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Development of a Teachmint-Based Digital Module to Improve Students' Learning Effectiveness in Pancasila Education

Ni Wayan Sayuwaktini[1], Rangga Firdaus[2], Herpratiwi[3], Undang Rosidin[4]
[1,2,3,4]Universitas Lampung, Bandar Lampung, Indonesia

[1]waktinisayu.nw93@gmail.com

Abstract

This study aims to analyze (1) the potential and conditions of development, (2) the process, (3) the product, and (4) the attractiveness of teachmint-based digital modules for students. The research method adapts Borg and Gall's research and development (R&D) with a population of class VIII students and a sample of 60 students. Data collection was done using questionnaires, observations, questionnaires, and documentation, while data analysis was done using descriptive statistical analysis techniques and t-tests. The results of the study show: (1) the potential and conditions of module development based on expert validation obtained very valid results and can be used without revision, with a percentage of material experts 90%, media experts 77.5%, and design experts 76%. (2) The process of developing teachmint-based digital learning modules showed an effectiveness level of 91%, which is included in the very effective category. (3) The product of developing teachmint-based digital learning modules has proven to be effective in improving learning outcomes with an effect size value of $\theta = 6.05$, which indicates a strong effect. (4) Teachmint-based digital learning modules achieved an interest rate of 91.5%, which is included in the very interesting category for students.

Keywords: digital modules, teachmint, learning effectiveness, Pancasila education

Introduction

Education is a fundamental need in human life for the development of character, knowledge, and skills. The role of education is increasingly vital, along with the emergence of new challenges in the highly competitive era of the 21st century. Every individual is required to master several skills known as the 6 C's, namely: citizenship, character, critical thinking and problem solving, creativity, communication, and collaboration. Education as a science that continues to develop requires teachers as educators to adjust learning activities to attract students to study diligently and enthusiastically and gain various benefits from the learning process.

Pancasila and Citizenship Education (Pancasila Education) as a compulsory subject at the elementary and secondary education levels in Indonesia has a strategic role in shaping the national insight, character, and citizenship skills of students. As stated in Permendikbud No. 20 of 2016, Pancasila Education aims to develop students' abilities in internalizing and practicing Pancasila values in everyday life, as well as becoming intelligent, skilled, and characterful citizens by the values of Pancasila and the 1945 Constitution. The complexity of skills that must be mastered by students with limited learning time requires teachers to be able to package learning activities effectively. According to Rohmawati (2015:17), learning effectiveness is a measure of the success of the interaction process between students and between students and teachers in educational situations to achieve learning goals. Learning effectiveness can be seen from student activities during learning, student responses to learning, and student mastery of concepts.

Based on the results of observations at UPT SMPN 1 Kasui in the Pancasila Education subject for class VIII in the even semester of the 2023/2024 academic year, it was found that learning

effectiveness was still low. This can be seen from several indicators: (1) ineffective communication where students tend to be passive in answering teacher questions verbally; (2) low mastery and enthusiasm for the subject matter as indicated by the lack of student learning preparation; (3) suboptimal learning outcomes, especially in non-favorite classes with many students having to take remedial classes. The problem of low learning effectiveness is influenced by several factors, including: (1) the use of simple learning media such as PowerPoint, textbooks, modules and printed LKPD; (2) limited facilities and infrastructure; (3) teaching methods that are still dominated by lectures with limited broadcast materials; (4) students are more interested in using smartphones to play than to study; and (5) students' perception that Pancasila Education material is difficult and less interesting.

In this digital era, the use of technology in learning is a necessity. The right learning media can make learning much more enjoyable and can bring out students' enthusiasm for learning (Yaumi, 2021). The development of the latest technology in the world of education can integrate technology with learning media so that it can accommodate students in understanding the material more meaningfully and faster but still enjoyably (Dofir, 2020). Teachmint is an all-in-one digital learning platform that offers innovative solutions with various features that support the learning process. This platform makes it easy for teachers and students to connect inside and outside the classroom through a Learning Management System (LMS) designed to create, distribute, and organize the delivery of learning materials online. The features available include interactive quizzes, online meetings, material storage, direct communication, and monitoring student attendance.

