Tekno-Pedagogi 9 (1) (2019)
ISSN: 2088-205X | E-ISSN: 2715-7415
Tekno-Pedagogi : Jurnal Teknologi Pendidikan
https://online-journal.unja.ac.id/pedagogi
DOI: 10.22437/teknopedagogi.v9i1.32744

Thematic Adventure: Exploration of Events for Grade 2 Elementary School Students

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Info Article
Received: 1 Jan 2019
Revised: 20 Jan 2019
Accepted: 24 Feb 2019
OnlineVersion: 22 Mar 2019

Abstract
The research aimed to develop thematic learning multimedia focusing on events for 2nd-grade elementary school students and evaluate its effectiveness. Employing a 4-D development model, the multimedia underwent validation by both media and subject matter experts, followed by testing with students. The validation results, encompassing design and material assessment indicators, indicated the multimedia's feasibility. Furthermore, field trials demonstrated a significant improvement in student cognitive learning outcomes, with the percentage of completeness rising from 66.6% in the pre-test to 96.6% in the post-test. Consequently, it can be concluded that the thematic learning multimedia centered on events is suitable for use in teaching event-themed material to 2nd-grade elementary school students, exhibiting efficacy in enhancing student cognitive learning outcomes.

Keywords: Development; Multimedia; Thematic Learning; Theme of Events

INTRODUCTION

Learning requires the right process to empower students with various competencies (Mulyasa, 2013:64). These competencies include the ability to utilize information and communication technology (information & communication technology literacy skills), critical thinking skills (critical thinking skills), problem solving skills (problem solving skills), effective communication skills (effective communication skills), and collaboration skills (collaborating skills) (Chaeruman, 2010). To achieve these various competencies, the government has made improvements to the national education system by implementing the 2013 Curriculum. One of the distinctive characteristics of learning in the 2013 Curriculum is the application of thematic learning at the elementary school level.

According to Widiastuti and Wangid (2015), thematic learning is a learning approach concept that involves several subjects to provide meaningful experiences for students. This experience is considered meaningful because in thematic learning, students can understand the concepts studied through direct experience and connect them with other concepts they have previously understood. Thematic learning is an approach that is oriented towards learning practices that are appropriate to children's developmental needs. In the learning process, it is important to emphasize the meaning and relevance of the learning program that is carried out oriented towards the child's developmental needs.

Meaningful learning occurs when students directly experience what is being learned, activating various abilities other than cognitive. In this context, students find connections between concepts and skills obtained from the information learned, strengthening the understanding that learning is important

and useful. Concepts and skills can be obtained from one field of study or from several integrated fields of study, showing relevance in solving problems in real life.

However, the implementation of thematic-integrative learning in the 2013 Curriculum still faces obstacles, especially in terms of integrating various subjects. Widiastuti and Wangid (2015) found that many teachers are still confused about processing education in an integrated manner. This contrasts with the demands of the 2013 Curriculum which emphasizes teacher creativity, innovation and productivity, while maintaining character values.

To facilitate thematic learning that suits the needs of elementary school students and accommodates various scientific disciplines, teachers need effective learning media. One option is multimedia learning, which can integrate knowledge from various disciplines and present it in an interesting and effective way to students. Multimedia learning allows teachers to create learning situations that cannot be presented directly, such as natural events, so that students can gain concrete understanding and experience.

The reason for using multimedia in classroom learning is very logical, because it can increase students' interest in learning, understanding and memory. Multimedia also allows students to experience direct experiences, such as seeing fish in the ocean, through interactive multimedia displays. This helps students understand the material more easily and pleasantly, in accordance with the concept of meaningful learning based on constructivism.

A preliminary study at SD Negeri 205/IV Jambi City shows that the learning outcomes of class II students for the event theme are still not uniformly satisfactory, one of which is due to the lack of relevant learning resources. Students also experience difficulties in reading, writing and concentrating fully when the teacher explains, which is caused by the limited learning media available. Therefore, this research focuses on developing thematic learning multimedia with a scientific approach to event themes, as well as testing the effectiveness of its use in grade 2 elementary school students.

RESEARCH METHODS

Research Design

This research is development research using the 4D development model (Thiagarajan et al., 1974), which consists of three development stages, namely defining, designing and developing. The fourth stage, namely dissemination, was not carried out because the product produced was limited to product suitability or in accordance with the needs of students at SD Negeri 205/IV.

