INDONESIAN JOURNAL OF EDUCATIONAL RESEARCH AND REVIEW
Volume 6 Nomor 2 2023, pp 396-409
E-ISSN: 2621-8984; P-ISSN: 2621-4792
DOI: https://doi.org/10.23887/ijerr.v6i2.66087

Interactive Multimedia Based on Adobe Flash Software on Thematic Learning for Grade V Elementary School

Salwa Annisa Hasri[1*], Yanti Fitria[2], Zelhendri Zen[3], Yeni Erita[4]
[1,2,3,4] Pendidikan Dasar, Universitas Negeri Padang, Padang, Indonesia
*Corresponding author: salwaannisahasri7@gmail.com

Abstrak

Saat ini para guru belum memanfaatkan penggunaan media berbasis IT dalam proses pembelajaran, sehingga siswa merasa kurang termotivasi dalam proses pembelajaran dan membuat siswa kurang memahami materi yang disampaikan oleh guru. Penelitian ini bertujuan untuk mengembangkan multimedia pembelajaran berbasis software Adobe Flash yang valid, praktis dan efektif untuk meningkatkan hasil belajar siswa. Subyek penelitian ini terdiri dari ahli media, ahli materi, ahli bahasa, guru dan siswa kelas V di beberapa sekolah. Jenis penelitian ini adalah Research and Development (penelitian dan pengembangan). Penelitian ini menggunakan model pengembangan ADDIE (Analisis, Desain, Pengembangan, Implementasi, dan Evaluasi). Data yang diperoleh akan dianalisis dengan menggunakan persentase deskriptif dan data kualitatif. Pengumpulan data dalam penelitian menggunakan angket skala 5 untuk mengetahui tingkat validitas, kepraktisan, dan motivasi belajar siswa serta untuk mengetahui hasil belajar siswa dengan cara pretest dan posttest menggunakan soal-soal objektif. Hasil penelitian menunjukkan bahwa pengembangan multimedia pembelajaran dengan menggunakan perangkat lunak Adobe Flash dinyatakan valid untuk digunakan di kelas V Sekolah Dasar. Multimedia pembelajaran berbasis software Adobe Flash juga efektif dalam meningkatkan hasil belajar siswa. Hal ini terlihat dari hasil perbandingan pretest dan posttest. Dengan demikian, multimedia pembelajaran dengan menggunakan Adobe Flash ini valid, praktis dan efektif serta cocok digunakan dalam proses pembelajaran di kelas V Sekolah Dasar.

***Kata kunci*:** *Multimedia Interaktif,* Software Adobe Flash*, Pembelajaran Tematik, Sekolah Dasar*

Abstract

Nowadays the teachers have not utilized the use of IT-based media in the learning process, so students feel less motivated in the learning process and make students less understand the material delivered by the teacher. This research aims to develop learning multimedia based on Adobe Flash software that is valid, practical and effective for improve student learning outcomes. The subjects of this study consisted of media experts, material experts, linguists, teachers and fifth grade students at several schools. This type of research is Research and Development (research and development). This research uses the ADDIE development model (Analysis, Design, Development, Implementation, and Evaluation). The data obtained will be analyze using descriptive percentages and qualitative data. Data collection in the study used a scale 5 questionnaire to determine the level of validity, practicality, and student learning motivation as well as to determine student learning outcomes by means of pretest and post-test using objective questions. The results showed that the development of multimedia learning using Adobe Flash software was declared valid for use in class V elementary school. Learning multimedia based on Adobe Flash software is also effective in improving student learning outcomes. This can be seen from the results of the pretest and post-test comparisons. Thus, learning multimedia using Adobe Flash is valid, practical and effective and suitable for use in the learning process in class V of elementary school.

Keywords: Interactive Multimedia, Adobe Flash Software, Thematic Learning, Elementary School

History:
Received : April 28, 2023
Revised : May 04, 2023
Accepted : July 06, 2023
Published : July 25, 2023

Publisher: Undiksha Press

1. INTRODUCTION

The learning system during the 4.0 revolution optimized technology as a medium that can motivate and attract innovative learning that uses interactive multimedia. Multimedia is one of the implementations of technological advances that need to be applied in learning. With the multimedia can motivate students and improve student learning outcomes (Chan et al., 2017; Kusumawati et al., 2021). The success of education in schools can be monitored from the learning outcomes that have been achieved by students. At the end of each learning process an evaluation is always carried out to determine the level of success of students in the learning process that has been carried out for a certain period of time. Evaluation is a process

of collecting data to determine to what extent, in what ways, and how educational goals have been achieved (Servitri & Trisnawaty, 2018; Wibowo et al., 2021).

The Curriculum 2013 is an educational curriculum that aims to improve the quality of human resources. Therefore, the implementation of the curriculum 2013 focuses on meaningful and contextual student activities. It uses an integrative thematic approach and a scientific approach. This is intended so that students get a more meaningful learning experience. Education is a set of learning experiences that take place everywhere and throughout life (Utami & Wutsqa, 2017; Yunita Anindya et al., 2019). Through the educational process, a nation tries to make progress in various other areas of life. Therefore, a country can achieve the goals that have been set through education. In thematic learning, learning activities are placed systematically in the teacher's book, but the teacher can design learning effectively and efficiently according to thematic learning. Thematic learning is one of the learning models that use themes to connect several topics, in order to present a meaningful learning experience for students that connects various ideas, concepts, skills, attitudes, and values, both between subjects and one subject (Azzahra & Nurrohmatul Amaliyah, 2022; Muhali, 2019).

