

# Development of Problem-Based Learning (PBL) Teaching Materials Assisted by Wordwall in PAI Learning and Ethics of SMP Negeri 1 Tanete Luwu Regency

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## ABSTRACT

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This study aimed to develop teaching materials for Islamic Religious Education (PAI) and Character Education using a Problem-Based Learning (PBL) approach assisted by Wordwall on the topic of compulsory prayers (salat wajib) for Grade VIII students at SMP Negeri 1 Tanete, Luwu Regency, and to determine the validity, practicality, and effectiveness of the developed materials. The study employed Research and Development (R&D) with a descriptive qualitative- quantitative approach. The development model used was ADDIE (Analysis, Design, Development, Implementation, Evaluation). The research was conducted in the even semester of the 2025/2026 academic year (January-February 2026) with research subjects consisting of a content expert, a media expert, and 23 Grade VIII students (14 female and 9 male). Data were collected through observation, expert validation, student response questionnaires, and a learning achievement test. Data were analyzed descriptively using quantitative techniques (mean scores and percentages) and qualitative descriptions based on validators' suggestions and student feedback. The results showed that the teaching materials were categorized as highly feasible based on content expert validation with an average score of 4.67 and media expert validation with an average score of 4.60. In terms of practicality, the student response questionnaire produced an average score of 3.65, categorized as highly practical. The effectiveness of the materials was indicated by postimplementation learning outcomes: 20 out of 23 students (86.96%) achieved scores  $\geq$  the Minimum Mastery Criterion (KKM) of 75, thus meeting the effectiveness criterion ( $\geq 75\%$  mastery). Therefore, the PBL-based teaching materials assisted by Wordwall were concluded to be highly feasible, highly practical, and effective for use in PAI and Character Education learning for Grade VIII students at SMP Negeri 1 Tanete, Luwu Regency.

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## 1. INTRODUCTION

PAI learning and ethics have become the main focus in the Independent Curriculum, its implementation in schools still faces various obstacles. The learning process still tends to be memorized, less contextual, and has not fully encouraged students' active involvement in critical thinking and solving real-life problems. In this context, the application of the Wordwall-Assisted Learning Problem Based Learning model is one of the approaches that is relevant to the demands of the curriculum because it places students as active learning subjects. This model not only develops critical thinking skills and personal responsibility, but also acts as a means of strengthening character through problem-solving activities with educational and Islamic value.

In the learning process of PAI and Ethics, the integration of Wordwall-Assisted Learning Based Learning problems has the potential to be a bridge between the understanding of Islamic values and their application in social life. However, the success of the implementation of this model still depends on the support of learning media that is interactive, contextual, and engaging for students.

The development of information technology has encouraged learning innovations that emphasize the active involvement of students. The advancement of communication and technology in the digital era has had a major impact on various aspects of life, including in the field of education. The conventional teacher-centered model is considered less effective in practicing problem-solving and collaboration, so that Problem Based Learning (PBL) emerged as a solution. PBL makes real problems a learning center to foster critical thinking, problem-solving, and independent learning skills. By presenting authentic and meaningful problems, students are encouraged to actively seek solutions and build deeper understanding. This model is relevant applied in a variety of subjects, including Islamic Religious Education (PAI), which requires a contextual and transformative approach.

The application of PBL in PAI and ethics learning is important because the moral and social challenges of students are increasingly complex, so it requires strategies that are not only cognitive, but also able to encourage the internalization of religious values. PAI and ethics learning must encourage students to understand, internalize, and implement Islamic teachings in real life, not just memorize postulates or concepts. However, in practice, the PAI learning approach in schools is still dominated by one-way lectures centered on teachers, non-contextual materials, and a lack of innovation in delivery methods. Innovative learning media can increase students' motivation, interest, and understanding, and make learning more interesting. PBL is an alternative that is able to answer these problems, because it encourages active involvement of students in the process of thinking and discussing real situations. PBL allows students to integrate Islamic values with daily life, so as to create meaningful learning and build character.

