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Jejeran: Interactive Game-Based Flash Media as Social Studies Learning Media in Elementary Schools

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ABSTRAK

Pembelajaran IPS di sekolah dasar selama ini masih berfokus pada metode konvensional dengan memberikan penjelasan secara verbal. Diperlukan suatu inovasi yang dapat membantu guru untuk melaksanakan pembelajaran secara menarik, efektif, dan efisien. Salah satu upaya yang dapat dilakukan adalah dengan menghadirkan suatu media pembelajaran berbasis teknologi flash yang bersifat interaktif. Tujuan dari penelitian ini adalah untuk menganalisis keefektifan media flash berbasis game interaktif sebagai media pembelajaran di sekolah dasar. Metode penelitian yang yang digunakan adalah penelitian dan pengembangan dengan model ADDIE. Penelitian ini melibatkan guru dan 27 siswa kelas tiga. Teknik pengumpulan data yang digunakan adalah hasil wawancara tidak terstruktur, observasi, angket, soal tertulis (Pretest dan Posttest). Validitas produk diperoleh dari validasi ahli dan uji coba produk. Hasil penelitian menunjukkan bahwa pengembangkan media flash berbasis game interaktif masuk ke dalam kategori sangat layak dan sangat efektif digunakan berdasarkan uji kelayakan menurut ahli media dengan persentase total sebesar 90% dan uji kelayakan menurut ahli materi sebesar 90,38%. Media pembelajaran ini dinyatakan sangat efektif berdasarkan uji efektivitas dengan hasil uji kelompok kecil dengan persentase total sebesar 83,33% dan uji coba kelompok besar dengan persentase total sebesar 90,40%. Dalam penerapannya, penggunaan media ini mampu meningkatkan nilai rata-rata dari 74,81 menjadi 86,45 sehingga media pembelajaran flash berbasis game interaktif termasuk ke dalam kategori sangat valid, sangat layak dan sangat efektif.

ABSTRACT

Social studies learning in elementary schools has so far focused on conventional methods by giving verbal explanations. An innovation is needed that can help teachers carry out learning in an interesting, effective and efficient manner. One effort that can be done is to present an interactive flash technology-based learning media. The purpose of this study was to analyze the effectiveness of interactive game-based flash media as learning media in elementary schools. The research method used is research and development with the ADDIE model. This study involved teachers and 27 third grade students. Data collection techniques used are the results of unstructured interviews, observation, questionnaires, written questions (Pretest and Post-test). Product validity is obtained from expert validation and product trials. The results showed that the development of flash media based on interactive games was in the category of very feasible and very effective to use based on the feasibility test according to media experts with a total percentage of 90% and the due diligence according to material experts was 90.38%. This learning media was stated to be very effective based on the effectiveness test with the results of the small group test with a total percentage of 83.33% and the large group trial with a total percentage of 90.40%. In its application, the use of this media was able to increase the average value from 74.81 to 86.45 so that interactive game-based flash learning media was included in the category of very valid, very feasible and very effective.

1. INTRODUCTION

Social studies learning in elementary schools is a field of study that studies humans in all aspects of life and their interactions in society, where the role of social studies is very important to educate students to develop knowledge, attitudes, and skills in order to take an active part in their lives as members of society

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and good citizens (Amalia et al., 2021; Gunansyah et al., 2021). This goal gives teachers a heavy responsibility to use a lot of thought and energy to teach social studies well. Previous study argues that social studies learning aims to (1) equip students about social science that is useful for life both now and in the future (2) students will be equipped with the ability to identify, analyse and develop solutions to problems related to social life (3) students will be trained to interact (4) students will be able to develop knowledge related to social (Fajrin, 2018).

As we all know that in essence the purpose of social studies learning in general is to instil an understanding of the development of society from the past to the present, foster a sense of nationality, and love for the country, a sense of pride as an Indonesian nation, and broaden the horizons of community relations between nations in the world (Japar, 2018; Yuan et al., 2021). However, achieving these goals is not an easy task. It requires various efforts that must be made by the teacher, both learning resource books, methods, models, and teaching aids. Social studies teaching in schools tends to focus on rote learning, misconceptions, and teacher-centred learning processes. Learning is an interaction activity in which the teacher plays a role in educating or teaching students to acquire knowledge. This means a teacher has the responsibility to monitor the progress of their students to achieve learning goals. The role of the teacher in educating is focused on the development of students to become independent students, so that students must learn and be knowledgeable (Prijanto & Kock, 2021; Webb, 2009).