Based on the results of observations that the researchers in class V SD Negeri 01 Sasak Ranah Pasisie, Sasak Ranah Pasisie District, it can be seen that the teacher's knowledge in using technology is still low. This is evident in integrated thematic learning, the learning resources used by teachers are still in the form of teaching materials (teacher books and student books) as the main teaching materials used in classroom learning. The textbook used by the teacher uses high language so that students do not understand the contents of the material. In addition, the media used has not been developed according to contextual learning and the lack of use of IT in media development. The media provided is less interesting and varied, so it needs to be developed and created by the teacher. With these problems resulted in low student learning outcomes marked by the 16 students only 9 people who achieve KKM.

The problems that researchers found in the field are also almost the same as the research conducted by previous study which states that in integrated thematic learning they still use printed 2013 curriculum materials and students also use books from publishers that were not developed directly by the teacher, and there has been no development of integrated thematic interactive Multimedia using technology such as the use of Adobe Flash CS6 (Syafriatma & Amini, 2021). In addition, research conducted by other study that state learning process that took place was not optimal, the application of the 2013 curriculum the teacher assumed that the teacher's book and student's book were the only books that served as guidelines (Nasrul, 2018). Even though the teacher's and student's books the coverage of material in these teaching materials is still small. The teaching materials owned by the teacher do not invite students to solve problems that occur around them.

Advances in science and technology at this time greatly affect the use of teaching and learning aids in schools such as media, interactive multimedia, worksheets which are the right way to support learning to be more effective and efficient (Demirbaş & Şahin, 2022; Winarni et al., 2022). Technological advances have made a significant impact on the development of learning methods from face-to-face to computer-based learning systems (e-learning). Learning in the classroom is never separated from the use of interactive multimedia and interesting learning media. As the rapid development of information and communication media has resulted in a shift in the role of the teacher. The teacher does not only act as a source of information in learning activities for students, therefore teachers need media that can be used as an alternative source of information in learning (Fanny & Suardiman, 2013; Nafi'ah et al., 2019). In addition, teachers are required to have the ability and creativity in

using interactive multimedia and suitable learning media so that the teaching and learning process becomes more interesting.

In the interactive multimedia used by students, it can be seen that students are asked to work on questions in the textbook and do not direct students to be able to solve problems that exist in everyday life. As a result, it has an impact on students during the learning process. Students have difficulty understanding the material taught by the teacher. This can be seen when the learning process takes place students often go in and out and tell stories with their friends and students' interest in learning is still lacking because students are used to playing games on cellphones so learning becomes less meaningful (Chen & Chuang, 2021; Kennedy et al., 2008). After observing the learning, it can be understood that one of the factors of low learning outcomes and the lack of student interest in the integrated thematic learning process is interactive multimedia. Interactive multimedia is materials or subject matter that are arranged systematically which are used by teachers and students in the learning process (Anggeraini, 2018; Bustanil S et al., 2019). Interactive multimedia itself is independent, explains the instructional objectives to be achieved, motivates and anticipates students' difficulties by providing study guidance, providing sufficient training, providing summaries, and oriented to individual students (Octaviani, 2017; Shanks et al., 2017).

Learning using interactive multimedia aims to facilitate the learning process, foster the creativity and innovation of educators in designing communicative and interactive learning, as well as problem solving in the midst of busy education (Daryanto, 2010; Rohmah & Bukhori, 2020). One of the teacher's roles is as a facilitator who plays a role in providing services to facilitate students in the learning process. Teachers are required to have the ability and creativity in using interactive multimedia and suitable learning media so that the teaching and learning process becomes more interesting. One of the programs that can be utilized in making interactive multimedia based on interactive multimedia is using the Adobe Flash program. Adobe Flash program is a program that can visualize the real-world using technology. These advantages can be expected to realize an interactive Multimedia application that will attract students' interest and motivation in learning (Erwin, Vini Ariani., 2019; Hidayah et al., 2017).

Based on research by previous experts, researchers are interested in developing interactive multimedia based on Adobe Flash software to improve student learning outcomes in integrated thematic learning in grade V elementary schools so that they can provide easy understanding of material to students in the learning process and can help educators and participants students in creating a pleasant learning atmosphere. In this study, the researcher developed Adobe Flash software which could be controlled directly by students using navigation buttons on the material theme 7: events in life, Subtheme 1: national events during the colonial period for 6 lessons which would provide a reciprocal response in order to achieve the learning objectives.

2. METHODS

This research is a development research or R&D (Research and Development). Development research is a research method used to develop new products (Sugiyono, 2015; Suryaningsih et al., 2020). The product developed in this study is a multimedia based on Adobe Flash software for class V elementary school students. Based on the background of the problems in this study, the development model that is suitable for use is ADDIE (Analysis, Design, Develop, Implement, Evaluate). This development model is easy to use and can be applied in curricula that teach knowledge, skills or attitudes (Cheung, 2016). The subjects in this study were fifth grade elementary school students. To conduct a practicality test carried out in three stages. The first stage, individual trials carried out by three students in

class V SD Negeri 03 Sasak Ranah Pasisie. The second stage, small group trials carried out by six students in class V SD 05 Sasak Ranah Pasisie. The third stage, a large group trial was carried out in class V SD Negeri 01 Sasak Ranah Pasisie, with a total of 20 people. The data collection technique uses a questionnaire from educators and students' responses. The instrument used is a questionnaire sheet or the response of educators and students.

