Developing *Tembang Macapat* Electronic Teaching Materials in the Teaching of Local Language for Junior High School Students

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**Abstract**

This research was conducted to support learning material, especially ‘tembang’ and with the aim of developing electronic teaching materials for Tembang Macapat for junior high school students. This research uses a research and development design. The research steps start from analyzing potential and problems, collecting information, product design, design validation, design revision and validation testing for users. The data collection techniques used in this research are interview, observation and questionnaire techniques for data collection. The results of the needs analysis show that teachers and students need development media in the form of electronic teaching materials for Macapat songs. The validation results by expert validators are divided into four types of eligibility. In the feasibility aspect, the content received a "good" score. The suitability of the presentation received a score of "fairly good". The appropriateness of the language received a score of "fairly good". The graphic level received a “fairly good” rating. Therefore, it can be said that electronic teaching materials for Macapat songs are acceptable and suitable to be applied as learning media.

**Keywords**

Tembang Macapat; Electronic teaching materials; Local language usage; Materials development;

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**INTRODUCTION**

Philosophically, education is the result of in-depth thinking and reflection on its roots (Djamaluddin, 2014). It seeks to cultivate individuals who believe in and fear God Almighty, possess noble character, are healthy, knowledgeable, capable, creative, independent, and become democratic and responsible citizens (Wahyudin & Ruslan, 2020). In line with this, education is everything that influences the growth, change, and condition of every human being (Pristiwanti et al., 2022). Educational objectives encompass values that are good, noble, appropriate, true, and beautiful for life (Aryanto et al., 2021). National education goals, which are based on a country's philosophy, aim to achieve ideal, comprehensive, and complete development, becoming the parent goals for subordinate objectives (Lazwardi, 2017). An essential component in developing the potential of future generations is the interaction between educators and students through effective and efficient learning tools.

According to Law No. 20 concerning the National Education System, students are community members striving to develop and grow their potential through available learning paths, levels, and types. One critical means of learning is teaching materials (Fitri & Eliyasni, 2021). Teaching materials include all written and unwritten resources that support teachers in the learning process (Bahtiar, 2015; Magdalena et al., 2020). These materials are crucial for guiding educators in directing all learning activities towards students (Nurdyansyah & Mutala’liah, 2018). Consequently, teaching materials must be made effective and engaging to increase student motivation and enthusiasm for learning. In the digital era, teaching materials
have evolved into digital forms, making them easily accessible and capable of improving student achievement and knowledge (Darmita et al., 2014).

Research by Sriwahyuni et al. (2019) indicates that interactive digital teaching materials excel in enhancing students' cognitive abilities. Similarly, Yulaika et al. (2020) found that electronic teaching materials can improve student learning outcomes. Rosida et al. (2017) also concluded that electronic teaching materials are very effective in learning. Additionally, Rafiudin et al. (2021) noted that training participants experienced increased knowledge and understanding in developing electronic teaching materials (e-books) that meet student needs. The importance of developing teaching materials lies in their role in supporting the effectiveness of learning. Teaching materials must meet high-quality criteria to foster an effective learning process (Irawati & Elmubarok, 2014). Therefore, teaching materials should be prepared and developed based on learning objectives. Electronic teaching materials can be adapted by teaching staff to fit the planned curriculum (Tsai et al., 2018). However, many teachers face difficulties in developing appropriate teaching materials, often relying on available school books (Anto & Anita, 2019). Using suitable media is crucial for simplifying the delivery of subjects, enabling students to understand the material better, and enhancing the success of learning, which depends not only on the method used but also on the learning tools (Riwu et al., 2019).

Electronic teaching materials are a set of learning substances arranged coherently and systematically, presenting a complete picture of the skills students need to master, packaged in interactive multimedia (Mirzioxolmatovna et al., 2022). Researchers are interested in developing interactive electronic teaching materials on macapat songs for students of SMP N 39 Semarang. Current teaching materials often focus on theory rather than practice, leading to teacher-centered learning. Tembang macapat is essential for junior high school students as each song conveys moral values, manners, and behavioral instructions relevant from birth to death (Riwu et al., 2019). Santosa (2016) highlighted that Javanese values in macapat songs remain relevant today and can serve as role models for contemporary society.