Entering the 21st century, teachers are required to innovate in supporting the learning process according to the needs of students. Responding to these challenges, teachers must equip themselves with literacy competencies in accordance with the demands of the changing era (Hidayatullah et al., 2021; Khoiri et al., 2021). The teacher as an educator must be more creative and innovative by utilizing modern technology. One of the innovations that can be carried out by teachers is to create IT-based learning media. Teachers can develop IT-based learning media according to learning needs, so that it will foster students' self-motivation to be actively involved in participating in the learning process (Buchori, 2019; Renes & Strange, 2010). This is in line with the opinion of previous study that state by involving the media, learning will be more interesting, interactive, and enjoyable so that the learning process will be maximized (Hardiyanti et al., 2020; Nurhayati et al., 2020).

Learning media is a tool in the teaching and learning process. Media can attract learners' reasoning, emotions, attention, and abilities (Degner et al., 2022; Nomleni & Manu, 2018). Media is a communication channel tool. Media comes from Latin and is the plural form of the word "medium" which literally means "intermediary", namely the intermediary of the message source (a source) with the message receiver (a receiver), such as film, television, diagrams, printed materials, computers, and instructors. Examples of such media can be considered as learning media if they carry messages to achieve learning objectives. Media is related to messages and methods in the learning process (Tabroni et al., 2022; Verawati et al., 2022). Learning media development is an effort to prepare a learning media programme that is more focused on the media planning (Sitepu et al., 2022; Fischer et al., 2023). The media that will be displayed or used in the teaching-learning process is first planned and designed according to the needs of the field or students so that learning objectives can be achieved (Sutamin, 2019; Yetti & Sumadi, 2022).

Based on the results of the observation in third grade MI Nurul Ummah Tawangsari, Temanggung, Central Java, Indonesia there are several obstacles related to the learning process of social studies material types of work precisely on basic competence (KD) 3.3 identify economic activities and their relationship with various fields of work, as well as social and cultural life in the surrounding environment to the province. The KD 4.2 presents the results of identifying economic activities and their relationship with various fields of work and social and cultural life in the surrounding environment to the province level. The obstacles experienced by students include: 1) lack of mastery of the types of work material, 2) teaching materials used by students are only focused on student worksheets (LKS) and Thematic books, 3) teachers have not mastered IT learning only using the lecture method, not using models, methods, or media as support during the learning process. This can be seen when the preliminary research were conducted through observations, teacher still use conventional methods in their learning process, so that the learning becomes uninteresting, 4) the lack of enthusiasm of students in doing social studies learning, 5) the learning outcomes of third grade students in social studies are still relatively low, this can be seen from the learning outcomes of the students from year to year that are not achieved.

Based on the problems described regarding social studies material on types of work, learning media is needed that can stimulate the interaction of learning outcomes about social science. One of the efforts to overcome these problems is the use of the Flash program. Flash is an animation programme that can help create interesting projects, for example for presentation purposes, interactive tutorial CDs, and even websites (Luthfi Fatihatul Hidayah, 2022). Meanwhile, flash is a vector-based animation programme that can produce small (lightweight) files (Ekowati, 2022; Socrates et al., 2022).

Flash media is very popular and has been recognised for its sophistication and completeness of facilities capable of creating animated designs, making this software the most widely used by computer designers. Flash media serves as an entertainer and helps the visualisation process of educators to transfer knowledge in teaching and learning activities in the classroom (Hermawan et al., 2018; Palioura & Dimoulas, 2022). Flash media can be used to develop multimedia-based learning media. This interactive game-based interactive multimedia is designed very interestingly by combining images, sounds and texts that are adjusted to the level of readiness and maturity of students according to their age level (Sari et al., 2020; Harden 2022). As an interactive multimedia, of course, it can accommodate students who are quick to accept lessons and can also handle students who are slow in accepting lessons (Pradana & Gerhni, 2019; Ramadhani & Muhtadi, 2018). This is because computers are never bored, do not complain and are very patient in carrying out instructions, as requested.

There are studies that have been conducted by educational researchers to support the importance of implementing flash media-based interactive game applications in learning. Previous study found that the development of interactive learning media macromedia flash 8 is valid and practical to use in thematic learning on the theme of my experience (Rahmi et al., 2019). Macromedia flash based on guided inquiry can improve critical thinking skills as a learning innovation (Jainal & Isana Supiah Yosephine Louise, 2019; Liu & Johnson, 2020). Other research on macromedia flash-based learning multimedia on learning the introduction of local tourism in the Yogyakarta area in a very good category so that this multimedia is suitable for development as a learning multimedia and learning resource (Putra, 2018).