This development model consists of five stages, namely: analysis at this stage the activities carried out are: analyzing the competencies required of students, analyzing the characteristics of students about learning capacity, conducting material analysis in accordance with competency demands. Designing at this stage the activities carried out are carried out with the following frame of reference: for whom the learning is designed (students), the desired abilities to be learned (competencies), how the subject matter or skills can be learned properly (learning strategies), how to determine the level mastery of lessons that have been achieved (assessment and evaluation). Development at this stage aims to produce learning multimedia that is valid, practical, and effective. The developed multimedia will be revised based on input from the validator. Implementation at this stage the validated multimedia will be tried out on students. This product trial is intended to obtain information whether the new learning media is effective and practical. Evaluation at this stage is carried out to evaluate the quality of the product as a result of development. In the last stage the researcher will measure the achievement of product development goals.

Data collection techniques in this study were carried out using questionnaires or questionnaires. Questionnaires were used to measure the quality of the media developed and to measure student learning outcomes. This development research used questionnaires to obtain data from media experts, material experts, and students as material for evaluating media developed learning. The data collected from this multimedia development research are quantitative data and qualitative data. Quantitative data is the main data in the research in the form of student learning outcomes data and assessments of multimedia learning from material experts, media experts, and students in questionnaires. Qualitative data is data about the process of developing learning multimedia in the form of criticism and suggestions from media experts and material experts. The instrument used in this study was a non-test instrument in the form of a questionnaire or questionnaire. Practicality sheets are in the form of closed questionnaires. Practicality sheets are in the form of student response questionnaires. Practicality sheets are used to determine the level of practicality of learning multimedia. This sheet is arranged on a Likert scale using a scale with a score of 1-5.

3. RESULTS AND DISCUSSION

Results

Analysis Stage

At analysis of curriculum and student characteristics is carried out. The curriculum used in this study is the curriculum 2013. The scope of material used for the development of learning multimedia using Adobe Flash software is theme 7 events in life, sub theme 1 national events during the colonial era. The curriculum analysis stage is carried out by analyzing KD to formulate indicators. From the indicators, the learning objectives to be achieved by students are formulated. Furthermore, the formulation of indicators used for the development of learning multimedia using Adobe Flash software is theme 7 events in life, sub theme 1 national events during the colonial period. in class V semester II, which is in accordance with content standards in thematic learning at the 2013 elementary school level curriculum. The curriculum analysis stage is carried out by analyzing KD to formulate indicators. From the indicators, the learning objectives to be achieved by students are formulated. Furthermore, the formulation of indicators used for the development of learning

multimedia using Adobe Flash software is theme 7 (Events in life) sub-theme 1 (national events during the colonial era) in class V semester II which is in accordance with content standards in thematic learning at the elementary level Curriculum 2013.

Student analysis is a study of student characteristics which include the level of intellectual development, language, and student learning motivation. This analysis is used as a basic reference in the development of interactive learning multimedia. Analysis of student characteristics was carried out on fifth grade students of SD Negeri with an age range of 10-11 years consisting of 5 boys and 11 girls. In the development of socialization skills, fifth grade students have been influenced by their peers so that groups are formed based on certain similarities such as having a strong curiosity and being interested in the world around them, often playing and having more fun, liking to explore a situation and try new ventures, children are driven to excel and do not like failure, they learn by working, observing and analyzing.

Design Stage

In order to produce learning multimedia using Adobe Flash software, flowcharts and storyboards are made first. Flowcharts are useful for showing the flow of programs that will be made while storyboards contain all the information that will appear on the screen. After the flowcharts and storyboards are made, the next step is to make the learning multimedia developed. The following is a description of the display of learning multimedia that has been made as show in Figure 1, Figure 2, and Figure 3.

Figure 1. Initial Menu Display

Figure 2. User Guide

Figure 3. Main Menu Display

Development Stage

At this development stage, validation of learning multimedia products is carried out. The purpose of this product validation is to determine the feasibility and quality of learning multimedia. The validation of learning multimedia is validated by experts, namely media experts, material experts, and language experts.

The validation carried out by media experts is related to aspects of media suitability, design and layout and ease of operation. Calculation of validation results by media experts can be seen in Table 1.

