



Integrated Thematic Teaching Materials with Microsoft Sway Based on Problem-Based Learning Model in Elementary School

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ABSTRACT

Microsoft Sway is one of several software programs developed by Microsoft to present information in a way that is easy to understand. This research aims to create integrated thematic teaching materials with Microsoft Sway-based problem-based learning models in grade V SD that are valid and instantly. The procedure used in this research is an R&D procedure that uses the ADDIE development model. The results obtained from this product development research are that the module expert validator got a score of 92.8%, the media/graphic expert validator got a score of 90%, and the language expert validator got a score of 95%, each of which is categorized as "very valid." For the practicality questionnaire, the reactions of educators and student participants received scores of 93.33% and 92.85%, both of which were categorized as "very instant." This research concludes that it can create integrated thematic teaching materials with the problem-based learning model based on Microsoft Sway in grade V SD, which is very valid and very practical.

Keywords: Teaching Materials; Integrated Thematic Teaching; Problem-Based Learning; Microsoft Sway; Elementary School

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1. INTRODUCTION

Education in the fourth industrial revolution is education that incorporates technology into the learning process, also known as "cyber systems." Digital technology can create an information technology-based educational platform as a way to support improving the learning process and advance education in Indonesia (Zen, 2018). The use of this technology meets the requirements of 21st-century learning (Zulvira, 2022). In today's complex, connected digital age, individuals and organizations alike

need new tools and skills—entrepreneurial, business, management, leadership, creativity, design, and cross-cultural capacities¹—that will enable them to strategize and innovate sustainably (Wrigley et al., 2018). Responding to these conditions, indirectly, education must adapt by integrating technology into learning at every level. Learning tools must be designed in such a way that they can accommodate current developments. Teachers no longer use old ways, but simultaneously change their mindset and use the latest learning approaches and models. The industrial revolution 4.0 and 21st-century skills leave fundamental problems in the implementation of 2013 curriculum teaching materials with an integrated thematic approach. It is very important for teachers to integrate technology into learning (Desyandri et al., 2021).

This is very relevant to the characteristics of today's students, who are more connected to the development of knowledge and technology. For the achieved learning objectives, the teachers should be able to create an exciting learning process and provide a convenience lesson atmosphere for the students. One of the components that can help the achievement of learning objectives is the use of instructional media (Miaz et al., 2018). Improving the quality of education in Indonesia in the era of the Industrial Revolution 4.0 must be adapted to the needs of the scientific age, especially in making teaching materials. Teaching materials are elements that must exist to support the teaching and learning processes. Teaching materials are all forms of materials that systematically allow students to learn with the designed curriculum that applies (Lestari, 2013). Teaching materials are all materials that systematically display comprehensive skills that will be mastered by students and can be used in the learning process (Syafriatma & Amini, 2021). Teaching materials in the era of the Industrial Revolution 4.0, according to the curriculum, are characterized by the use of technology in making integrated thematic teaching materials.

Integrated thematic learning combines various subjects into various themes (Sari et al., 2018). Integrated thematic learning is learning that focuses on themes. The teaching offers learners overall meaningful learning experiences (Erita et al., 2020). Themes created can connect learning activities both within certain subjects and between them. An "integrated thematic" is a system and approach that involves various disciplines or subjects to provide broadly meaningful experiences for students (Anshory et al., 2013). Theme-integrated learning is also interpreted as learning using internal themes that combine several subjects to provide meaningful experiences for students (Nasrul, 2018). With this integration, educators must have the creativity, skills, and courage to develop and package materials well. But in reality, there are still many educators who have difficulty using technology to develop teaching materials.

Based on the results of observations made in three elementary schools with a total of 80 respondents in cluster 1, East Padang sub-district, West Sumatra, which were carried out on July 19, 2022, and August 8, 2022, it was found that the delivery of learning materials that took place in these schools did not use materials for teaching because it can be seen that when integrated thematic learning is implemented, students only focus on using student books and student worksheets from publishers as

the main source of learning materials. Then there is no use of digital-based teaching materials as a support in the learning process. Then, Microsoft Sway-based teaching materials have not yet been implemented in these schools. and the less optimal utilization or use of LCD projectors as existing facilities in schools when the integrated thematic learning process takes place.

The problems stated above have an impact on students in that: (1) students are less active in learning; and (2) during the integrated thematic learning process, which is still conventional, the student learning process is less interesting and less fun, causing boredom for students. (3) students do not understand the concept of learning materials, and (4) students do not get direct experience in learning. Therefore, it is necessary to make improvements in the learning process so that the implementation of thematic learning can be successful as expected (Fitria, 2020). Educators must be able to develop teaching materials that prioritize and challenge students' abilities to solve real-world problems and can make students active participants in thematic learning processes that are integrated into learning models. One of the learning models used in the development of integrated thematic learning is the PBL model.