The novelty of this research is the application of flash media based on interactive game called *Jejeran* (Types of Work). In *Jejeran* learning media, the game presented provide an understanding related to the topic of the types of work that are easy to understand for the third-grade elementary school level. 2) The *Jejeran* game provides several images, materials, videos that increase the effectiveness of learning process due to students' activities in running the game which require high activeness. 3) flash media based on *Jejeran* interactive game presents a problem so that it gives an opportunity to increase students' critical thinking. Furthermore, the purpose of the development of interactive game-based flash media *Jejeran* is to determine the needs analysis, the form of development and the effectiveness of Flash media based on interactive games *Jejeran* in improving students' learning outcome on social studies theme types of work.

2. METHOD

The type of research used is research and development. This research uses qualitative and quantitative approaches that are carried out together, alternating and helping each other. This is in line with the opinion of previous study which states that combining quantitative and qualitative research can be done to: 1) the logic in triangulating the findings of one type of study can be checked through the findings of another type of study, 2) qualitative research can help quantitative research, 3) quantitative research helps qualitative research, 4) quantitative and qualitative research are combined to provide an overview (Syamsudin & Damayanti, 2007).

This research method is in the form of interactive game-based flash media for social studies subjects on the theme of work. Interactive Game-based flash media is intended as a learning media in face-to-face mode in social studies learning, with content in the form of real objects that can be obtained from the environment. However, there are some objects that are difficult to obtain, so media replacement is required. Therefore, research methods are used to produce certain products and test the effectiveness of these products.

The development model used is a conceptual development model, which is an analytical development model that provides or explains its components. The ADDIE development model (Analysis, Design, Development, Implementation, and Evaluation) is chosen due to its convenient stage. The data analysis technique used is from distributing questionnaires for product feasibility testing (product validation) descriptively. The instrument set is presented in Table 1.

Table 1. Media Validity Instrument Grid

No	Indicators	Sub Indicators
1	Learning objectives	Clarity of basic competencies and clarity of indicators Clarity of learning objectives
2	Learning materials	Suitability of material with basic competencies and indicators Accuracy of material coverage Correctness of material concepts Completeness of material
3	Presentation	Clarity of material appearance

No	Indicators	Sub Indicators
4	Quality of motivation	Orderliness of the material Accuracy of word choice and language used Enhance learners' creativity Foster learners' curiosity Support learners to learn independently Increase students' interest and motivation to learn

The quality of the learning media produced must meet the validity aspects of the learning media are a) The average total score obtained from each validator; b) The average total score obtained by the validator is summed up; then averaged again then averaged validity. The validity of learning media is determined by converting the average validity (Rv) into qualitative values with the categories as displayed in Table 2.

Table 2. Media Validity Test Categories

No	Range	Category
1	3.50 < Rv < 4.00	Very Valid
2	2.50 < Rv < 3.50	Valid
3	1.50 < Rv < 2.50	Invalid
4	1.00 < Rv < 1.50	Very Invalid

Effectiveness in product development using the "One - Group Pre-test Post-test Design" research design. Then, based on the results of both continued with the t test. The t test used is the paired samples t test (Sugiyono, 2019).

3. RESULT AND DISCUSSION

Result

Development of flash media based on interactive game *Jejeran* as a media application for students to learn about the types of work in social studies subjects in third grade of MI Nurul Ummah Tawangsari. The development of this media needs to be preceded by observing the condition of the learning media used in accordance with the needs of students against learning media understanding of the types of work. This is done to ensure that the media application developed can meet the needs of students. There are five stages of development that have been carried out which include: analysis, design, development, implementation, and evaluation.

Analysis of interactive game-based flash media development needs

This analysis stage is carried out to find out the problems found in the learning process. The focus of learning that is analysed by researchers is on learning social studies material types of work Identification of this problem is carried out on social studies learning theme types of work in third grade through observation, interviews with teachers and students, and document analysis. Observations carried out on social studies learning third grade MI Nurul Ummah Tawangsari. Interviews with teachers and students were conducted with class teachers and students of third grade. Document analysis was carried out to complement the results of observations and interviews. Interviews were conducted to find out and identify conditions in the field. The results of the interview were then used as a reference to take the next step to provide solutions related to these conditions. The interviews guided by interview questions but unstructured that had been prepared to conduct a needs survey.

The results of the unstructured interview shows that learning program is still teacher-centred, as expressed by the teacher, "*learning social studies does require an appropriate and correct learning process, but I have not been able to implement it, because the understanding of IT is lacking and the infrastructure owned by the school is not yet adequate. Learning is still teacher-centred*". The teacher reveals his reasons for teacher-centred learning, "*it is due to lack of confidence in developing media that can be done together by students*". The teacher reviews that they still use the LKS by reading the material together and children's achievement are still scores below the minimum completeness criteria. The students still have meet difficulties in understanding the topics discussed. Teachers realise that due to limitations, so they do not develop learning media independently to support the cognitive aspects of students. Teacher said "*I am not used to developing modern technology-based learning media that are used to support learning, especially for the cognitive aspects of students*".

