concluded that:

1. This research and development produce a product in the form of a P5 E-module with the theme of engineering and technology to build a unitary state of the Republic of Indonesia which can be used in P5 activities in class X phase e. The stages carried out to produce the P5 E-module are as follows: a) define focus stage, b) design and development focus stage, and c) dissemination focus stage. The material in this P5 E-module consists of 8 sub-chapters, namely 1) objectives, 2) flow, 3) achievement targets, 4) instructions, 5) series of activities, 6) dimensions, elements, and sub-elements, 7) development of sub-elements between phases, and 8) assessment. The developed P5 e-module is also equipped with evaluation questions in the form of google forms.
2. Based on the trials of media experts, material experts, and large groups, it can be seen that the results of the test media expert test 1 were 80% or valid, the results of the test media expert test 2 were 90% or very valid, the results of the material expert test were 76% or valid, the group test was valid. The results of the small group trial were 76.89% or feasible and the results of the large group trial were 81.30% or very feasible. The results of interviews

with teachers and Overall, students showed a favorable response to the use of the P5 E-module in P5 activities.

B. Advice

Based on the results of this research and development, the following can be suggested:

1. The developed P5 e-module is expected to be used for P5 activities in class X phase e so that it will make it easier for students to understand the material presented.
2. Given that the results of research and development products can provide benefits for learners, it is recommended that teachers develop this product with a wider scope or on other materials in the future.
3. Further development of the P5 E-module is needed to increase the activeness of students in participating in P5 activities, to obtain the expected results and assessments.

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