The PBL model is a learning model that involves students in learning activities by prioritizing real problems in the school environment (Assegaff & Sontani, 2016). Problem-based learning is also known as active learning because students find information for themselves in the process (Desyandri, 2018). PBL is used in class to teach content that is not monotonous with other content. This is because PBL is used in the classroom for many subjects. Theme 2 Clean Air for Health, which is the learning theme in Class V of the Elementary School, is one of the materials that can be used with the PBL model. This material can be disseminated in a unique and useful way in the process of teaching and learning subject matter at VSD.

This information may be used by today's industry and technology professionals, including Microsoft Sway. Microsoft Sway is one of several software products developed by Microsoft to present information in an easy-to-understand way (Ardian et al., 2020). Many different templates can be used with Microsoft Sway. In addition to displaying content, Microsoft Sway allows users to upload images, videos, and text to websites to display content. Because Microsoft Sway can also be used with live worksheets and Microsoft forms to evaluate worksheets and online questions, this process can also take longer. On the other hand, Microsoft Sway features are limited to interactive presentation and pre-existing data structures, allowing for faster learning and a more comprehensive presentation of content. This feature of Microsoft Sway is all about providing users with an efficient, effective, and efficient billing process. According to Arzfi et al. (2021), Microsoft Sway can be used to improve the quality of content but does not provide the necessary tools to prevent theft, as evidenced by its presence on websites. By using a valid and practical problem-based learning model based on Microsoft Sway in VSD, this paper proposes a method of implementing a problem-based learning approach. Workbooks are visible to authors and the person who wrote them online, so workbooks can be used by both the author and the person who wrote them in person using a laptop, computer, or smartphone.

2. METHOD

2.1. Types of Research

This study used research and development (R&D) with the ADDIE model: analyze, design, develop, implement, and evaluate (Molenda, 2003). The ADDIE model is merely a colloquial term used to describe a systematic approach to instructional development, virtually synonymous with instructional systems development (ISD) (Aldoobie, 2015). This development model to produce teaching materials that combine with the Massive Open Online Courses (MOOC) system used the Microsoft Sway application.

2.2. Subject/Respondent

The subjects of this study were four teachers who implemented teaching materials development products for 80 fifth grade elementary school students spread across East Padang District, Padang City, and West Sumatra-Indonesia.

2.3. Procedure

The ADDIE development model developed by Robert Maribe Brach (2009) in Sugiyono (2019: 765) has several stages that must be passed. The activities carried out at each stage of development are described below.

2.3.1. Analysis

The use of observation sheets, interview guideline sheets, and questionnaires collected consisting of 3 teacher respondents and 80 respondents of grade V primary school students located in cluster 1 of the Padang City sub-district, West Sumatra requires analysis.

The researchers identified several obstacles in their initial survey in four primary schools, including those teachers in three schools who did not use the materials when implementing integrated thematic learning, students who only committed to using student books and LKPDs from publishers as the main source of learning materials. Then there is no learning support provided by digital textbooks. However, these schools have not used Microsoft Sway-based teaching materials.

Students are affected by the constraints faced by these teachers. This should be seen where (1) students are less dynamic in learning, (2) In addition, the development of coordinated topical experiences that are still traditional in nature, makes the student's educational experience less interesting and less enjoyable, causing a feeling of exhaustion for students, (3) Students do not understand the material they are studying, and 4) They do not have a direct learning experience. Educators can use learning models to engage students in integrated thematic learning processes and develop teaching materials that are persistent and must challenge students' abilities to solve real-world problems.

Following 21st-century learning, researchers offer solutions in the form of thematic teaching materials and Microsoft Sway-based Problem-Based Learning models for class V SD based on the

findings of a needs analysis. This curriculum analysis phase includes examining indicators, learning objectives, corecompetencies, basic competencies, and learning materials. The findings of this study are related to Subtheme 1: "How Does the Body Process Food?" and Theme 2: "Clean Air for Health". six studies.

2.3.2. Design

This stage is where a project to produce a new product is planned. The research team carried out the following tasks: (1) to develop test standards by incorporating learning competencies (core competencies, basic competencies, indicators, and learning objectives); (2) to make teaching materials according to the learning model used; (3) make learning materials according to the structure of the material; (4) make teaching materials according to the application; and (5) create menus that will be displayed.