Research Target/Subject

This research took research subjects from grade 2 students at State Elementary School 205/IV Jambi City. The research subjects were population samples taken as a representation of the target users of thematic-integrative learning multimedia. Subjects were selected using a purposive sampling technique, selected based on certain criteria such as activeness in learning and reading and writing skills. Apart from that, the research subject also involved two experts, namely a media expert and a material expert, who were chosen based on their expertise and experience in related fields. This subject-taking technique is expected to provide a representative picture of the effectiveness and feasibility of thematic-integrative multimedia learning on event themes for grade 2 elementary school students.

Research Procedure

This research took research subjects from grade 2 students at State Elementary School 205/IV Jambi City. The research subjects were population samples taken as a representation of the target users of thematic-integrative learning multimedia. Subjects were selected using a purposive sampling technique, selected based on certain criteria such as activeness in learning and reading and writing skills. Apart from that, the research subject also involved two experts, namely a media expert and a material expert, who were chosen based on their expertise and experience in related fields. This subject-taking technique is expected

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Next, product trials were carried out involving two experts, namely media experts and material experts. Media experts evaluate technical aspects and multimedia presentations, while material experts assess the suitability of the content to the curriculum and the appropriateness of the material. Qualitative data was obtained from the responses and suggestions given by the two experts, which were then summarized for product improvement.

Apart from that, the product trial also involved grade 2 students at SD Negeri 205/IV Jambi City. Students were used as test subjects to assess the effectiveness of using multimedia in improving cognitive learning outcomes. Quantitative data was obtained from the results of scoring student responses on questionnaires before and after using multimedia, as well as from student pre-test and post-test scores. The data analysis technique uses descriptive statistical rating scale techniques to evaluate product feasibility and effectiveness of multimedia use.

Instruments, and Data Collection Techniques

The data in this research was obtained through two types of instruments and data collection techniques. First, qualitative data was obtained through a validation sheet filled in by two experts, namely a media expert and a material expert, regarding the quality and suitability of thematic-integrative learning multimedia. This instrument consists of questions that address aspects of design, material content, ease of use, and attractiveness of multimedia. Second, quantitative data was obtained through student response questionnaires before and after using multimedia, as well as from students' pre-test and post-test scores. Questionnaires are used to measure students' perceptions of material, visuals, audio and multimedia displays. The data collection techniques used are validation sheets for experts and questionnaires for students.

Data analysis technique

Qualitative data from expert validation sheets and student responses were analyzed descriptively, by collecting and summarizing the responses and suggestions provided by both experts and students. Qualitative data is said to be saturated if it has received positive comments from experts regarding the product. Meanwhile, quantitative data from questionnaires and student pre-test and post-test results were analyzed using descriptive rating scale statistical techniques to evaluate product feasibility and effectiveness of multimedia use. Data interpretation is carried out by comparing the results of the analysis with the problems and research objectives that have been determined, so that relevant conclusions can be drawn regarding the effectiveness of thematic-integrative learning multimedia in improving student learning outcomes.

RESULTS AND DISCUSSION

Thematic learning multimedia products with event themes have been developed through stages in the 4D development model, namely define, design and development. The define stage is initial research which aims to define problems related to the implementation of thematic learning on the theme of events in class 2 of SD Negeri 205/IV Jambi City. The results of the definition stage show that students are often faced with material that is abstract and outside their daily experience, making it difficult to understand. The media used at that time was still limited to textbooks, pictures and the environment, even though event theme material required a more interactive and concrete approach.

The next stage is design, where the multimedia product is designed based on a scientific learning approach and predetermined specifications. The development team prepared a product development schedule and created a flowchart and storyboard as a multimedia prototype design. The prototype then enters the development stage, where it is validated by media experts and material experts.

The feasibility of thematic learning multimedia content on event themes is evaluated in validation by media experts and material experts. The assessment was carried out on four aspects, namely the suitability of the program with the content/material construct, the attractiveness of the material, the completeness of the material, and the ease of the material. The assessment results show that overall, multimedia is in accordance with the 2013 curriculum and presents material clearly and interestingly, in accordance with the cognitive development characteristics of grade 2 elementary school students. Multimedia materials are also considered complete and relevant to learning competencies, which are clearly arranged, and are able to increase student learning motivation through the use of images, colors, animations and videos.

