Development of Digital Learning Materials for Google Sites-Based Curriculum Review to Support the Implementation of MBKM Curriculum in The PGSD Department

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Abstract. The purpose of this research is to determine the feasibility, practicality, and effectiveness of Google Sites-based Teachmint learning media in the Educational Management course on classroom management approaches in the PGSD department at Unimed. This research is a development study using the ADDIE model, which includes analysis, design, development, implementation, and evaluation. Regarding product validity, the validation data from subject matter experts yielded a percentage of 73.21%, which falls into the category of feasible and requires revision, while the validation data from media experts yielded a percentage of 84.35%, categorized as very feasible. Regarding attractiveness, a percentage of 91.60% was obtained, categorized as very attractive. Regarding effectiveness, the average pre-test score of the students was 57.6 and the average post-test score was 88.8. The average score results indicate that there is an impact from the use of Google Sites-based Teachmint learning media.

Keywords: Development, Google Sites, Teachmint.

1 Introduction

Learning media is one of the important elements in supporting the teaching and learning process. [1] define learning media as anything used to convey messages, stimulate thoughts, feelings, and attract the attention of learners so that they become more engaged in the learning process. In other words, learning media aims to create an engaging and effective learning atmosphere. Gagne and Briggs, as quoted in [2], explain that learning media includes various physical tools used to convey the content of learning materials. These tools can include books, cassettes, videos, films, slides, televisions, and computer-based devices. These media not only serve as a means to convey information but also as tools to facilitate students' understanding of the material being taught [3].

Levie and Lentz [4] explain that learning media has several main functions. The attention function aims to attract students' attention so that they can concentrate on the material being taught. The affective function, on the other hand, plays a role in creating a pleasant learning experience, for example, through the use of illustrated texts that make students feel comfortable

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and interested. In addition, learning media also has a cognitive function that helps students understand and remember information better, as well as a compensatory function that provides alternative explanations for texts or materials that are difficult to understand [5]. These functions make learning media an essential component for achieving learning objectives effectively.

According to Febrian & Nasution [6] and Firmadani [7], learning media also offers various practical benefits. One of the benefits is making abstract concepts more concrete. Concepts that are difficult to explain verbally can be simplified through the use of media, making them easier for students to understand. Learning media also allows teachers to present objects that are too dangerous or difficult to access in the classroom. For example, wild animals can be shown through videos or television, providing a richer learning experience without risk. Additionally, media allows teachers to display objects that are too large or small, such as aircraft or bacteria, through images or illustrations. Learning media can even represent movements that are too fast or too slow, for example, by showing a video of an arrow in flight or the process of seedling growth [8].

Susilana and Riyana [9] categorize learning media based on technological development. Print-based media includes text, graphics, and photos that visually represent learning objects. Audio-visual technology uses hardware such as projectors or tape recorders to support teaching. Computer-based media, on the other hand, allow for the storage and presentation of materials in digital format, providing greater flexibility and wider access. Additionally, media that combine print and computer technology integrate various media formats to enhance the effectiveness of learning. Sumiharsono & Hasanah [10] and Tohir et al. [11] add that learning media can be classified based on their nature, scope, and usage techniques. Auditory, visual, and audio-visual media each serve to convey information through sound, images, or a combination of both. The reach of media also varies, ranging from broad to limited, depending on the learning needs [12].

From the perspective of their usage techniques, learning media can be divided into projected and non-projected media. Projected media, such as slide films or OHP transparencies, require special projection equipment to be used [13], [14]. Meanwhile, non-projected media, such as books or pictures, can be used directly without the need for additional devices. This classification shows the diversity of learning media that can be selected and tailored to specific learning needs.

In the digital era, applications like Teachmint offer all-in-one solutions to support the learning process. Teachmint is a mobile-based application designed to help teachers, educators, and training institutions manage learning more efficiently. This application is equipped with various features, such as live online classes, lecture recording, live polling, real-time note sharing, and a digital whiteboard. With these features, Teachmint enables educators to create an interactive learning environment and effectively support online learning. The ease of classroom management, from material delivery to evaluation, makes Teachmint a relevant tool for teachers in the digital era [15].