The following are some pictures of the product design display of integrated thematic teaching materials with the Microsoft Sway-based Problem Based Learning model in class V SD that the researcher designed:



Figure 1. Access to Microsoft Sway link

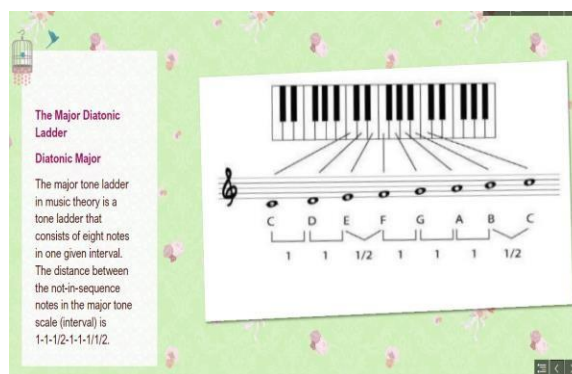
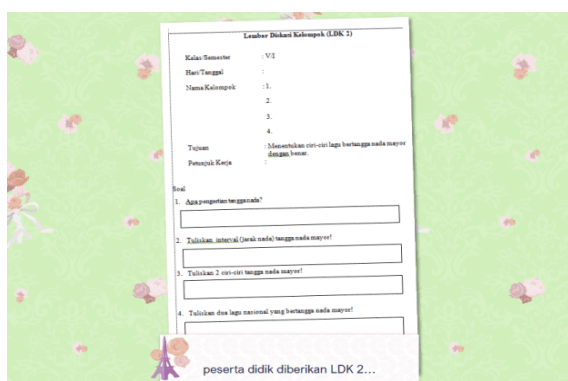
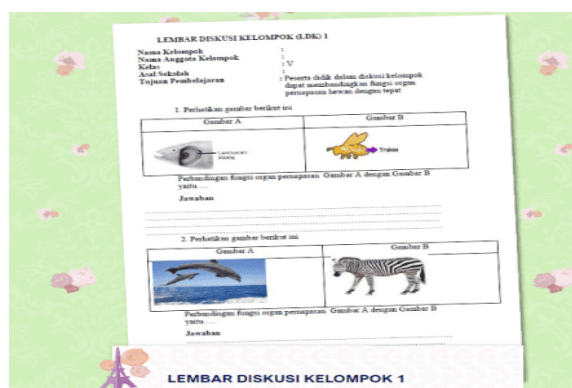


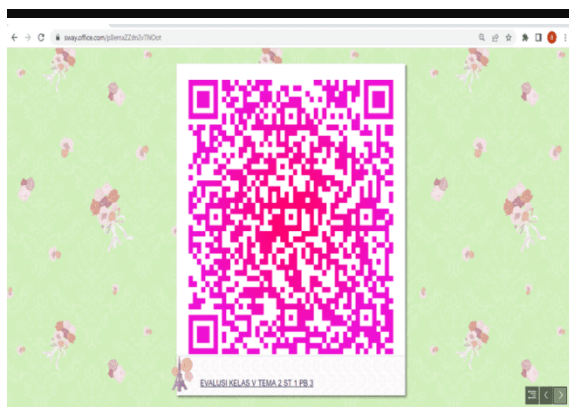
Figure 2. Display of Music subject matter



Picture 3. Display of Student Worksheets (LKPD)



Picture 4. Display of Group Discussion Sheets



Picture 5. Appearance QR Code to access evaluation questions

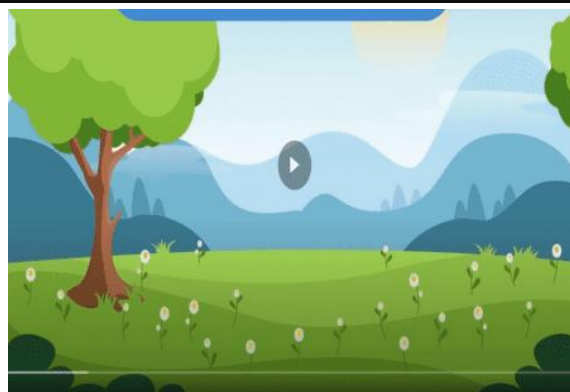


Figure 6. Appearance Tutorial video

2.3.3. Development

The data from the validation test results were obtained from 3 experts. The instrument that the researcher used was a validation questionnaire sheet. Here the validator only examines aspects related to thematic learning material products and products integrated with Microsoft Sway-based problem-based learning models that have been created by researchers. The results of the evaluation of integrated thematic teaching materials are question-based learning models based on Microsoft Sway based on material aspects.