Several previous studies support the effectiveness of using digital media and the Teachmint platform in learning. Widyastutik (2024) found that the use of Teachmint had a positive impact on students' academic grades. Saputri et al. (2023) showed the validity of the development of multimedia-based digital modules. Putra et al. (2023) proved that Android-based learning applications could improve students' high-level thinking skills. Rosmana et al. (2023) confirmed that the use of digital learning media can increase students' interest and curiosity. Sulastiani et al. (2023) emphasized the success of using interactive video media in the Teachmint application in improving learning achievement.

Based on the background in this context, this study aims to: (1) analyze the potential and conditions for developing digital learning modules based on Teachmint; (2) describe the process of developing digital learning modules; (3) measure the effectiveness of digital learning modules in improving learning outcomes; and (4) assess the attractiveness of digital learning modules for students. The development of this digital module is focused on regulatory material in my country, considering the complexity of the material that requires systematic and comprehensive presentation.

The significance of this study lies in the effort to integrate digital technology in Pancasila Education learning through the development of learning modules that can be accessed flexibly through the Teachmint platform. The results of the study are expected to provide theoretical contributions to enriching the study of educational technology and learning resources for Pancasila Education, as well as practical contributions to the development of teacher competence in creating interactive learning modules and increasing the effectiveness of learning in the digital era.

Method

This study uses the Research and Development (R&D) method. This method aims to produce and test the effectiveness of a product in an educational context. The research model used in

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this study refers to the Borg and Gall development model which consists of several stages, namely initial research and information collection, planning, development of the initial form of the product, limited trials, product revisions, field trials, and revisions to operational products (Borg & Gall, 2007). This research was conducted at UPT SMPN 1 Kasui, Way Kanan Regency, Lampung, in the odd semester of 2024. The subjects of the study were class VIII students, with a population of 115 students. The sampling technique used was the simple random sampling method, with a sample size of 60 students randomly selected from four classes.

This research procedure includes several stages. First, a needs analysis was carried out through literature studies and field observations to identify problems in Pancasila Education learning. Second, planning for the development of a Teachmint-based digital module was carried out by adjusting the applicable curriculum and the needs of students. Next, the initial product was developed and validated by experts in the fields of materials, learning design, and learning media. After revisions based on the validation results, a limited trial was conducted on a small group, which was then followed by a larger-scale field trial to assess the effectiveness of the product in learning. After the field test stage, the product was revised based on the feedback obtained so that the Teachmint-based digital module that was developed could be more optimal before being implemented widely.

The research instruments used in this study included questionnaires, observations, interviews, and pretests and posttests. The questionnaire was used to measure students' responses to the use of the digital module. Observations were conducted to assess the effectiveness of learning in practice. Interviews with teachers and students helped analyze needs and identify obstacles in conventional learning. Meanwhile, the pretest and posttest were used to assess the improvement in student learning outcomes after using the digital module.

Data analysis was carried out using a descriptive approach and inferential statistics. The validity and reliability of the instruments were tested before use. The normality test was conducted to ensure data distribution, while the effectiveness of the digital module was tested using a paired sample t-test to compare the results of the pretest and posttest. The results of the data analysis are interpreted based on the established effectiveness categories.

Results

Potential and Conditions for Developing Digital Modules Based on Teachmint for the Effectiveness of Learning Pancasila Education for Students.

The results of this study contain 4 points, namely: (1) the potential and conditions for developing digital modules based on teachmint (2) the process of developing digital modules based on teachmint, (3) the effectiveness of using digital modules based on teachmint to improve learning outcomes for Pancasila Education subjects and (4) the attractiveness of digital learning modules based on teachmint for students. Specifically, it is explained as follows:

Table 1. Results of the Distribution of Student Learning Style Questionnaires

Class	Number of Students	Visual Learning Style	Auditory Learning Style	Kinesthetic Learning Style
VIII A	29	38%	10,3%	51,7%
VIII B	29	31%	62%	7%
VIII C	29	41,4%	20,7%	37,9%
VIII D	28	55%	24%	21%
Average		**41%**	**29%**	**29%**

Source: Processed from results distribution 2024 questionnaire

Based on Table 1, it can be concluded that most students have a visual learning style, which means that they use their sense of sight to observe, read media, draw, and demonstrate. Students who have a visual learning style will easily understand and comprehend information if it is presented visually, in color, showing shapes and images or videos while studying something. And to facilitate students who have an auditory learning style, they can listen to the sound on the video that they can access on the video link in the teachmint-based digital module. Meanwhile, students with a kinesthetic learning style can be facilitated by working on quizzes that must be answered through direct observation of the community so that students' learning needs will be met.