Table 1. Validation Result of Media Experts

No.	Rated Aspect	Results
	Media Compatibility	
1	Teaching materials are in accordance with the material discussed	4
2	The color of the text/writing contrasts with the background color	4
3	The selection of background images according to the material	4
4	Images selected according to the material	4
5	The audio used is in accordance with the material	2
6	Videos according to the material	4
7	The animation used is in accordance with the material	4
	Design and Layout	
8	The design layout used is proportional and attractive	3
9	Attractive design quality	4
10	Content placement is appropriate	4
11	The choice of color composition is interesting	4
12	The selection of the type of writing is appropriate	3
13	The selection of the size of the text is appropriate	2
14	Systematic presentation of material	4
15	Quality of images provided	3
16	Clarity of instructional materials	4
17	Video quality used	4
18	The use of transition patterns on frame shifts	4
19	Selection of background music used	3
	Operation of Learning Media	
20	Ease of use navigation buttons	4
21	Benefits of navigation to help users	4
22	Navigation accuracy to the desired menu	4
	Total	**80**
	Number of Average Percentage of Validity	**73 %**
	Category	**Valid**

The validation carried out by material experts is related to the material presented in learning multimedia. The validation results of the material presented in Adobe Flash-based learning multimedia can be seen in Table 2. The validation carried out by linguists is related to linguistic aspects presented in learning multimedia. The result of the language validation is show in Table 3.

Table 2. Validation Result of Material Experts

No.	Rated Aspect	Validator Assessment Results	
		V 1	V 2
1	The learning objectives are in accordance with the basic competencies.		
2	The scope of material contained in multimedia is appropriate	4	4
3	The contents contained in the multimedia are in accordance with the indicators	4	4
4	The concepts discussed in this multimedia are correct	3	4
5	The learning flow is clear	3	4
6	The quality of learning interaction with this multimedia is	3	4

No.	Rated Aspect	Validator Assessment Results	
		V 1	V 2
	good		
7	Practice questions can measure students' abilities	4	4
8	The use of language in multimedia is good	4	4
9	The concept of presenting material 7 increases student learning interest	4	4
10	The developed interactive multimedia is expected to increase students' interest in learning	4	4
11	This interactive multimedia is expected to strengthen the theme material 7	4	4
12	This interactive multimedia developed is expected to facilitate students to learn	4	4
13	The animation shown is good	4	4
14	The navigation contained in this interactive multimedia is clear	4	4
15	This interactive multimedia feedback has been effective		
Total		**56**	**60**
Number of Average Percentage of Validity		**96 %**	
Category		**Very Valid**	

Table 3. Validation Result of Material Experts

No.	Rated Aspect	Results
1	The learning objectives are clear	4
2	The scope of material contained in teaching materials is appropriate	4
3	The contents contained in the teaching materials are in accordance with the basic competencies and indicators	4
4	The concepts discussed in the teaching materials are correct	4
5	The learning flow is clear	4
6	The quality of learning interactions using teaching materials is good	4
7	Interactive multimedia arranged using clear fonts	4
8	The use of language in teaching media is good	4
9	The concept of presenting the material theme 7 sub-theme 1 increases student learning interest	4
10	The developed interactive multimedia increases students' learning motivation.	4
11	The interactive multimedia that was developed strengthens the theme material for 7 sub-themes 1	4
12	The developed interactive multimedia facilitates students to learn	4
13	All elements in interactive multimedia both text, images, videos are clearly visible	3
14	Interactive multimedia with the appearance of text, images, videos according to student characteristics	3
15	Interactive multimedia uses the right text and background colors	4
16	The use of letters in interactive multimedia can be seen and read clearly	3
Total		**61**
Number of Average Percentage of Validity		**76 %**
Category		**Valid**

Implementation Stage

At this stage, limited trials were carried out on teachers and students. The intended trials were to see the level of practicality and effectiveness of learning multimedia developed in improving student learning outcomes. This limited trial consisted of 1 teacher and 16 students. To find out the level of practicality of the developed learning multimedia, a practicality test was carried out on the teacher. At the practicality test stage for teachers, it is carried out by asking teachers to fill out practicality questionnaires on the developed learning multimedia. The results of the practicality tests conducted on teachers can be seen in Table 4. Based on Table 4 show the result of practicality by the teacher, an average of 98% is obtained in the very practical category. This shows that the developed adobe flash software-based learning multimedia is stated to be very practical and feasible to be applied in the learning process in class V of elementary school.

To find out the level of practicality of learning multimedia based on Adobe Flash software that was developed, a practicality test was carried out on students by asking students to fill out a practicality questionnaire on the developed multimedia. The results of the practicality test aimed at students can be seen in Table 5.

Table 4. Results of The Practicality Tests

No.	Statement	Score
	Quality of Content and Objectives	
1	The purpose of learning in this medium is clear.	5
2	Instructions for use are clear	5
3	The content contained in the multimedia is in accordance with competency standards and basic competencies	5
4	The flow of learning in the media is clea	5
	Technical Quality	
5	This learning multimedia is easy to use	5
6	Instructions for use are clear	5
7	The sound quality in this medium is good	5
8	The display of this learning multimedia is interesting	5
9	The developed multimedia color composition is interesting	5
10	The animation presented can clarify the material	5
11	The color of the text matches the background color	5
12	The text and sentences used are easy to read	5
13	The use of language is appropriate and easy to understand	5
14	The use of buttons is clear and easy to use	5
	Learning and Instructional Quality	
15	This developed multimedia can improve student learning outcomes	4
16	This developed multimedia can attract students' interest	5
17	This developed multimedia can make it easier for students to understand the material	5
	Overall	**84**
	Practicality Average Results by Teachers	**98%**

Table 5. Results of The Practicality Test

No.	Name	Obtained Scores	Practical result	Criteria
1	AFR	48	96	
2	ASP	45	90	Very Practical
3	ER	43	86	