Table 1. Material Validation Results

Assessment Aspects	Assessment Indicators	Comment
Suitability of the program to the content/material construct	Suitability of the selection of materials/sources (content) with the scope of themes and learning competencies	In accordance
	The relevance of competency to achievement indicators	In accordance
	competence	In accordance
	The relevance of the systematic presentation of material with	In accordance
Material completeness	multimedia storyboards and flowcharts	In accordance
	Accuracy of material descriptions with learning objectives	
	Suitability of material to the scope of competency	In accordance
	Suitability of scope of competency and material	In accordance
Ease of material	learning event themes with sub-themes presented on a multimedia menu	In accordance
	Clarity of instructions for working on practice questions	In accordance
	Suitability of exercises to learning material	In accordance
	Appropriate type of letters used in sentences	In accordance
	Ease of understanding sentences	In accordance
Material attractiveness	Ease of sequencing learning material	In accordance
	Harmony of images/animations/videos with descriptions	In accordance
Assessment Aspects	learning materials	In accordance
Suitability of the program to the content/material construct		

Based on the material expert's assessment of the four aspects of the assessment, overall the material in thematic learning multimedia on event themes for grade 2 elementary school is appropriate. However, material experts provide suggestions for improvement, especially regarding the use of background colors. According to material experts, the background color on the multimedia display is still less attractive and can interfere with the user's view when reading the content of each sub-theme. Therefore, it is recommended to replace the background color with a more attractive color so that students are more enthusiastic in studying the material presented. To overcome this problem, improvements were made by changing the background color of all multimedia displays to red.

The media expert's assessment of the thematic learning multimedia design for event themes shows that overall, the multimedia design is appropriate, both in terms of physical appearance quality and technical quality. The quality of the physical appearance shows that the design of each screen on multimedia is in accordance with learning multimedia format standards, including text readability, image and video quality, color composition, sound quality, use of animation, and sequence of presentation of material..

Table 2. Multimedia Design Validation Results

Assessment Aspects	Assessment Indicators	Comment
Quality of Physical Appearance	Readability of text or writing	In accordance
	The size of the letters used in the material description	In accordance
	Font type suitability	In accordance
	Image / video display quality	In accordance
	Attractive images and colors in every display	In accordance
	The color composition used in each display	In accordance
	Clarity of voice or narration	In accordance
	Composition (volume size) in each video display	In accordance
	Accuracy in choosing the music / sound used	In accordance
Technical Quality	Clarity of instructions for using multimedia	In accordance
	Clarity of material description	In accordance
	The accuracy of the formulation of learning objectives	In accordance
	Accuracy of use of animation	In accordance
	Conformity of content and completeness in the product	In accordance
	Accuracy of the language used in the product	In accordance
	Use language that is easy to understand and in accordance with EYD provisions	

It can be interpreted that the quality of multimedia displays according to media experts is able to give the impression of presenting different and interesting material to students, as well as providing students with faster understanding in learning. Although the overall quality of the physical appearance of the multimedia has been declared decent. However, media experts still provide suggestions for improvements to the shortcomings found, namely: (1) the speed of appearance (timing) of the text in multimedia is too fast, (2) the size of the letters in the text is not appropriate, and (3) the color of the letters in the visible text blurry. To follow up on this deficiency, media experts provide suggestions to readjust the speed of text appearance in the text area, and change the size and color of the letters in each text that appears in order to increase the readability level of content/material in multimedia.

From the aspect of technical quality, media experts say it is feasible because this multimedia is easy for users to use so it can help the learning process run smoothly and can be used so it doesn't make things difficult for students. The overall multimedia design of thematic learning with event themes is also in accordance with the characteristics of computer-based learning according to Hardianto, namely the presence of materials to attract attention and convey competence. The use of attention-grabbing materials is necessary to generate students' initial learning motivation so that they continue to follow the program or material designed in multimedia from start to finish. The use of attention attracting materials such as; images, videos, texts, animations, colors, music, voice actors, and interactive navigation buttons in thematic learning multimedia with event themes can actually motivate students to learn, which can be seen from the enthusiasm of all students in following all the material presented from start to finish. program broadcast.

Table 3. Results of Thematic Learning Multimedia Testing Event Themes

Assessment Aspects	Indicator	Individual Test		Small Group Test		Large Group Test	
		Score (%)	Criteria	Score (%)	Criteria	Score (%)	Criteria
Material	Ease of understanding the material	93	Very Good	100	Very Good	81	Good
	Material attractiveness	93	Very Good	90	Very Good	81	Good