Based on the data collected, the author developed a learning resource in the form of a teachmint-based digital module where previously the student's learning resource was only textbooks and powerpoints and centered on the teacher, into a teachmint-based digital module that can be accessed via each student's cellphone. With the existence of a digital module based on teachmint, it is expected to help students in learning Pancasila Education material more effectively and can motivate students to be more enthusiastic in learning, especially on the material on regulations in my country. Based on the explanation above, regarding the conditions and potentials that exist at UPT SMPN 1 Kasui, the development of a digital module based on teachmint for the effectiveness of student learning on the material on regulations in my country is important to do. The development of this module is expected to provide convenience for students in understanding the concept of regulations in my country according to the conditions and characteristics of students.

Teachmint-based Digital Module Development Process

1. Planning

After obtaining data on teacher and student needs analysis, the author made a draft of the initial design of the digital module. The preparation of the digital module design was carried out by dividing the structure of the material to be presented and adjusting it to the learning outcomes to be achieved in each meeting. Based on the explanation of the needs in the material in chapter IV, namely the regulations in my country, it was prepared for learning for six meetings. The Learning Implementation Plan was prepared concerning the independent curriculum. After dividing the structure of the material, the author made a storyboard, created a digital module on the Canva platform, and created a validation instrument for the content and product construct.

2. Initial draft development product (*Develop preliminary form of product*)

The initial product draft was made by designing a digital module based on *teachmint* for the effectiveness of learning Pancasila Education for students on the material of regulations in my country. The initial design of the digital module based on *teachmint* is presented in Table 2.

Table 2 Initial Design of Digital Module of Regulation Material in My Country

Design Components	Information
Cover	The front cover is designed with a color light containing: a) Product development title; namely the digital learning module Pancasila Education, Regulations in My Country for 8th grade junior high school students. b) The images displayed are cartoon images of junior high school students and images related to regulations and laws. c) The names of the product developers are Ni Wayan Sayuwaktini, S.Pd., Gr. Dr. Rangga Firdaus, S.Kom., M.Kom. Prof. Dr. Herpratiwi, M.Pd. and Prof. Dr. Undang Rosidin, M.Pd.

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Soft cover	Inner cover section with more colors *soft*
Foreword	Appearance This containing introduction from composed writer with gratitude author, benefits digital module for readers, and speech Thank You from writer to all the party that has help.
List of contents	This section contains the table of contents and pages of the digital module.
Material Map	Contains a concept map of all the material contained in the digital module.
Learning Activity 1	This display consists of learning objectives to be achieved in learning activity 1, presentation of the material on regulations in my house and my school, which is complemented by the presentation of phenomena in the form of videos and images and practice questions 1 and let's discuss questions.
Learning Activity 2	This display consists of learning objectives to be achieved in learning activity 2, presentation of material on regulations in my environment which is complemented by presentation of phenomena in the form of videos and images and practice questions 2 and let's analyze questions.
Learning Activity 3	This display consists of learning objectives to be achieved in learning activity 3, presentation of material on the understanding of the order of legal regulations, which is complemented by the presentation of phenomena in the form of videos and images and practice questions 3 and let's be creative questions.
Learning Activity 4	This display consists of learning objectives to be achieved in learning activity 4, presentation of the material on types and sequence of laws and regulations which is complemented by the presentation of phenomena in the form of videos or images and practice questions 4 and questions on let's observe, let's analyze and let's discuss.
Learning Activity 5	This display consists of learning objectives to be achieved in learning activity 5, presentation of the material on types and implementation of laws and regulations, which is complemented by the presentation of phenomena in the form of videos or images and practice questions 5 and let's think critically questions.
Competence test	This display contains questions used to measure the extent to which learning competencies have been achieved.
Glossary	This view contains definitions of the concepts discussed in the digital module.
Bibliography	This display contains references cited by the author to create teaching materials for Pancasila Education learning.