In order to support the optimal implementation of PBL in PAI learning and ethics, media that is not only visually appealing, but also able to encourage active involvement of students is needed. In this aspect, digital technology plays a very important role. One form of utilization of this technology is the use of the Wordwall application as a digital-based learning medium. Wordwall is an application that can be used as a learning medium, an online-based assessment tool and a learning resource for students. One of the advantages of Wordwall lies not only in its attractive visual appearance, but also in its ability to present material in a variety and can be adjusted to learning needs. The use of digital-based learning media such as Wordwall is able to create a more conducive learning atmosphere in the classroom. Thus, the use of digital media makes learning PAI and Ethics more interesting, interactive, and fun, as well as helping students understand religious and moral values in a more contextual and meaningful way.

## 2. METHODS

This research is a *Research and Development (R&D)* research designed to produce *Problem-Based Learning (PBL)*-based teaching materials products assisted by Wordwall in PAI and Ethics learning. In its implementation, this study uses a descriptive qualitative-quantitative approach, which not only focuses on product design and production, but also describes the responses of experts and students to

the developed teaching materials, as well as analyzing its quality from the aspects of validity, practicality, and effectiveness.

The development model used as a reference in this study is the ADDIE (*Analysis, Design, Development, Implementation, Evaluation*) model developed by Dick and Carey. All stages of this model are carried out systematically and sequentially, starting from the analysis of learning needs, the design of teaching materials, the development and validation of products, the application of teaching materials in the context of real learning, to evaluation to assess their feasibility and effectiveness. With this framework, research not only produces a theoretically viable product, but also ensures that the teaching materials can be optimally implemented in the classroom.

The data sources in this study consist of two types. First, primary data obtained directly from the results of validation of material experts and media experts, the results of observations of learning implementation at the implementation stage, the results of student response questionnaires, and data on learning outcomes after the use of PBL-based teaching materials assisted by Wordwall. This data is used specifically to assess aspects of the validity, practicality, and effectiveness of the developed product. Second, secondary data sourced from various supporting documents, such as curriculum, syllabus, lesson plans, PAI textbooks and Ethics, as well as relevant scientific references as a foothold in the design and development of teaching materials.

To collect this data, this study used five research instruments. The first instrument is a material expert validation sheet which is used to assess the feasibility of teaching materials from the aspects of content suitability with basic competencies, conceptual accuracy, integration with the PBL model, and clarity and systematics of material presentation. The second instrument is a media expert validation sheet focused on visual appearance aspects, *layout design*, Wordwall media interactivity, ease of navigation, and the attractiveness of teaching materials as digital learning media. The third instrument is in the form of a student response questionnaire which is compiled using the Likert scale to obtain data on the level of practicality and applicability of teaching materials, including aspects of attractiveness, readability, ease of use, clarity of instructions, and its usefulness in supporting material understanding. Fourth, the learning implementation observation sheet is used to observe the process of implementing teaching materials in the classroom, including the involvement and activeness of students in discussions and the suitability of learning implementation with the PBL scenario that has been designed. Finally, the learning outcome test is used to measure the effectiveness of teaching materials on improving students' understanding after participating in learning.

The data collection technique in this study is adjusted to the stages of the ADDIE model and is carried out in three ways. First, observations were carried out to obtain an overview of the initial conditions of PAI learning and Ethics, including the methods used by teachers, the level of student activity, and problems that arise in the learning process, as well as observing the implementation of the use of teaching materials at the implementation stage. Second, validation is carried out by material experts and media experts on the developed teaching material products, with the aim of assessing its feasibility from the aspects of content, curriculum suitability, material accuracy, visual appearance, interactivity, and suitability with the PBL model. Third, questionnaires are given to students after the trial and implementation process to find out the level of practicality and usefulness of the teaching materials, as well as to validators to obtain a structured assessment of the feasibility of the product.

The collected data was then analyzed through four approaches. The validity analysis was carried out by calculating the average score of the assessment results of material experts and media experts, then categorized into five levels, namely Very Feasible (4.21–5.00), Feasible (3.41–4.20), Fairly Feasible (2.61–3.40), Less Feasible (1.81–2.60), and Not Feasible (1.00–1.80). Teaching materials are declared valid if at least they obtain a Worthy category. The practicality analysis was carried out in a similar way to the student response questionnaire data, with the categories of Very Practical (3.26–4.00), Practical (2.51–3.25), Less Practical (1.76–2.50), and Impractical (1.00–1.75), where the teaching material was declared practical if it was at least in the Practical category. The effectiveness analysis is carried out by calculating the percentage of learning completeness based on the applicable Minimum Completeness

Criteria, provided that the teaching materials are declared effective if at least 75% of students achieve grades according to the Learning Outcomes. Meanwhile, qualitative analysis is applied to data in the form of inputs, suggestions, and comments from material experts, media experts, teachers, and students, which are described narratively as the basis for revision and improvement of products so that the teaching materials developed become more optimal and in accordance with learning needs.