No.	Name	Obtained Scores	Practical result	Criteria
4	HA	50	100	
5	KSW	40	80	Practical
6	MF	47	94	Very Practical
7	MHH	50	100	
8	MR	40	80	Practical
9	MP	45	90	Very Practical
10	NR	45	90	
11	NAS	39	78	Practical
12	NU	35	70	
13	RA	50	100	Very Practical
14	RIA	40	80	Practical
15	RN	40	80	
16	RKW	44	88	Very Practical
Total		**701**	**1402**	
Overall			**88**	**Very Practical**

Evaluation Stage

At this evaluation stage contains the assessment of learning outcomes for the product being developed. There are two types of evaluation stages in the ADDIE model, namely formative evaluation and summative evaluation. Formative evaluation is an evaluation that is used to determine the quality of the product produced and as a result, improvements or revisions will be made to the product made. This formative evaluation has been carried out in the previous stages. Summative evaluation is an evaluation that is used to determine students' mastery of the competencies being taught. This evaluation is completed with a pre-test and post-test in the form of objective questions. In this study the pretest evaluation was carried out before using interactive learning multimedia and the posttest evaluation was carried out after using interactive learning multimedia. The recapitulation of pre-test and post-test is show in Figure 4.

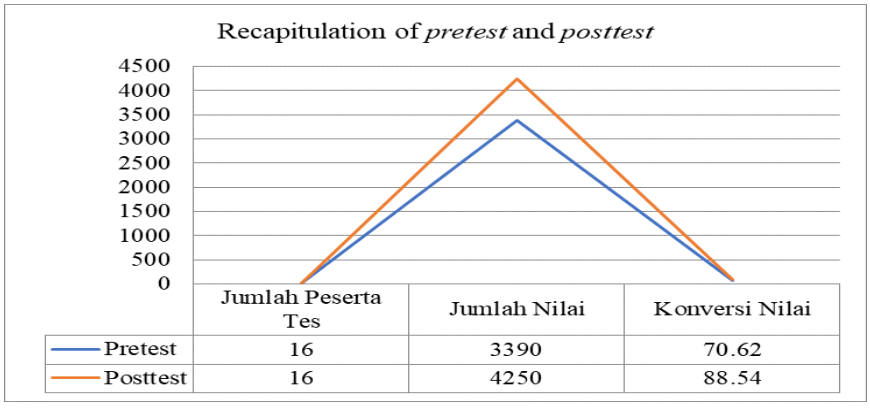

Figure 4. Recapitulation of Pre-test and Post-test

Discussion

The process of Developing Interactive Multimedia based on Adobe Flash Software in Valid Elementary Class V Thematic Learning

This study uses the ADDIE development model with 5 stages, namely Analysis, Design, Development, Implementation and Evaluation. In the Analysis phase an analysis of the curriculum and student analysis is carried out. The stages of curriculum analysis carried out are analyzing KD to formulate indicators. Based on basic competencies, indicators are

formulated to support the achievement of basic competencies. The results of the analysis of learning indicators on theme 7 (events in life) sub-theme 1 (occupational national events) are carried out by developing indicators that have been made by the teacher. Analysis of students shows the way of learning that is owned by each student so that with interactive media it can meet the needs of students' learning styles. A student who likes to read is less used to learning well if he has to listen to lectures or discussions (Putri Ningrat et al., 2018; Taufik, 2019).

Based on the assessment of the material aspect, it obtained a score of 96% in the Very valid category, which was indicated by the suitability of the material presented in interactive multimedia based on Adobe Flash software in accordance with basic competencies and learning achievement indicators. The material contains the core sub-sub-material which will be explained in student worksheets which contain conclusions obtained from real-life problems regarding the understanding of the material conveyed in each sub-material. Problems related to learning materials should relate to the context of everyday life (Imam et al., 2018; Muthaharoh et al., 2019). It is in line with the work of previous study, stating that the material in learning media that is packaged in accordance with basic competencies and learning achievement indicators is very effective in helping students improve learning outcomes (Hanida et al., 2019).

Based on the results of the assessment by media experts, a value of 73% was obtained with a valid category, this means that the interactive multimedia based on Adobe Flash software that has been developed contains an attractive and proportional design and is easy for students to use. Interactive multimedia based on Adobe Flash software can be used to create interactive media from learning materials by incorporating visual and audio components into presentation slides and can be shared through platforms for use by students with the help of computers, laptops and gadget (Harahap & Siregar, 2020; Mensah & Nabie, 2021). Based on the results of the assessment by linguists, an average score of 76% was obtained in the Valid category. This means that the developed interactive multimedia media based on Adobe Flash software has used good and correct language rules.

Practicality of Interactive Multimedia based on Adobe Flash Software Developed in Class V SD Thematic Learning

Based on the results of practicality by the teacher, an average of 98% is obtained in the Very Practical category. The practicality results for students obtaining a practicality value are 88% in the Very Practical category. The practicality of interactive multimedia based on Adobe Flash software is seen in terms of ease of use for learning. This shows that interactive multimedia based on Adobe Flash software is simple and does not require extraordinary skills to use it. Interactive multimedia based on Adobe Flash software is also equipped with instructions for use so that teachers and students know the methods used in using the media.