3. Expert test

Expert tests include learning media expert tests, material expert tests and language expert tests, which are described as follows:

a. Learning media expert test

Teachmint -based digital module products were tested by an expert in learning media, namely Mr. Pujo Duryat, M.Pd. He is a lecturer at the Open University in Way Kanan Regency, previously, he had experience in compiling science subject modules. Based on the review conducted, an overview of the aspects of effectiveness and efficiency, reliability (consistency), maintainability

(can be maintained) and media appearance was obtained. Reviewed from the analysis per material indicator, the results were obtained as presented in Table 3.

Table 3 Description of Percentage of Results of the Learning Media Expert Validity Test

No.	Category	Weight (X)	F	Percentage	FX
1	Strongly agree	5	6	30%	30
2	Agree	4	10	50%	40
3	Quite Agree	3	4	20%	12
4	Disagree Less	2	0	0%	0
5	Strongly Disagree	1	0	0%	0
Total			**20**	**100%**	**82**

Source: Processed from results distribution 2024 questionnaire

Table 3 explains the results of the recapitulation of the product description of the digital module based on *teachmint,* which consists of 20 questions. The results of the recapitulation of the description consist of four categories, namely, very good, good, less good, and not good. Based on the results of the data description above, the digital module based on *teachmint* is in the very valid category (can be used without revision), with a percentage of 77.5%.

b. Validation of learning material experts

Validation by material experts was carried out by a material expert, namely Mrs. Yusmini, M.Pd. She is a PPKn teacher who teaches at SMA Negeri 1 Banjit, she is an outstanding teacher in Way Kanan Regency who also often develops PPKn learning modules. Based on the results of the review, an overview of the aspects of material suitability, material accuracy, material sophistication, encouraging curiosity, and ease of use and understanding was obtained. The results were obtained from the analysis per material indicator as presented in Table 4.

Table 4 Description of the Percentage of Results of the Validity Test of Material Experts

No.	Category	Weight (X)	F	Percentage	FX
1	Strongly agree	5	6	60%	30
2	Agree	4	4	40%	16
3	Quite Agree	3	0	0%	0
4	Disagree Less	2	0	0%	0
5	Strongly Disagree	1	0	0%	0
Total			**10**	**100%**	**46**

Table 4 explains the results of the recapitulation of the description of the material consisting of 20 questions. The results of the recapitulation of the description consist of 5 categories, namely the categories of strongly agree, agree, quite agree, disagree, and strongly disagree. Based on the results of the data description above, the digital module based on *teachmint* is in the very valid category (can be used without revision), with a percentage of 90%.

c. Validation of learning design experts

Validation by an instructional design expert was carried out by an instructional design expert, Mr. Fuad Mustofa, M.Pd. He is a principal in Way Kanan Regency who has experience in developing a social studies learning module. Based on the review conducted, an overview of the digital module's typography, image, layout, color, and design aspects was obtained. The results were obtained from the analysis per material indicator as presented in Table 5.

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Table 5 Description of Percentage of Results of Validity Test of Learning Design Experts

No.	Category	Weight (X)	F	Percentage	FX
1	Strongly agree	5	4	20%	20
2	Agree	4	13	65%	52
3	Quite Agree	3	3	15%	9
4	Disagree Less	2	0	0%	0
5	Strongly Disagree	1	0	0%	0
Total			**20**	**100%**	**81**

Table 4.5 explains the results of the recapitulation of the design description consisting of 20 questions. The results of the recapitulation of the description consist of 5 categories, namely, strongly agree, agree, quite agree, disagree, and strongly disagree. Based on the results of the data description above, the *teachmint -based digital module* is in the very feasible category, with a percentage of 76%, namely very valid (can be used without revision).

4. Product Revision

Product revisions are carried out based on criticism, suggestions, and input from learning media experts, material experts, and learning design experts.

5. Effectiveness of Using Digital Module Products Based on Teachmint Application

The effectiveness of using digital modules based on Teachmint has shown very significant results in improving student learning outcomes in Pancasila Education subjects for class VIII. Based on the results of statistical tests through dependent sample t-test, the Sig. (2-tailed) value was obtained at 0.00 <0.05, indicating a significant difference between the pretest and posttest results. The effect of using this digital module is further strengthened by the calculation of the effect size of 6.05 (>1.00), which indicates a strong effect in improving student learning outcomes.