Visual	Clarity of images and videos	100	Very Good	100	Very Good	90	Very good
	Clarity of illustrations of sub-theme 1 material	100	Very Good	80	Good	85	Good
	Clarity of illustrations of sub-theme 2 material	100	Very Good	100	Very Good	90	Very good
	Clarity of illustrations of sub-theme 3 material	100	Very Good	100	Very Good	90	Very good
	Clarity of illustrations of sub-theme 4 material	100	Very Good	100	Very Good	90	Very good
	Image size compatibility	100	Very Good	100	Very Good	90	Very good
Audio	Clarity of voice offer	100	Very Good	93	Very Good	84	Good
	Background clarity	100	Very Good	93	Very Good	90	Very good
	Accuracy of background sound selection	100	Very Good	100	Very Good	90	Very good
	Volume compliance	100	Very Good	100	Very Good	90	Very good
	Sequence of presentation of material	100	Very Good	100	Very Good	90	Very good
	Presentation of illustrations	100	Very Good	100	Very Good	84	Good
	Language suitability	100	Very Good	100	Very Good	90	Very Good
	Letter legibility	100	Very Good	100	Very Good	90	Very Good
	Material capabilities	100	Very Good	100	Very Good	90	Very Good
	Appropriate font size	100	Very Good	100	Very Good	90	Very Good
		98	Very Good	98	Very Good	88	Very Good

Conveying competencies in the menu symbolized by a book image icon makes students know what abilities they must master or achieve after studying the material contained in multimedia. This makes students have clear and directed learning goals, making students more motivated to achieve these learning goals. Thematic learning multimedia with event themes that have been revised and declared appropriate by media and material experts, are then tested in the field to determine the suitability of the media from material, visual, audio and display aspects.

The results of student responses in individual, small group and large group trials (Table 3) show that event-themed learning multimedia is suitable for use in terms of material, visual, audio and display aspects. This is evident from the average score obtained by students in both individual, small group and large group trials, which is in the range of 82-100 with very good criteria. Based on the percentage of student response scores obtained from the three stages of multimedia testing (Figure 1), it is known that the viewing aspect received the highest average score compared to other assessment aspects. This explains that the sequential presentation of material, examples of event pictures, appropriate font size, and interesting videos can actually provide convenience and an interesting learning impression for students in studying event theme material, so that students respond very well to the presentation of the material on multimedia.

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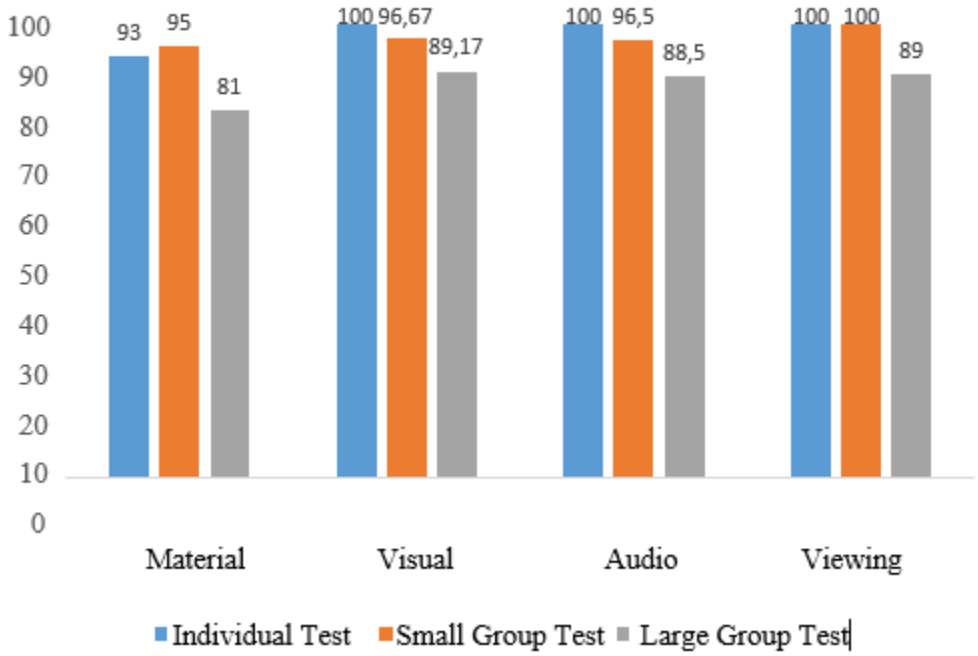

Figure 1. Comparison of the results of thematic learning multimedia trials with event themes

Based on the responses obtained during the validation process and multimedia trials in the field, thematic learning multimedia with event themes meets the criteria for learning multimedia according to Anitah (2009). This multimedia has more than one convergent media, for example combining audio and visual. In addition, multimedia is interactive with the ability to accommodate user responses. Multimedia is also independent, providing convenience and completeness of content so that users can use it without the guidance of others.