However, Rochadiana et al. (2022) noted that only 10% of macapat song learning reaches students, making them increasingly unfamiliar with these songs. The reliance on outdated texts that do not align with modern times further complicates understanding. Therefore, innovation in macapat song teaching, such as developing digital materials or e-books, is necessary. This development aims to enhance both skills and knowledge competence. Observations have shown that students find macapat material uninteresting and challenging, primarily due to theoretical teaching methods and lack of practical engagement. Interviews with a Javanese language teacher who revealed that macapat song materials are limited by teaching skills, and students prefer innovative materials. The current need for flexible learning from anywhere and anytime calls for more dynamic teaching materials. Monotonous and non-innovative material delivery reduces student interest. Electronic teaching materials can help slow learners absorb lessons and increase student engagement (Daryanto, 2018). Daryanto's research aligns with findings by Dayanti (2021) that electronic teaching materials in art learning are feasible and effective.

Given these challenges, researchers aim to develop electronic teaching materials for macapat songs, addressing both practical and theoretical benefits. Theoretically, this development can enhance the quality of Javanese language teaching materials and enrich literature on Javanese learning media. Practically, it offers new innovations to improve teaching material quality, particularly for macapat songs, facilitating educators in delivering content and aiding students in their learning journey. The novelty of this study lies in its comprehensive approach to developing and evaluating interactive electronic teaching materials specifically designed for macapat songs in the context of Javanese language education. This focus addresses a critical gap in current educational resources, which often emphasize theoretical knowledge over practical application, leading to disengagement among students. By creating digital
teaching materials that are both interactive and contextually relevant, this study aims to modernize the teaching of traditional Javanese literature, making it more accessible and engaging for contemporary students. Another novel aspect of this study is its integration of Mobile language learning principles within the specific cultural context of Javanese education. This study not only leverages the benefits of digital learning tools to enhance language skills but also preserves and revitalizes cultural heritage through modern educational practices.

**RESEARCH METHOD**

**Research design**

The research design is *Research and development*. Educational Research and development is a process used to develop and validate educational products. The steps of this process are usually referred to as the R&D cycle, which consists of studying research findings pertinent to the product to be developed, developing the products based on these findings, field testing it in the setting where it will be used eventually, and revising it to correct the deficiencies found in the field-testing stage. In more rigorous programs of R&D, this cycle is repeated until the field-test data indicate that the product meets its behaviorally defined objectives ([Maydiantoro, 2019](#)). Research and development is a research design that is useful for developing and testing a product that will later be developed in the world of education ([Borg & Gall, 1983](#)). Development and research steps, according to ([Sugiyono, 2016](#)), namely: (1) Potential and problem analysis, (2) Information gathering, (3) Product design, (4) Design validation, (5) Design revision, (6) Test product trials, (7) Product revisions, (8) Usage trials, (9) Product revisions, (10) Mass production. But in this research and development, researchers limit the steps used as needed, namely until the design revision stage. The data needed in this study consists of primary and secondary data. Primary data were obtained from questionnaires analyzing the needs of students and teachers, observations, interviews, and expert validation results. Meanwhile, secondary data was obtained from books, modules, journals and research related to the development of teaching materials for macapat songs.

**Data Collection Techniques**

Data collection techniques used in this study were interview, observation and questionnaire techniques for data collection ([Kim, et. al., 2017](#)). Interviews were conducted with Javanese language teachers at SMP N 39 Semarang with the following outlines: (1) Obstacles faced by teachers when learning tembang macapat at SMP N 39 Semarang (2) Obstacles faced by students when learning tembang macapat at SMP N 39 Semarang (3) Facilities and infrastructure when learning macapat song at SMP N 39 Semarang (4) Resources used in learning macapat song (5) Media used in learning macapat song (6) Other teaching materials used in learning Macapat songs (7) Causes of obstacles to learning Macapat songs (8) Student learning outcomes related to Macapat songs (9) The need for electronic teaching materials (10) Good and interesting teaching materials. Observations are made in the classroom when learning takes place. Questionnaires for analysis of the needs of teaching materials were filled out by students and supporting teachers.

**Data Analysis Technique**

Data analysis technique is descriptive qualitative. In qualitative descriptive research, it is important that the analysis is carried out at a level where the people involved in the research can easily understand it so they can use the findings in the practice of teaching and learning activities ([Chafe, 2017](#)). There are 3 descriptive data obtained, namely (1) a description of the needs of teachers and students for the Development of Tembang Macapat Teaching Materials at SMP N 39 Semarang, (2) a description of the prototype of Teaching Tembang Macapat, (3) a description of the results of expert validation regarding prototypes of Electronic Teaching Materials Macapat song at SMP N 39 Semarang. The steps in data analysis are (1) data reduction, (2) data presentation, (3) conclusions and data verification. Data reduction is the
process of selecting and classifying data relevant to research. Presentation of data is the process of systematically compiling data. In this step, data in the form of a questionnaire analyzing the needs of students and teachers regarding the development of electronic teaching materials for Tembang Macapat are presented in a narrative manner.