In addition, this application provides flexibility for teachers to schedule classes, make announcements, and even conduct online tests. With a single platform, educators can meet various learning needs without having to use multiple applications or devices. Features such as lecture recording and note sharing also allow students to access learning materials anytime, providing more flexible learning opportunities. Teachmint is not just an application, but also a solution capable of integrating various aspects of learning into a complete digital ecosystem.

The aim of this research is to develop digital teaching materials using Google Sites based on Teachmint, designed to support the implementation of the Merdeka Belajar Kampus Merdeka (MBKM) Curriculum in the Curriculum Review course at the Elementary School

Teacher Education Study Program (PGSD) of FIP UNIMED. This research specifically aims to determine the feasibility of these teaching materials based on expert validation, their practicality in supporting the learning process, and their effectiveness in enhancing students' understanding of the curriculum material. With this development, it is expected that the resulting teaching materials will facilitate innovative, interactive, and relevant learning in line with the demands of the MBKM curriculum, thereby supporting the optimal achievement of student competencies.

2 Research Method

The research method used in this study is research and development, which aims to produce a specific product and test its quality [16]. The developed product is a Teachmint-based learning media designed for use in the Educational Management course with classroom management approach material in the PGSD Study Program, Universitas Negeri Medan. The development process uses the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation), which consists of five main stages to ensure that the resulting product is of high quality, usable, and effectively supports learning.

The process of developing Teachmint-based learning media begins with the analysis stage, which focuses on identifying learning problems in the field. At this stage, performance analysis is conducted to recognize learning constraints, as well as needs analysis to determine the Course Learning Outcomes (CLO) and Sub-CLO that must be achieved. This information serves as the basis for designing the appropriate solution. Next, in the planning stage (Design), the solution is outlined in the form of product planning, including the preparation of media content outlines, flow chart designs, and production guide scripts. Thorough planning ensures that media development is directed and aligned with the identified learning needs.

The development stage involves the production of Teachmint-based media according to the design that has been created, with expert validation to ensure the feasibility of the content and technical aspects of the media. After that, the implementation stage is carried out through trials with PGSD Unimed students to measure the appeal and effectiveness of the learning media. Data from this trial becomes the basis for evaluation, where the media is assessed based on validation results, questionnaires, and tests. Data analysis is conducted to evaluate the feasibility, attractiveness, and effectiveness of the media, as well as to serve as a foundation for further improvement and development to make the learning media more optimal.

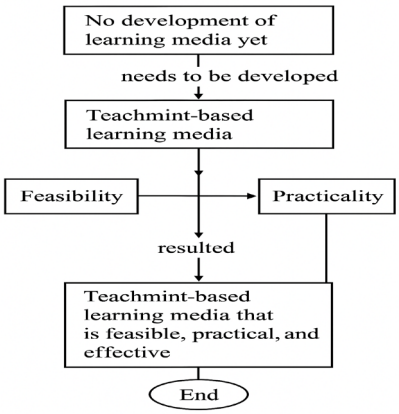

Fig. 1. Research Flow Diagram

3 Result and Discussion

3.1 Result

3.1.1 Analysis

The analysis stage is the initial step taken by researchers to identify potential problems in the learning activities of the Educational Management course. Based on initial observations, several issues were found that hinder the effectiveness of learning. One of the main problems is the lack of student engagement in the learning process, which is caused by the minimal use of interactive and engaging learning media. This has resulted in a low understanding of the material among students, especially in the subtopic of classroom management approaches. In addition, the still conventional teaching methods also pose an obstacle in the effort to achieve the Course Learning Outcomes (CPMK) that have been established. Therefore, the researchers consider the development of technology-based learning media as a solution to enhance student motivation and learning outcomes.

Next, a needs analysis was conducted to determine the relevant CPMK and Sub CPMK for this course. The analysis results show that students need learning media that not only presents the material clearly but also facilitates interaction and their active involvement in the learning process. Based on these needs, Teachmint-based learning media was chosen as an alternative solution. This media is designed to meet the needs of students by providing structured, engaging, and interactive materials, as well as supporting more flexible learning. This analysis phase serves as the main foundation in designing and developing educational media products that meet the needs of students and learning objectives.