Table 1. Results Test Validation on Aspect Material

Expert Validator Material	Percentage (%)	Category
I	92.5	Very Valid
II	91	Very Valid
III	95	Very Valid
Amount Percentage (%)	278.5	
Average Percentage (%)	92.8	Very Valid

It can be concluded that the integrated thematic teaching materials with the Microsoft Sway-based PBL model developed by researchers are feasible to use and have been tested for feasibility from a material aspect.

Assessment and validation of products from linguists were obtained from one lecturer who is a language expert. The instrument that the researcher used was a language validation questionnaire. integrated thematic teaching materials with the Microsoft Sway-based Problem Based Learning model in language validation obtained a score of 95% with a very valid category, and it can be concluded that the integrated thematic teaching materials with the Microsoft Sway-based Problem Based Learning model in class V SD developed by the researcher is feasible to use and tested its feasibility from the aspect of language.

Product evaluation and validation from media/graphics experts were obtained from one lecturer who is an expert in learning media. The instrument that the researcher used was a media validation questionnaire. Integrated thematic teaching materials with the Microsoft Sway-based Problem-Based Learning model in media validation obtained a score of 90% with a very valid category, and it can be concluded that the integrated thematic teaching materials with the Microsoft Sway-based Problem Based Learning model developed by researchers are feasible to use and tested for feasibility media aspect.

2.3.4. Implementation

The implementation phase, in which the researcher tested integrated thematic teaching materials with the Microsoft Sway-based Problem Based Learning model, began after the thematic teaching materials integrated with the Microsoft Sway-based PBL model had gone through a process of validation, and revision, and had been declared valid and feasible to be tested. for large and small groups. Integrated thematic learning was used to conduct these small and large group trials. The researcher then distributed instruments in the form of practical questionnaires to teachers and students to carry out practicality tests after the product was tried out in small groups and large groups. The researcher obtained the following results from the practicality test assessment during the trial.

Table 2. Results Test Teacher practicality.

Class V Teacher User	Percentage (%)	Category
Hamida Gusnilawati, S.Pd	95	Very Practical
Annel Fitra, S.Pd	90	Very Practical
Hilma Gusnira, S.Pd	95	Very Practical
Amount Percentage (%)	280	
Average Percentage (%)	93.33	Very Practical

Table 3. Results Test Practicality Participants educate

Class V Student User	Percentage (%)	Category
SDN 05 Sawahan	92.85	Very Practical
SDN 33 Sawahan	96.42	Very Practical
SD Pertiwi 3	89,28	Very Practical
Amount Percentage (%)	278.55	
Average Percentage (%)	92.85	Very Practical

From the educator's point of view, the level of practicality is very high, namely 93.33%, while from the perspective of students, the level of practicality is very high, namely 92.85%. It can be concluded that the integrated thematic teaching materials based on the Microsoft Sway Problem-Based Learning model are said to be very useful and can be used by fifth-grade elementary school students.

2.3.5. Evaluation

The stages of evaluation in this development research refer to: (1) assessment of product design and development from the aspect of suitability with the results of the preliminary analysis, (2) practicality and ease of operating the product in learning, (3) evaluating learning outcomes by students

after using the product, and (4) evaluating the product itself by giving questionnaires to teachers and students regarding the deficiencies and obstacles encountered in using the product. At the same time, this evaluation will be taken into consideration to further improve the product in the future.

2.4. Data, Technique Collection, and Instrument

Data is collected, with questionnaires and tests. The questionnaire is a data collection technique which is done by providing a set of questions or written statements to respondents for answers by respondent other (Sugiyono, 2021, p.s. 199). Test results Study student used for know mark results effectiveness student.

2.5. Technique Analysis Data

Data analysis techniques were carried out to obtain appropriate letter card-based teaching materials with the criteria of validity, practicality, and effectiveness. A validity test is used to find out the validity of an inappropriate instrument means no one can measure What is measured so the results can't be in accordance and no one can be trusted.

Practicality Analysis. The student response questionnaire in this study using a Likert scale was conducted to determine the practicality of teaching materials integrated thematically with the Microsoft Sway-based Problem Based Learning (PBL) model. Furthermore, the effectiveness analysis in the form of a test sheet is used to measure something effectiveness of teaching materials integrated thematic with the Microsoft Sway-based Problem Based Learning (PBL) model.