RESEARCH FINDINGS AND DISCUSSION

Analysis of Student and Teacher Needs for Tembang Macapat Teaching Materials

Data from the analysis of students' needs in this study were obtained from interviews and filling out questionnaires. Data were obtained from 63 class VII students and 2 Javanese language teachers at SMP N 39 Semarang. The data is then used as material for consideration in the development of teaching materials for Macapat songs. Data from the analysis of the needs of students and teachers are then grouped into three aspects, namely urgency, weakness, and desire. Data from the needs analysis on the urgency aspect, teachers and students agree that it is necessary to develop teaching materials for macapat songs. The data obtained showed that as many as 61.9% of students answered that it was important, and 39.5% of students answered that the teaching material of the macapat song was very important. The teacher answered that 100% of the macapat song teaching material was very important for learning.

The importance of developing these teaching materials is motivated by the ability of students to develop songs that have not been said to be very good. It can be seen from the results of the questionnaire analysis that 100% of the teachers answered that the students' abilities in developing songs were not good enough, while 42.9% of students answered not well, 47.6% answered well, the rest of the students answered bad as much as 4.8% and very well as much as 4.8%. The results of the analysis are then classified in the aspect of weakness. The description of the data on the wishes of students and teachers for teaching materials developed to improve the ability to develop macapat songs is shown in the following table.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>The Results of the Media Design Needs Analysis</th>
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<tbody>
<tr>
<td><strong>Need</strong></td>
<td><strong>Results</strong></td>
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<tr>
<td>digital form (e-books)</td>
<td>Very interested (100%)</td>
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<tr>
<td>Typeface (font)</td>
<td>Times New Roman (100%)</td>
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<tr>
<td>Font size</td>
<td>12 (50%)</td>
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<td></td>
<td>14 (50%)</td>
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<tr>
<td></td>
<td>13 (20.6%)</td>
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<tr>
<td>Display color</td>
<td>Primary color (50%)</td>
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<td></td>
<td>Tertiary color (50%)</td>
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<td></td>
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<tr>
<td>Background color</td>
<td>Tertiary color (50%)</td>
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<tr>
<td></td>
<td>Polychromatic color (50%)</td>
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<tr>
<td>Additional audio-video features</td>
<td>Very necessary 100%</td>
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</table>
E-books teaching materials were chosen as a form of learning media because the school environment has implemented several digital learning models so that the selection of formse-books very suitable to be used to support the learning process. Based on the analysis of the needs of students and teachers, prototypes were then developed by adjusting the results of the analysis. The software used is using the flipbook.com website. The device was chosen because it is in accordance with the needs of developing teaching materials in the form of electronic books so that the results are in the form of digital books e-books.

The prototype development process for e-books teaching materials begins with creating an application framework. This framework serves as a guide for organizing and preparing the content of the e-books teaching materials. Here is an in-depth explanation of each point in the teaching material prototype framework. The cover is the initial appearance of the teaching material prototype, featuring the title and the name of the composer. This initial presentation sets the tone for the material and should be designed to capture the interest of students (Rochadiana et al., 2022; Daryanto, 2018), inviting them to explore further. The identity section of the teaching materials includes important information such as the names of the author, editor, layout designer, cover designer, and the stated goals and purpose of the teaching materials (Maydiantoro, 2019). This section ensures that students and educators are aware of the contributors and the intent behind the material.

The section on KD (Kompetensi Dasar) and Learning Objectives contains pages that outline the basic competencies and learning objectives that students are expected to achieve during the tembang macapat learning activities. Clearly defined objectives provide students with a roadmap of what they will learn and help them understand the relevance of the material to their overall educational goals. The study material provides a comprehensive explanation of the song macapat pupuh pangkur. It is essential that this content is designed to be engaging and accessible, using clear language and interactive elements to maintain student interest (Yulaika et al., 2020). By catering to the students' needs and learning styles, the material can become more effective in conveying the subject matter.

The quiz section includes five questions that evaluate student learning outcomes, aligned with the learning objectives. Quizzes are a crucial part of the learning process as they provide immediate feedback and help reinforce the material covered. The questions should be thoughtfully crafted to challenge students and encourage critical thinking. The student worksheet contains assignments related to pupuh pangkur. These assignments should be designed to encourage active learning and application of knowledge (Rockinson et al., 2013). By engaging students in practical tasks, the worksheets help solidify their understanding and make the learning experience more interactive. The assessment guide provides guidelines for teachers to score student learning outcomes. This guide ensures that the evaluation process is consistent and fair, offering clear criteria for assessing student performance. Effective assessment guides help teachers provide constructive feedback, which is essential for student growth.