This is in accordance with what was stated by previous study who emphasized that a learning media is said to be practical if the media can be used practically by educators and students without having to have specific skills in a lesson so that each individual can use the media (Nasution & Harahap, 2019). Interactive multimedia based on Adobe Flash software will not only facilitate the delivery of material, but will also increase student participation in learning because it forms 2-way communication in the form of interaction between students and computers (Adi et al., 2020; Metalin et al., 2020).The use of interactive multimedia based on Adobe Flash software can also make learning time more efficient, with the help of PowerPoint the teacher does not need to write learning material on the blackboard (Winarni et al., 2022; Zain & Pratiwi, 2021).

The Effectiveness of Interactive Multimedia based on Adobe Flash Software Developed in Class V SD Thematic Learning

The use of interactive multimedia based on the developed Adobe Flash software has an effect on improving student learning outcomes. This can be seen from the results of the findings which were carried out by means of pretest and posttest in. In the knowledge aspect, the pretest results of student learning outcomes obtained a good predicate, then there was an increase after the posttest carried out, student learning outcomes obtained a Very Good predicate. The assessment of the skills aspect obtained a score of 3.77 with a Very Good predicate. The assessment of the attitude aspect obtained a value of 3.79 with a very good predicate.

The developed interactive multimedia based on Adobe Flash software presents problems related to the subject matter that will be mastered in a concrete and comprehensive manner. The use of learning media in the orientation of the learning achievement stage really helps the effectiveness of the learning process and the delivery of the content of learning messages (García-Ceberino et al., 2020; Noviana et al., 2020). Interactive multimedia based on Adobe Flash software can make students more active, focus on the learning process, and also foster a sense of fun in the learning process (Anwar et al., 2020; Putri & Nurafni, 2021). Students can use interactive PowerPoint media according to their needs in the learning process so that they can improve student learning outcomes.

4. CONCLUSION

Based on the formulation of the problem, it can be deemed that this research produced a product, namely interactive multimedia based on Adobe Flash software developed using the ADDIE development design. Interactive multimedia based on Adobe Flash software contains thematic learning materials and evaluation questions in elementary schools are stated to be very practical with the practicality percentage of individual trials conducted on three students. Small group trials obtained good score. Furthermore, the limited group trial obtained an average total score. Furthermore, the responses from the third-grade teachers in the test group obtained an average total score of great. Thus, it can be deemed that interactive multimedia based on Adobe Flash software is very practical and can be used in the thematic learning process in elementary schools.

5. REFERENCES

Adi, W. A., Relmasita, S. C., & Hardini, A. T. (2020). Pengembangan Media Animasi Untuk Pembelajaran Matematika Materi Bangun Datar. *Jurnal Penelitian Dan Pengembangan Pendidikan*, *4*(1), 81. https://doi.org/10.23887/jppp.v4i1.24778.

Anggeraini, Y. (2018). Interactive teaching: Activities and the use of technology in EFL classroom. *LANGUAGE CIRCLE: Journal of Language and Literature*, *13*(1), 1–6. https://doi.org/https://doi.org/10.15294/lc.v13i1.11131.

Anwar, Z., Kahar, M. S., Rawi, R. D. P., Nurjannah, N., Suaib, H., & Rosalina, F. (2020). Development of Interactive Video Based Powerpoint Media In Mathematics Learning. *Journal of Educational Science and Technology (EST)*, *6*(2), 167–177. https://garuda.kemdikbud.go.id/documents/detail/1712717.

Azzahra, M., & Nurrohmatul Amaliyah. (2022). Analisis Faktor Penyebab Kesulitan Siswa Dalam Pembelajaran Tematik Di Kelas Iv Sekolah Dasar. *Jurnal Cakrawala Pendas*, *8*(3), 851–859. https://doi.org/10.31949/jcp.v8i3.2677.

Bustanil S, M., Asrowi, & Adianto, D. T. (2019). Pengembangan Media Pembelajaran Interaktif Berbasis Video Tutorial Di Sekolah Menengah Kejuruan. *JTP - Jurnal*

Teknologi Pendidikan, *21*(2), 119–134. https://doi.org/10.21009/jtp.v21i2.11568.

Chan, B. S. K., Churchill, D., & Chiu, T. K. F. (2017). Digital Literacy Learning In Higher Education Through Digital Storytelling Approach. *Journal of International Education Research (JIER)*, *13*(1), 1–16. https://doi.org/10.19030/jier.v13i1.9907.

Chen, H., & Chuang, Y. (2021). The effects of digital storytelling games on high school students' critical thinking skills. *Journal of Computer Assisted Learning*, *37*(1), 265–274. https://doi.org/10.1111/jcal.12487.

Cheung, L. (2016). Using the ADDIE Model of Instructional Design to Teach Chest Radiograph Interpretation. *Journal of Biomedical Education*, *2016*, 1–6. https://doi.org/10.1155/2016/9502572.

Daryanto. (2010). *Penelitian Tindakan Kelas dan Penelitian Tindakan Sekolah*. CV Gava Media.

Demirbaş, İ., & Şahin, A. (2022). The effect of digital stories on primary school students' listening comprehension skills. *Participatory Educational Research (PER)*, *9*(6), 380–397. https://doi.org/10.17275/per.22.144.9.6.