The research data shows a consistent increase in learning outcomes in all classes tested. Class VIII D recorded the highest increase of 25 points (from 65 to 90), followed by Class VIII C which increased by 21 points (from 67 to 88), Class VIII A increased by 18 points (from 72 to 90), and Class VIII B increased by 17 points (from 71 to 88). The level of effectiveness based on the student's perspective also showed very positive results with an overall average reaching 91%, where Class VIII A and VIII B reached 92%, Class VIII D 91%, and Class VIII C 90%.

The results of the learning effectiveness test at the field test stage indicate that the use of teachmint-based digital modules has been proven to increase the effectiveness of student learning. The use of teachmint-based digital modules can help students learn and understand a theoretical concept and formulation of a learning. This is in line with the analysis conducted by Halomoan Budi et al. (2021), who put forward various benefits of digital books, including their ability to help three-dimensional space illustrations become more real, facilitate understanding of content through multimedia, increase learning interactivity, and minimize student boredom in learning.

This finding is also supported by research by Gupta et al. (2022), which states that the use of digital modules in learning can increase student participation and psychosocial in learning, especially in terms of interaction between students and teachers. Furthermore, Hutahaean et al. (2018) identified various positive impacts of the use of interactive digital modules, including access to multimedia-based information, increased learning motivation, and flexibility of access that is not limited by time and place.

Teachmint, as the application used, has a Learning Management System (LMS) that is specifically designed to create, distribute, and organize the delivery of learning materials online. This system aims to make it easier for teachers to plan the learning process online. Thus, it can

be concluded that teachmint-based digital modules have proven effective in improving student learning outcomes, which is indicated by an increase in learning effectiveness indicators, namely management of learning implementation, communicative processes, student responses, learning activities, and learning outcomes.

6. Attractiveness of Digital Module Products Based on Teachmint Application

Discussion of the results of the attractiveness test of the digital module development product based on teachmint shows very positive results based on student responses. Based on data obtained from the four classes tested, the level of attractiveness of the digital module reached an average of 91.5% with the criteria of "very attractive". Specifically, Class VIII B and VIII D showed the highest level of attractiveness of 92%, while Class VIII A and VIII C reached 91%. This data indicates a consistently high level of attractiveness in all classes tested.

This high level of attractiveness can be explained by several main factors. First, the teachmint-based digital module presents Pancasila Education material in a more interactive and easily accessible format, allowing students to learn more flexibly according to their respective speeds and learning styles. Second, the integration of various multimedia elements in the digital module helps to visualize abstract concepts in Pancasila Education to be more concrete and easy to understand.

This digital module also supports a more collaborative and participatory learning process. The interactive features available on the Teachmint platform allow students to engage in digital discussions, share opinions, and reflect on learning materials. This is in line with the characteristics of Pancasila Education, which emphasizes the formation of character and citizenship values through an active and meaningful learning process.

The ease of access and use of teachmint-based digital modules contributes significantly to the high level of interest. Students can access learning materials anytime and anywhere, which supports independent learning and allows them to repeat the material as needed. The automatic assessment and direct feedback features also help students monitor their learning progress independently. This high level of interest indicates that the use of teachmint-based digital modules is a learning innovation that is relevant to the needs and preferences of students in the digital era. This also shows that the integration of technology in Pancasila Education learning can increase student motivation and involvement in the learning process, which ultimately contributes to the achievement of learning objectives and more optimal learning outcomes.

Discussion

Effectiveness of Using Digital Module Products Based on the Teachmint Application

The effectiveness of using teachmint-based digital modules has shown very significant results in improving student learning outcomes in Pancasila Education subjects for grade VIII. Based on the results of statistical tests through dependent sample t-tests, a Sig. (2-tailed) value of 0.00 <0.05 was obtained, indicating a significant difference between the pretest and posttest results. The influence of using this digital module is further strengthened by the calculation of the effect size of 6.05 (>1.00) which indicates a strong effect in improving student learning outcomes.

The research data shows a consistent increase in learning outcomes in all classes tested. Class VIII D recorded the highest increase of 25 points (from 65 to 90), followed by Class VIII C which increased by 21 points (from 67 to 88), Class VIII A increased by 18 points (from 72 to 90), and Class VIII B increased by 17 points (from 71 to 88). The level of effectiveness based on the perspective of students also showed very positive results with an overall average

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reaching 91%, where Class VIII A and VIII B reached 92%, Class VIII D 91%, and Class VIII C 90%.