Finally, the summary offers a concise recap of the entire material on the song macapat pupuh pangkur. Summaries are important as they reinforce key points and provide students with a quick review of what they have learned, aiding in retention and comprehension. Teaching materials should always be designed with students' needs in mind (Yulaika et al., 2020; Rockinson et al., 2013). They should be engaging and inviting to make learning more interesting and effective. By considering the interests and learning preferences of students, educators can create materials that not only educate but also inspire and motivate. Well-designed teaching materials can transform the learning experience, making it more enjoyable and impactful for students.
The next step after designing teaching materials is to design a cover with consideration of the results of the analysis of the needs of students and teachers. The following is an image of the cover design used in the prototype e-books singing teaching materials.

Figure 1. Cover Design for the prototype of the Macapat Song Teaching Materials

The next step is to determine the base color on the prototype e-books macapat song teaching materials. The base color in this prototype is used as the prototype background color on every page except the cover page. Once the background color is determined, the next step is layout planning. The layout is prepared by adjusting the needs analysis that has been carried out, which is arranged in a variety of ways. Election font (typeface) is done by considering the elements of aesthetics, clarity, and the results of the analysis of the needs of teachers and students. These considerations aim to produce interesting teaching material designs as well as clear legibility. The font types used are Times New Roman, Bulleto, and Acme regular. The following is the result of a combination of color variations, layout, and font selection.

The preparation of material in the prototype teaching materials uses book references such as Serat Wulangreh Angitan Sri Pakubuwana IV. Additionally, the preparation process incorporates insights from interviews and discussions with subject teachers to ensure that the material is relevant and tailored to the students' environment. The results from the literature study, interviews, and discussions are carefully analyzed for their suitability and relevance to the learning objectives. After compiling the teaching materials, the next step is to create video media to support the content of the e-books teaching materials. This decision is based on the analysis of the needs of students and teachers, who expressed a desire for the prototype to include audio-video features (Magdalena et al., 2020). These features enhance the learning experience by providing dynamic and interactive elements that traditional text-based materials may lack. The audio-video content demonstrates how to develop the macapat song Barrel 6 barrel Pangkur, making the learning process more engaging and accessible.

The integration of audio-video features is crucial because they cater to various learning styles, particularly auditory and visual learners. These features serve as valuable learning references, allowing students to see and hear how macapat songs are developed. For example, to access the video content, students simply need to click the navigation button on page 6, labeled "Come on, listen to this song!!" This user-friendly design ensures that students can easily interact with the multimedia content, enhancing their understanding and retention of the material (Yuliaka et al., 2020). Teaching materials designed with electronic elements and interesting videos are essential in modern education. They not only make the content more engaging but also help in delivering complex information more effectively. Videos can demonstrate processes, provide visual and auditory examples, and break down intricate concepts into more manageable parts (Oktapiani et al., 2024; Ningsih & Yuliyanti, 2023). This
approach helps to maintain students' interest and encourages active participation in the learning process.

By incorporating electronic teaching materials and videos, educators can create a more immersive and interactive learning environment. This method is particularly beneficial in subjects that require practical demonstration, such as music or arts. It allows students to learn at their own pace and revisit the material as needed, fostering a deeper and more comprehensive understanding of the subject matter (Bakla & Mehdiyev, 2022; Lin, 2022). Therefore, the development of prototype teaching materials that include electronic elements and engaging videos significantly enhances the teaching and learning experience. These materials are designed to meet the needs of both students and teachers, ensuring that the content is relevant, interactive, and accessible. By leveraging technology in this way, educators can provide a more effective and enjoyable educational experience, ultimately leading to better learning outcomes.

**Expert Validation Test Results**

To find out whether a learning media prototype is feasible to use, then a validity test is carried out. The validation test involves presenting the media prototype to the media validator. The validator then assessed various aspects, including ease of use, ease of application download, image clarity, color combination accuracy, layout suitability, typeface attractiveness and legibility, navigation button attractiveness and clarity, and overall media accuracy and attractiveness. Assessment is carried out using a scale of 1-5, with 1 as the minimum value, and 5 as the maximum value. The research results from the media validator are then represented in the following graph.