### 3. FINDINGS AND DISCUSSION

The results of the study showed that the development of Problem-Based Learning (PBL) based teaching materials assisted by Wordwall in PAI and Ethics subjects grade VIII at SMP Negeri 1 Tanete Luwu Regency made a significant contribution to improving the quality of learning. Development is carried out systematically through the stages of the ADDIE model which include analysis, design, development, implementation, and evaluation. Each stage is carried out sequentially so that the products produced are in accordance with the learning needs in the classroom. In the initial stage, the researcher conducts observations to identify the learning conditions that take place. The results of the observation show that the lecture method is still the dominant approach used by teachers. The use of digital learning media is also still limited so that student interaction is not optimal. This condition causes students to tend to be passive and less involved in the learning process. Therefore, the development of PBL-based teaching materials assisted by Wordwall is considered relevant as a more innovative learning solution.

The analysis stage is the main basis in determining the direction of the development of teaching materials that suit the needs of students. Researchers found that most students had difficulty understanding the material of mandatory prayers in depth because learning was one-way. Teachers have also never integrated the Problem Based Learning model in the learning process before. In addition, the learning media used is still conventional and does not utilize digital technology. This situation encourages the need for teaching materials that are able to increase students' critical thinking activities. The PBL model was chosen because it has problem-based learning characteristics that are relevant to real life. The use of Wordwall as an interactive media is expected to increase students' motivation to learn. This analysis stage provides a real picture of the need for the development of more innovative teaching materials. The results of the analysis then became the basis for compiling a systematic teaching material design.

In the design stage, the researcher compiles a teaching material structure based on the Problem Based Learning syntax which consists of problem orientation, student organization, investigation, presentation of results, and evaluation of learning. The material developed is focused on the topic of mandatory prayer with a contextual approach. The design of teaching materials also pays attention to the conformity with the CP/TP of the Independent Curriculum. The researcher compiled concept maps, student activity sheets, and learning scenarios that were integrated with Wordwall activities. Visual aspects such as colors, layouts, and illustrations are designed to be attractive and easy for middle school students to understand. In addition, the evaluation design is prepared based on interactive games to increase student participation. The design stage is carried out carefully so that the products produced have a clear learning flow. Thus, the design of teaching materials is expected to be able to support active and meaningful learning.

### 4. CONCLUSION

Based on the results of research and discussion on the development of Wordwall-assisted Problem Based Learning (PBL)-based teaching materials in PAI and Ethics class VIII subjects at SMP Negeri 1 Tanete Luwu Regency, it can be concluded that this research has succeeded in producing valid, practical, and effective teaching material products through a series of systematic processes.

The development process of teaching materials is carried out through the stages of the ADDIE model which include analysis, design, development, implementation, and evaluation. The stage begins with an analysis of learning needs as an initial foundation, then continues with the design of a problem-

based teaching material structure, comprehensive product development, direct implementation to students, and evaluation as an effort to improve teaching materials to be more optimal and in accordance with the real learning context.

In terms of validity, the results of assessments from material experts and media experts show that the teaching materials are in the category of very feasible. The material expert emphasized that the content of the teaching material was in accordance with the CP/TP of the Independent Curriculum and scientifically correct in Islamic Religious Education, while the media expert stated that the visual display, navigation, and integration of Wordwall had met the principles of effective learning media.

As for the practicality aspect, the students' responses showed that the teaching materials were in the very practical category. Students gave positive responses to the attractiveness of the appearance, ease of use, and usefulness of teaching materials in helping the understanding of mandatory prayer materials while increasing their involvement during the learning process.

Meanwhile, the effectiveness of the teaching materials is proven through the results of student learning tests after the implementation stage, where as many as 20 out of 23 students or equivalent to 86.96% managed to achieve a score above or equal to the Learning Outcomes that have been set. This percentage has exceeded the minimum effectiveness criterion of 75%, so that Wordwall-assisted Problem Based Learning (PBL)-based teaching materials are declared effective in improving learning outcomes while encouraging active involvement of students in learning activities.

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