Table 4. Results Evaluation Material Teach Interactive

No	Aspects assessed by the Validator	Suggestions / Feedback from Expert
1	Material	1) Customize material with RPP indicator 2) Pay attention to the writing format of teaching materials 3) Use interesting pictures _ to explain the material
2	Language	1) Use legible letters _ And interesting for the participant to teach, colour the background, and then use effective sentences _ and raw following the Indonesian language Standard
3	Media/ Graphics	1) Music replaced with interesting can _ motivating and give Spirit Study 2) Size letter varied 3) Choice of light colour on the background

3. RESULTS & DISCUSSION

Work on integrated thematic teaching materials using the Microsoft Sway-based Problem Based Learning model developed by researchers using the ADDIE development model with five stages of development. By using the Microsoft Sway-based Problem Based Learning model, this research is development research that produces integrated thematic teaching materials. Researchers have created products that conform to the manufacturing structure by design. In class V of SD Semester I, this product

is used as a tool to assist teachers and students in participating in an integrated thematic learning process. This helps improve the quality of learning, keeps students engaged in learning, and keeps learning from being boring for students.

Testing is needed so that the product developed becomes a quality product, starting with testing the validity, usability and efficacy of the product. Doing this test is very important. Before being tested in class V SD in the semester I, the product that the researchers developed was validated by experts who are lecturers from the Faculty of Education, Padang State University, and one teacher with an M.Pd who teaches at SD. The validation aims to determine the quality of integrated thematic teaching materials with the Microsoft Sway-based Problem-Based Learning model. The questionnaire that the researcher has given to the validator is used for validation. The validators involved in this exploration are media, material, and language specialists. Validators will provide evaluations, conversations provide comments and ideas on items created by scientists.

The validation results obtained show the validity of a product by showing that the product developed by the researcher is valid in terms of the material and language used, as well as appearance, sound, animated images, and operation.

3.1. Teacher Response Questionnaire

Teacher response questionnaires are used to assess the practicality of learning devices in terms of the ease of use of interactive teaching materials, their usefulness, and their appearance. From the results of practicality by 3 teachers, each teacher obtained the following percentage scores: teacher 1 was 95%, teacher 2 was 90%, and teacher 3 was 95%.

Based on the three results obtained by the teacher. The teacher's response to the integrated thematic teaching materials that have been used shows an average score of 93.33 %. Based on the product assessment classification guidelines that have been developed, the practical results of teacher responses to integrated thematic teaching materials with the Microsoft Sway-based Problem Based Learning model are obtained in the very practical category.

3.2. Student Response Questionnaire

Student response questionnaires are used for the practicality of learning devices in terms of the ease of interactive multimedia, usability and appearance. Student answers to the learning tools used showed an average score of 92.85. From the data above, it can be concluded that the problem-based learning model at Microsoft developed by researchers and thematic educational materials can improve student learning outcomes. This is following the statement put forward by Rachmadtullah et al. (2018), which states that the incorporation of interactive multimedia into the teaching and learning process has the potential to increase student learning outcomes and activities. Because they make learning fun,

interactive teaching materials are an excellent choice for use in the classroom. The learning process is fun and can stimulate students' interest and motivation in every learning activity (Zen et al., 2022). This is in line with Putri & Ardi's statement, (2021) which says that students can learn in a comfortable and pleasant environment by using teaching materials. This is because interactive teaching materials include interactive problem exercises and their various components, including animation, sound, video, images, and techniques (Titik, 2020). According to Diyana et al., (2020), there is a connection between these parts, so this teaching material can be used to make abstract ideas more concrete. Because material encouragement has been assisted by static visualization and dynamic/animated visualization, excessive verbal material will also be reduced when interactive teaching materials are used in the classroom (Maria et al., 2019).

As a result, the teacher does not have to worry about spending too much effort or effort, which can also increase the effectiveness of the learning process. This can be interpreted that this interactive teaching material is very helpful for teachers in teaching when delivering material. This is in line with the findings of Geni et al., (2020), which state that providing interesting learning materials to students makes it easier for students to understand the content and allows students to learn to follow the learning process so that student learning outcomes increase.

4. CONCLUSION

The results of the product development that the researchers carried out were able to produce teaching materials o thematic integrated with the Microsoft Sway-based PBL model in class V SD which were very valid and very practical, according to previous research findings. The results of the validity of the material expert validator o are included in the very valid category o with a value of 92,88%, the linguist validator is included in the very valid category o with a value of 95%, and the media expert validator is included the very valid category with a value of 90 percent. Regarding the practicality of the answers, educators and students scored respectively 93.33% and 92.85%, placing them in the very practical category.

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