![Figure 2. Display of Video Pages on Teaching Materials](image-url)

**Figure 3. Content Feasibility Validation Test**
The results of the expert validation test analysis show that the prototype teaching materials show that the teaching materials meet the expected standards and needs. The material presented is contextual so that it gets a value scale of 5. Furthermore, the material presented is relevant to the applicable KI and KD while at the same time providing benefits in supporting the student learning process so that it gets a score of 4. The accuracy and depth of the material gets a score of 3, so it is necessary to provide suggestions and repair. Media validators provide suggestions and input to add depth to the material presented in the developed electronic teaching materials. Based on these suggestions and input, improvements were made to the contents of the teaching materials.

![Figure 4. Presentation Feasibility Test](image)

The results of the expert validator test analysis in the presentation feasibility section can be said to be quite good. The sub-chapters presented get a score of 5 so that it can be said to be "very good". The concept of writing coherent material is enough to attract students' interest and attention so that it can stimulate student creativity. Therefore each gets a score of 3. Suggestions and input from expert validators regarding the feasibility of presentation include: it is necessary to add more attractive images, and it is necessary to add modeling forms to make them more coherent and use interesting group names.

![Figure 5. Language feasibility validation test](image)

After carrying out the presentation feasibility validation test, the next step is to conduct a language feasibility test. In the language feasibility test, a fairly good score was obtained on the readability of the message and the appropriateness of the students' language level. In this section, suggestions and input were received by expert validators, namely the material to be
presented using the Javanese variety of manners with choicessay (words) that are easier for students to understand. Based on the suggestions and input, further improvements were made. Furthermore, language feasibility in the grammar and spelling sub-feasibility gets a score of 5 or very good so that no further improvement is needed.

In the graphical feasibility validation test, the aspects assessed counted more than the other feasibility aspects. The graphical feasibility test got a pretty good score because it was dominated by a score of 3 on several aspects of the assessment. Layout display, color, font combination, object proportions, and margins get a score of 3. Therefore, suggestions and input are needed as material for improving media prototypes. Some suggestions from the validator regarding some of these aspects include the need for attractive pictures, color selection according to the wishes and needs of students, as well as layout and font selection. Based on the suggestions and input, improvements were then made. The next aspect that is assessed is the separation between paragraphs and the size of the title which gets a score of 4. The results of the validator's assessment are then slightly revised so that the resulting prototype is better. Improvements to the separation between paragraphs need to be improved because they are continuous with the need for improvements in the presentation of content that needs to be presented contextually. In the aspect of placing the title, subtitle, and several supporting illustrations, it has received a score of 5 so that it can be said to be very good.

After validating the product, the next step is to carry out trials as well as carry out external validity by providing teacher and student responses to the electronic teaching materials of Tembang Macapat. The trial was carried out in two classes. The purpose of conducting product trials is to find out the description and responses of students and teachers of the prototype of the electronic teaching material of Tembang Macapat. Overall, the electronic teaching materials of Tembang Macapat received a positive response from teachers and students. Electronic teaching materials of Tembang Macapat can make it easier for teachers to convey material and examples in learning. And students can understand the material and examples easily and directly. Detailed material, interactive videos, and examples of questions in electronic teaching materials Tembang Macapat stimulate students' creativity in studying Tembang Macapat material.
CONCLUSION

Based on the research and observations conducted, it can be concluded that there is a significant need to develop learning media to effectively teach macapat song material to junior high school students. To address this need, electronic teaching materials for macapat songs have been developed. These materials aim to enhance the learning experience by providing interactive and engaging content that aligns with the needs and preferences of both teachers and students. The developed application has undergone rigorous validation tests by expert validators to ensure its content, presentation, language, and graphic elements meet high standards of quality. The validation process confirms that the electronic teaching materials are not only accurate and educationally sound but also visually appealing and user-friendly. This comprehensive validation ensures that the materials are effective tools for teaching and learning macapat songs.

In addition to expert validation, the electronic teaching materials have been evaluated for their acceptance among students and teachers. This evaluation involved assessing the usability and effectiveness of the materials in real classroom settings. The positive feedback from both students and teachers indicates that the electronic teaching materials are well-received and deemed beneficial for the learning process. The successful validation and positive reception of the electronic teaching materials highlight their feasibility and practicality as learning media. These materials provide a modern and interactive approach to teaching macapat songs, making the learning process more engaging and effective. By integrating technology into traditional learning, educators can better meet the educational needs of their students and enhance the overall quality of education. Therefore, the development and validation of electronic teaching materials for macapat songs demonstrate a significant advancement in educational resources for junior high school students. These materials have been meticulously crafted and tested to ensure they meet educational standards and cater to the preferences of both students and teachers. As a result, they are well-suited to be implemented as effective media in learning activities, promising to enrich the educational experience and improve learning outcomes.

REFERENCES