Erwin, Vini Ariani., & Y. (2019). Multimedia Interaktif Bermuatan Permainan Edukatif di Kelas V Sekolah Dasar. *Journal of Elementary Education*, *3*(2580–1147), 9. http://repository.unp.ac.id/id/eprint/32804.

Fanny, A. M., & Suardiman, S. P. (2013). Pengembangan Multimedia Interaktif Untuk Mata Pelajaran Ilmu Pengetahuan Sosial (Ips) Sekolah Dasar Kelas V. *Jurnal Prima Edukasia*, *1*(1), 1. https://doi.org/10.21831/jpe.v1i1.2311.

García-Ceberino, J. M., Antúnez, A., Ibáñez, S. J., & Feu, S. (2020). Design and Validation of the Instrument for the Measurement of Learning and Performance in Football. *International Journal of Environmental Research and Public Health*, *17*(13), 4629. https://doi.org/10.4135/9781506326139.n240.

Hanida, Neviyarni, & Fahrudin, F. (2019). Peningkatan Hasil Belajar Siswa Menggunakan Bahan Ajar Tematik Terpadu Berbasis Model Discovery Learning Di Kelas IV Sekolah Dasar. *Jurna Basicedu*, *3*(2), 716 – 724. https://doi.org/10.31004/basicedu.v3i2.60.

Harahap, L. K., & Siregar, A. D. (2020). Pengembangan Media Pembelajaran Interaktif Berbasis Adobe Flash Cs6 Untuk Meningkatkan Motivasi Dan Hasil Belajar Pada Materi Kesetimbangan Kimia. *JPPS (Jurnal Penelitian Pendidikan Sains)*, *10*(1), 1910. https://doi.org/10.26740/jpps.v10n1.p1910-1924.

Hidayah, S., Wahyuni, S., & Ani, H. M. (2017). Penggunaan Media Pembelajaran Interaktif Dengan Aplikasi Adobe Flash Cs6 Untuk Meningkatkan Motivasi Belajar Pada Komepetensi Dasar Mennganalisis Peran, Fungsi dan Manfaat Pajak. *Jurnal Pendidikan Ekonomi: Jurnal Ilmiah Ilmu Pendidikan, Ilmu Ekonomi Dan Ilmu Sosial*, *11*(1), 117. https://doi.org/10.19184/jpe.v11i1.5012.

Imam, I., Ayubi, A., & Bernard, M. (2018). Pengaruh Pembelajaran Berbasis Masalah Terhadap Kemampuan Pemecahan Masalah Matematis Siswa SMA. *JPMI:Jurnal Pembelajaran Matematika Inovatif*, *1*(3), 355–360. https://doi.org/10.22460/jpmi.v1i3.355-360.

Kennedy, G. E., Judd, T. S., Churchward, A., Gray, K., & Krause, K. L. (2008). First year students' experiences with technology: Are they really digital natives? *Australasian Journal of Educational Technology*, *24*(1), 108–122. https://doi.org/10.14742/ajet.1233.

Kusumawati, L. D., Sugito, Nf., & Mustadi, A. (2021). Kelayakan Multimedia Pembelajaran Interaktif Dalam Memotivasi Siswa Belajar Matematika. *Kwangsan: Jurnal Teknologi Pendidikan*, *9*(1), 31. https://doi.org/10.31800/jtp.kw.v9n1.p31--51.

Mensah, J. Y., & Nabie, M. J. (2021). The Effect of PowerPoint Instruction on High School

Students' Achievement and Motivation to Learn Geometry. *International Journal of Technology in Education*, *4*(3), 331–350. https://eric.ed.gov/?id=EJ1311518.

Metalin, A. M. I. P. A., Puspita, I., Puspitaningsih, F., & Diana, K. Y. (2020). Keefektifan Media Pembelajaran Powerpoint Interaktif untuk Meningkatkan Hasil Belajar Siswa Sekolah Dasar. *TANGGAP: Jurnal Riset Dan Inovasi Pendidikan Dasar*, *1*(1), 49–54. https://jurnal.stkippgritrenggalek.ac.id/index.php/tanggap/article/view/42.

Muhali, M. (2019). Pembelajaran Inovatif Abad Ke-21. *Jurnal Penelitian Dan Pengkajian Ilmu Pendidikan: E-Saintika*, *3*(2), 25–50. https://doi.org/10.36312/e-saintika.v3i2.126.

Muthaharoh, F., Pamungkas, A. S., & Alamsyah, T. P. (2019). Pengembangan bahan ajar tematik media pembelajaran berbasis Lectora inspire pada kelas IV SDN Cilegon 1. *Jurnal Dimensi Pendidikan Dan Pembelajaran*, *7*(2), 74–85. https://doi.org/10.24269/dpp.v7i2.1716.

Nafi'ah, U., Mashuri, & Wijaya, D. N. (2019). The development of digital book of European history to shape the students' democratic values. *International Journal of Emerging Technologies in Learning*, *14*(6), 147–154. https://doi.org/10.3991/ijet.v14i06.9760.

Nasrul, S. (2018). Pengembangan Bahan Ajar Tematik Terpadu Berbasis Model Problem Based Learning Di Kelas Iv Sekolah Dasar. *Jurnal Inovasi Pendidikan Dan Pembelajaran Sekolah Dasar*, *2*(1), 81–92. https://doi.org/10.24036/jippsd.v2i1.100491.