3.1.2 Design

At the planning stage, the researchers began to determine solutions to address the problems identified in the analysis stage. The solution involves the development of Teachmint-based learning media designed to enhance student engagement and understanding in the Educational Management course, particularly on the topic of classroom management approaches. The researcher developed an outline of the media content that includes important elements to be presented, such as learning objectives, core materials, case examples, and learning evaluations. This outline is designed in a structured manner to encompass all aspects of the Course Learning Outcomes (CPMK) that have been established.

To facilitate the development process, the outline of the media content is presented in the form of a flow chart that illustrates the systematic delivery of the material. In addition, the researchers prepared a script as a guide in producing educational media content. This script includes detailed explanations of the material, instructions for using the media, and interactive guidelines that support student engagement. With the presence of this flow chart and script, the planning stage becomes more directed, so that the resulting product not only meets the learning needs but also has the potential to enhance the effectiveness and quality of the classroom learning process.

3.1.3 Development

The development stage consists of three main phases: pre-production, production, and post-production, each carried out systematically to ensure the quality of Teachmint-based learning media. In the pre-production phase, researchers prepare all technical requirements based on the script created during the planning stage. This script serves as the main guiding document in the development process, which includes the structure of the material, visual design, and interactivity designed to enhance the students' learning experience. The production phase is carried out using Teachmint software, chosen for its features that support the creation of interactive learning media. In this stage, all content is entered and integrated into Teachmint according to the structure specified in the script. After completion, the learning media goes through a post-production phase, where validation is conducted by subject matter experts to ensure that the content aligns with the Course Learning Outcomes (CPMK) and sub-CPMK. Additionally, validation is also carried out by media experts to assess the feasibility of the design, interface, and interactive features presented. This validation process aims to ensure that the developed media meets quality standards before being implemented in learning.

Table 1. Results of Expert Material Validation

Aspect	Score	Max. Score	Percentage	Remarks
Material Relevance	20	28	71,42%	Worthy
Language Relevance	9	12	75%	Worthy
Average			**73.21%**	**Worthy**

From the table of material validation results above, it can be interpreted that the aspect of material suitability in the learning media has a rating with a percentage of 71.42%, indicating that the material is complete and in accordance with CPMK and Sub CPMK. In the aspect of language suitability in the learning media, it has a rating with a percentage of 75%, indicating that the material uses communicative language and adheres to Indonesian language rules. With these ratings, it can be concluded that the learning media has a rating of 73.21%, meaning the learning media is suitable for use in the learning process for the Educational Management course on classroom management approaches. Here is the validation from the media expert:

Table 2. Results of Media Expert Validation

Aspect	Score	Max. Score	Percentage	Remarks
Display Design	41	48	85,41%	Very Worthy
Ease of Media Use	10	12	83,33%	Very Worthy
Average			**84,35%**	**Very Worthy**

From the table of media validation results above, it can be interpreted that the aspect of visual design in the learning media has a rating with a percentage of 85.4%, indicating that the visual design has the appropriate composition, menu and button placement, as well as size, color, and font type. In the aspect of media usability, it has a rating with a percentage of 83.3%, indicating that the media is easy to use and can assist students in teaching and learning activities. From these ratings, it can be concluded that the learning media has a rating of 84.35%, meaning the learning media is very suitable for use in the teaching and learning process in the Educational Management courses. Here is the developed learning media:

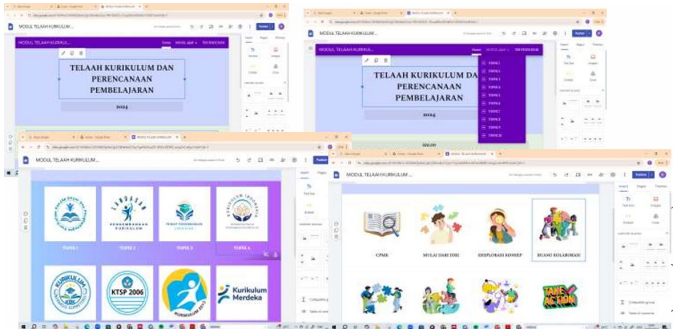

Fig. 2. Google Sites Learning Media Based on Teachmint

3.1.4 Implementation

At this stage, the product is tested on third-semester students of the PGSD program at Unimed for the 2023/2024 academic year to determine the attractiveness of the Teachmint-based learning media and its effectiveness before and after using the Teachmint-based learning media. Here are the results of the attractiveness test:

Table 3. Results of Media Expert Validation

Aspect	Percentage	Criteria
Content Quality	90.60%	Very Interesting
Media Quality	90.70%	Very Interesting
Technical Quality	93.50%	Very Interesting
Average	**91.60%**	**Very Interesting**

Based on the table, a percentage of 90.60% was obtained for the content quality aspect, 90.70% for the media appearance aspect, and 93.50% for the technical quality aspect. Based on the values of these three aspects, an average of 91.60% was obtained with the criteria of very interesting.

Table 4. Results of Pre-test and Post-test Scores

No	Student Name	Pre-test	Post-test
1	AAW	70	98
2	AVI	62	90
3	AAN	60	88
4	AHP	64	92
5	AFS	60	90
6	ADCK	50	82
7	AIA	58	86
8	AAH	60	92
9	BKPP	70	94
10	BRPP	56	88
11	DAS	50	88

12	DBF	66	90
13	FBV	50	86
14	GBO	46	80
15	GMFP	52	88
16	GRAS	60	90
17	GA	48	82
18	JDP	56	84
19	LSW	64	92
20	MK	62	90
21	MCI	70	92
22	MGWA	64	90
23	NFAH	64	88
24	NPM	70	94
25	NRU	70	96
26	NPPS	54	82
27	NEG	62	90
28	NAZS	50	86
29	NR	62	90
Average		**57,6**	**88,8**

The table shows that the average pre-test score of the students is 57.6 and the average post-test score of the students is 88.8. The average score results indicate that there is an influence of using Teachmint-based learning media on learning. This can be seen from the difference in student scores before and after the implementation of Teachmint-based learning media.

3.1.5 Evaluation

The validation results conducted by subject matter experts indicate that the Teachmint-based learning media is suitable for use in education. In the aspect of material suitability, the media received a rating with a percentage of 71.42%, while in the aspect of language suitability, the rating percentage reached 75%. From these two aspects, the average rating by material experts is 73.21%, which is considered acceptable. Meanwhile, validation by media experts shows very good results. In the aspect of display design, the media received a percentage of 85.41%, and in the aspect of media usability, the rating reached 83.33%. The overall average validation result by media experts is 84.35%, which is considered very acceptable.

The attractiveness test results show a very positive response from students. The media received a percentage of 90.60% for the content quality aspect, 90.70% for the media appearance aspect, and 93.50% for the technical quality aspect. From these results, the average rating for the media's attractiveness level is 91.60%, which is classified as very attractive. Additionally, the results of the pre-test and post-test analysis also show a significant improvement in students' learning outcomes. Before using the Teachmint-based learning media, the average pre-test score of the students was 57.6. After using the media, the average post-test score increased to 88.8. This significant difference indicates that the Teachmint-based learning media is effective in enhancing students' understanding of the material being taught. With these results, it can be concluded that Teachmint-based learning media is not only feasible and engaging but also has a positive impact on students' learning outcomes, making it an innovative solution to improve the quality of education in the Educational Management course.

3.2 Discussion

The development of Teachmint-based learning media in the Educational Management course shows a strong relevance to student needs and learning outcomes. The analysis phase identifies the lack of student engagement as the main issue hindering the effectiveness of learning. This issue is influenced by the minimal use of interactive learning media and the still conventional teaching methods. Therefore, the Teachmint-based media is designed to present material in a structured, engaging, and interactive manner, with the expectation of enhancing students' learning motivation. The results of the needs analysis emphasize the importance of learning media that not only provide conceptual understanding but also facilitate active interaction, support flexibility, and meet the established CPMK.