The results of the learning effectiveness test at the field test stage indicated that the use of teachmint-based digital modules has been proven to increase the effectiveness of student learning. The use of teachmint-based digital modules can help students to learn and understand a theoretical concept and formulation of a learning. This is in line with the analysis conducted by Halomoan Budi et al. (2021), which stated various benefits of digital books, including their ability to help three-dimensional space illustrations become more realistic, facilitate understanding of content through multimedia, increase learning interactivity, and minimize student boredom in learning.

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Teachmint as the application used, has a Learning Management System (LMS) which is specifically designed to create, distribute and organize the delivery of learning materials online. This system aims to make it easier for teachers to plan the online learning process. Thus, it can be concluded that teachmint-based digital modules have proven effective in improving student learning outcomes, as indicated by an increase in learning effectiveness indicators, namely management of learning implementation, communicative processes, student responses, learning activities and learning outcomes.

Attractiveness of Digital Module Products based on the Teachmint Application 2.

Discussion of the results of the attractiveness test of teachmint-based digital module development products showed very positive results based on student responses. Based on data obtained from the four classes tested, the level of attractiveness of the digital module reached an average of 91.5% with the criteria of "very attractive". Specifically, Class VIII B and VIII D showed the highest level of attractiveness of 92%, while Class VIII A and VIII C reached 91%. This data indicates a consistent high level of attractiveness in all classes tested.

This high level of attractiveness can be explained through several main factors. First, teachmint-based digital modules present Pancasila Education materials in a more interactive and accessible format, allowing students to learn more flexibly according to their own pace and learning style. Second, the integration of various multimedia elements in digital modules helps visualize abstract concepts in Pancasila Education to be more concrete and easy to understand.

This digital module also supports a more collaborative and participatory learning process. The interactive features available on the Teachmint platform allow students to engage in digital discussions, share opinions, and reflect on learning materials. This is in line with the characteristics of Pancasila Education, which emphasizes the formation of character and citizenship values through the learning process.

The ease of access and use of teachmint-based digital modules contributes significantly to the high level of interest. Learners can access learning materials anytime and anywhere, which supports independent learning and allows them to repeat the material as needed. The automatic assessment and direct feedback features also help learners monitor their learning progress independently.

This high level of interest indicates that the use of teachmint-based digital modules is a learning innovation that is relevant to the needs and preferences of learners in the digital era. This also shows that the integration of technology in Pancasila Education learning can increase

student motivation and involvement in the learning process, which ultimately contributes to the achievement of learning objectives and more optimal learning outcomes.

Research Limitations

Every research and development has its limitations. These limitations are also recognized by the author, including:

1. The digital module based on the teachmint application that was developed can only be used in learning the Pancasila Education regulatory material in my country.
2. The form is digital so it must use digital tools such as mobile phones, laptops or PCs and requires an internet network. 3. In its development, the analysis was only carried out on the needs of student characteristics at UPT SMPN 1 Kasui, Way Kanan Regency, Lampung.

Conclusion

Based on the results of the research and discussion, several conclusions can be drawn. First, the needs analysis indicates the necessity of developing a digital module to improve student learning effectiveness in the Pancasila Education subject at UPT SMPN 1 Kasui. Second, the product development process involved media experts, material experts, and learning design experts. The assessment by media experts showed a feasibility level of 77.5% (very valid) and could be used without revision. Validation by material experts obtained a percentage of 90% (very valid), while validation by learning design experts reached 76% (very feasible) in terms of learning design aspects, alignment with the material and core competencies, module components, and the overall appearance of the Teachmint-based digital module. Third, the developed digital module consists of 43 pages containing comprehensive material about regulations in my country, including a cover page, approval page, foreword, table of contents, module location map, glossary, six learning activities each with questions and answer keys, bibliography, glossary, and closing. The module is also enriched with images and videos accessible to students via barcode scanning. Fourth, the effectiveness of using the Teachmint-based digital module reached 91% (very effective), with field results showing that students receiving instruction through this module experienced significant improvements in learning outcomes and effectiveness. This effectiveness was further supported by enhancements in learning activities, motivation, and student responses. Fifth, the development of the Teachmint-based digital module for Pancasila Education proved to be highly engaging, with an interest rate of 91.5%.

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