Nasution, S. R. A., & Harahap, M. S. (2019). Pengembangan Bahan Ajar Tematik Terpadu Berbasis Project Based Learning Yang Praktis di Kelas IV SD. *Seminar Nasional Multi Disiplin Ilmu Universitas Asahan*. https://core.ac.uk/download/pdf/268619206.pdf.

Noviana, E., Kurniaman, O., & Affendi, N. (2020). KOASE: Disaster Mitigation Learning Media in Elementary School. *Tadris: Jurnal Keguruan Dan Ilmu Tarbiyah*, *5*(1), 11–25. https://doi.org/10.24042/tadris.v5i1.5183.

Octaviani, S. (2017). Pengembangan Bahan Ajar Tematik Dalam Implementasi Kurikulum 2013 Kelas 1 Sekolah Dasar. *EduHumaniora, Jurnal Pendidik Dasar Kampus Cibiru*, *9*(2). https://doi.org/10.17509/eh.v9i2.7039.

Putri, H. P., & Nurafni, N. (2021). Pengaruh Media Pembelajaran PowerPoint Interaktif terhadap Hasil Belajar IPS Siswa Sekolah Dasar. *Edukatif: Jurnal Ilmu Pendidikan*, *3*(6), 3538–3543. https://edukatif.org/index.php/edukatif/article/view/986.

Putri Ningrat, S., Tegeh, I. M., & Sumantri, M. (2018). Kontribusi Gaya Belajar Dan Motivasi Belajar Terhadap Hasil Belajar Bahasa Indonesia. *Jurnal Ilmiah Sekolah Dasar*, *2*(3), 257. https://doi.org/10.23887/jisd.v2i3.16140.

Rohmah, F. N., & Bukhori, I. (2020). Pengembangan Media Pembelajaran Interaktif Mata Pelajaran Korespondensi Berbasis Android Menggunakan Articulate Storyline 3. *ECOEDUCATION (Economic & Education Journal)*, *2*(2), 169–182. https://doi.org/10.33503/ecoducation.v2i2.892.

Servitri, M. O., & Trisnawaty, W. (2018). The Development of Inquiry Science Worksheet to Facilitate the Process Skills. *Journal of Education and Learning (EduLearn)*, *12*(4). https://doi.org/10.11591/edulearn.v12i4.8937.

Shanks, J. D., Izumi, B., Sun, C., Martin, A., & Shanks, C. B. (2017). Teaching undergraduate students to visualize and communicate Public Health data with infographics. *Frontiers in Public Health*, *5*(NOV), 1–6. https://doi.org/10.3389/fpubh.2017.00315.

Sugiyono. (2015). *Meode Penelitian & Pengembangan: Research and Development*. Alfabeta.

Suryaningsih, Y., Gaffar, A. A., & Sugandi, M. K. (2020). Pengembangan Media

Pembelajaran Praktikum Virtual Berbasis Android Untuk Meningkatkan Berpikir Kreatif Siswa. *Bio Educatio : (The Journal of Science and Biology Education)*. https://doi.org/10.31949/be.v5i1.2243.

Syafriatma, W., & Amini, R. (2021). Pengembangan Bahan Ajar Tematik Terpadu Berbasis Value Clarification Technique (VCT) Example di Kelas V SD. *Jurnal Pendidikan Tambusai*, *5*, 1127–1133. https://jurnal.unimed.ac.id/2012/index.php/handayani/article/view/34172.

Taufik, A. (2019). Analisis Karakteristik Peserta Didik. *El-Ghiroh: Jurnal Studi Keislaman*, *16*(01), 1–13. https://jurnal.staibsllg.ac.id/index.php/el-ghiroh/article/view/71.

Utami, R. W., & Wutsqa, D. U. (2017). Analisis Kemampuan Pemecahan Masalah Matematika dan Self-Efficacy Siswa SMP Negeri di Kabupaten Ciamis. *Jurnal Riset Pendidikan Matematika*, *4*(2), 166–175. https://doi.org/10.21831/jrpm.v4i2.14897.

Wibowo, D. C., Ocberti, L., & Gandasari, A. (2021). Faktor Penyebab Rendahnya Hasil Belajar Siswa. *Jurnal Ilmiah Aquinas*, *4*(1), 60–64. https://jbasic.org/index.php/basicedu/article/view/3053.

Winarni, R., Slamet, S. Y., & Syawaludin, A. (2022). Development of Indonesian language text books with multiculturalism and character education to improve traditional poetry writing skills. *European Journal of Educational Research*, *10*(1), 455–466. https://doi.org/10.12973/EU-JER.10.1.455.

Yunita Anindya, E. F., Suneki, S., & Purnamasari, V. (2019). Analisis Gerakan Literasi Sekolah Pada Pembelajaran Tematik. *Jurnal Ilmiah Sekolah Dasar*, *3*(2), 238. https://doi.org/10.23887/jisd.v3i2.18053.

Zain, A. A., & Pratiwi, W. (2021). Analisis Kebutuhan Pengembangan Media PowerPoint Interaktif Sebagai Media Pembelajaran Tematik Kelas V SD. *Elementary School: Jurnal Pendidikan Dan Pembelajaran Ke-SD-An*, *8*(1), 75–81. http://download.garuda.kemdikbud.go.id/article.