In addition, multimedia is able to strengthen user responses as quickly and as often as possible. Multimedia provides students with the opportunity to control their own learning pace, as well as ensuring that students follow a clear and controlled sequence. Multimedia is also able to provide opportunities for student participation in the form of responses, whether in the form of answers, choices, decisions, experiments, etc.

Table 4. Pre-Test and Post-Test Results Before and After Using Multimedia Learning with Event Themes

Items		Pre-Test		Post-Test	
No.		Percentage of Score Gain (%)	Criteria	Earning Percentage Score (%)	Criteria
1	Question 1	87	Complete	93	Complete
2	Question 2	60	Not Completed	93	Complete
3	Question 3	73	Not Completed	93	Complete
4	Question 4	83	Complete	97	Complete
5	Question 5	80	Complete	100	Complete
6	Question 6	77	Complete	97	Complete
7	Question 7	87	Complete	100	Complete
8	Question 8	97	Complete	100	Complete
9	Question 9	93	Complete	100	Complete
10	Question 10	93	Complete	100	Complete
11	Question 11	67	Not Completed	90	Complete
12	Question 12	70	Not Completed	90	Complete

13	Question 13	73	Not Completed	90	Complete
	Rata-rata	83,3		96,6	

A comparison of the results of the initial test (pre-test) and final test (post-test) shows that the use of event-themed learning multimedia contributed 30% to increasing the completeness of student learning outcomes in the cognitive aspect. Thus, it can be concluded that event-themed learning multimedia is effective for use in learning on a large group (class) scale.

These findings are in line with research conducted by Damayanti (2014), Rudiawan, et al (2015), Dalimunthe (2007), and Herminingsih (2010) who found that there were significant differences in student cognitive learning outcomes between students who used multimedia and students who do not use multimedia. From the results of previous research, it is also proven that multimedia can improve students' cognitive learning outcomes.

The ability of multimedia to improve students' cognitive learning outcomes, as found in this research, indicates that the multimedia being developed has a cognitive function. According to Asyhar (2012:37), the cognitive function of multimedia means that multimedia is able to provide knowledge optimally according to students' conditions. This function is the main function that exists in all media, including learning multimedia. In multimedia, cognitive functions are optimized by the presence of other functions such as attention so that students are motivated and socio-cultural functions so that students from various backgrounds can absorb the same material and have the same understanding. This emphasizes why students who are taught using multimedia have better learning outcomes than students who do not use multimedia.

Referring to the dual coding theory introduced by Paivio (in Surasmi, 2016: 599), the human cognitive system consists of two sub-systems, namely the verbal system and the image (visual) system. Words and sentences are usually only processed in the verbal system (except for concrete material), while images are processed through both the image system and the verbal system. Thus, the combination of text, images and animation in multimedia can improve students' memory function in remembering and processing the information they receive through multimedia. This is due to the existence of dual coding in students' memory function.

The increase in students' cognitive learning outcomes after the use of multimedia in this research is in line with Piaget's theory of cognitive development, that elementary school students, on average, aged between 6 years and 12 years, are at the concrete operations stage. Through his theory, Piaget (1996) revealed that in the learning process children should be given concrete images to study the material. The existence of various illustrations of events presented in the form of animated videos and images through developed multimedia is able to provide a more concrete understanding to elementary school students.

CONCLUSION

The development of event-themed thematic learning multimedia has been carried out in accordance with the 4D development model, which focuses only on three development stages, namely: define stage (initial final analysis, student analysis, and task analysis), design (choosing a learning approach, determining product specifications, forming development team, compiling a product development schedule, and creating flowcharts and storyboards), and develop (initial product validation (prototype) and field trials). The fourth stage, namely dissemination, was not carried out because the multimedia product being developed was only limited to product suitability or in accordance with the needs of students at SD Negeri 205/IV. Based on the validation results of media experts and material experts, it shows that the initial multimedia product (prototype) for event-themed learning multimedia is feasible both from the design and material aspects, and from the results of field trials (individuals, small groups and large groups) it is found that the multimedia developed has been meets the "very good" criteria in terms of material,

visual, audio and display aspects, so it is suitable for use in learning event themes at the individual, group and grade 2 level of SD Negeri 205/IV.

There is an increase in student learning outcomes in the cognitive aspect from before to after the use of multimedia for event-themed learning, indicating that the use of multimedia can be declared effective in improving student learning outcomes.

ACKNOWLEDGMENTS

We would like to express our sincere gratitude to all those who have contributed to the development and validation of the thematic multimedia learning materials on the topic of events.

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