At the design stage, the researchers developed a systematic framework to ensure that the educational media product can meet the learning objectives. The outline of the media content through a flowchart provides a clear structure for the delivery of the material, including learning objectives, case examples, and evaluations. Equipped with a guide script, the media development process becomes more directed. This approach ensures that essential elements such as student engagement and clarity of material delivery can be met. This step provides a solid foundation to ensure that Teachmint-based learning media is not only relevant but also can be implemented effectively.

The development stage involves validation by subject matter and media experts, who provide an overview of the product's feasibility. The results of the subject matter expert validation indicate that the media has met the feasibility criteria with an average score of 73.21%. The aspects of material and language suitability show good results, although there are still some revision notes for further improvement. On the other hand, the media expert validation shows very good results with an average score of 84.35%, particularly in the aspects of visual design and ease of use. With these results, the Teachmint-based learning media can be considered highly suitable for implementation in education.

The implementation stage tests the effectiveness of the media through attractiveness tests and pre-test and post-test analyses. The attractiveness test results show that the Teachmint-based learning media is very engaging, with an average score of 91.60%, covering content quality, media appearance, and technical quality. Additionally, the pre-test and post-test results indicate a significant improvement in students' learning outcomes, from an average pre-test score of 57.6 to 88.8 in the post-test. This striking difference indicates that Teachmint-based learning media can significantly enhance students' understanding, especially in the subtopic of classroom management approaches.

The evaluation stage provides final results that reinforce that Teachmint-based learning media is an effective innovation for improving the quality of education. Validation and testing show that this media is not only feasible and engaging but also has a positive impact on students' learning outcomes. Teachmint-based media meets students' needs for active and flexible learning and can address challenges in conventional learning. With this success, Teachmint-based learning media can serve as a model for developing similar innovations in other courses.

Hidayah & Setiawan [17] in their research emphasize that Teachmint as a digital learning platform enables more dynamic interactions between teachers and students. They found that the use of Teachmint helps accelerate the learning process, facilitates material sharing, and increases student engagement through features such as discussion rooms and real-time assessments. The results of this study show that the use of Teachmint not only facilitates face-to-face learning but also supports remote learning in an efficient and effective manner.

Permatasari et al. [18] highlight the role of Teachmint in enhancing the quality of classroom learning, especially in the digital era. Their research found that Teachmint provides various tools that support teachers in designing, delivering content, and assessing student learning outcomes in real-time. The virtual classroom feature and easy material distribution through this application facilitate classroom management, whether for online or offline learning. The use of this media has been proven to increase students' learning motivation because they feel more engaged and motivated with the use of technology they are already familiar with.

Sulastiani et al. [19] in their study show that Teachmint-based digital learning media has the potential to improve the quality of learning, especially in the aspects of interaction and evaluation. Their research revealed that this media supports a more structured assessment process and provides quick feedback, which greatly helps students in understanding the material being taught. Additionally, they also noted that Teachmint enables better collaboration between students and teachers through various features such as chat and polling, which facilitate more effective two-way communication.

Overall, these studies affirm that Teachmint-based digital learning media provide many advantages in enhancing the effectiveness of learning. This platform not only simplifies classroom management and material distribution but also enhances interaction between students and teachers, providing a more enjoyable and interactive learning experience.

4 Conclusion

This research shows that the development process of Teachmint-based Google Sites learning media through the stages of analysis, design, development, implementation, and evaluation was successfully carried out. This media was validated by content experts with an average score of 73.21% (suitable category) and by media experts with an average score of 84.35%. (kategori sangat layak). The results of the field trials also show that this media is very engaging, with an average percentage of 91.60%, covering aspects of content quality, media appearance, and technical quality.

Additionally, the effectiveness test results showed a significant improvement in student learning, with an average pre-test score of 57.6 increasing to 88.8 in the post-test. This proves that the use of Teachmint-based media has a positive impact on students' learning outcomes. Thus, this learning media is considered effective and very interesting to implement in supporting learning.

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