From the results of these interviews in can be concluded that first, in the learning that is carried out, the teacher has used learning media, but the media used tends to be only on way informative. The learning media used tends to place students as passive recipients in learning. Secondly, teachers lack understanding of IT. Third, the social studies learning outcomes of third grade students of MI Nurul Ummah Tawangsari are still low. This learning outcome is known from the document of the score list of students at MI Nurul Ummah Tawangsari on social science subject matter.

Based on the results of this preliminary research is resulting concept of learning media on the content of social studies subject matter. Based on the issues raised it is necessary to provide a learning media in accordance with the needs of the teacher and students in learning social science. One of the solutions is employing the flash media. The media combines text, images, audio, animation and games displayed on an LCD projector, with an attractive display in accordance with the school level of students. Students can see directly the examples and images of the material presented, so they do not only imagine the explanation from the teacher. So, the use of this media can facilitate the delivery of information, so that the material delivered by the teacher can be received optimally by students. After the media is made then validated by content expert validator and expert media validator. This needs analysis aims to explore what problems arise in the social studies learning process. This analysis stage is to adjust between the material in the social studies textbook with the theme of the types of work presented in the learning media. At this stage emphasised on aspects of the benefits and suitability of the material with the objectives to be achieved, so that the use of flash learning media on the theme of the types of work is expected to be a solution to the problem that can improve the learning outcomes of students.

The learning media was developed by using audio visual technology in delivering learning content using mechanical and electronic machines to present audio-visual messages. The characteristics of the audio-visual technology are as follows: (1) linear in nature, (2) dynamic visual presentation, (3) its use is determined by the designer or maker, (4) the material is a physical representation of real ideas or abstract ideas, (5) development according to the psychological principles of behaviourism and cognitive, (6) generally teacher-oriented with a low level of interactive student involvement. Here the design that will be carried out is flash media is one type of audio-visual media, apart from film. As for those that are widely developed for learning purposes, the media was packaged in the form of application programs.

Development of flash interactive media based on Jejeran interactive game

The stage in Research and Development is focus group discussion (FGD). This activity presents media experts and content experts. The designs were presented, and the experts provide input regard to the results of research and development in the form of flash media products on the content of social studies subject matter on the theme of types of work. The content experts provide input regarding flash media for the introductory page added prayer and learning objectives. As for the learning media, the writing in the media is improved, less sound and given an interesting animation. The stages in the development of interactive game-based Flash learning media include, media design creating a storyboard in the main activity. Storyboard is a flowchart that determines the sequence of learning materials that will be displayed in the application. This storyboard will be used for more structured and measurable programming. Figure 1 is the flow of learning media design with App Inventor.

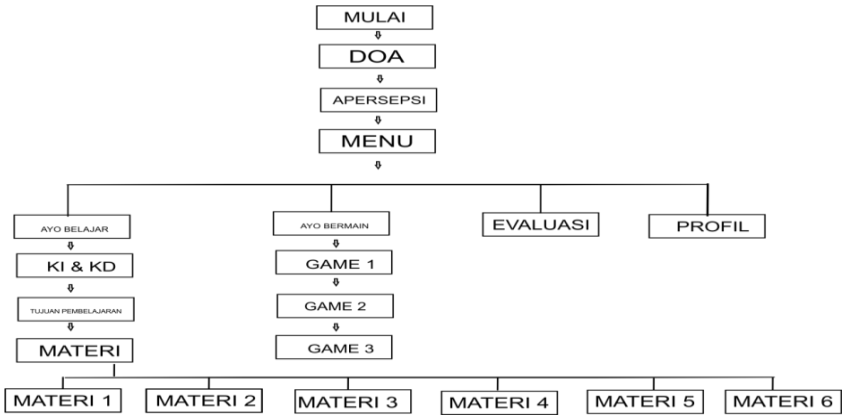

Figure 1. *Flowchart* Media *Flash*

Interface design, at this stage is the interface design stage, namely the program which is a description of the display to make it easier to translate into the programming language. This design is made

based on the flowchart that have previously made in the storyboard section. The home page of this learning media consists of an opening greeting, media name, class designation, material, maker's identity, followed by animation according to the learning theme which intends to encourage children to study hard. The view of introduction page design is show in Figure 2.

Figure 2. Introduction Page Design

Main Page Design "*Jejeran* Game (Types of Work)" on this page there is learning material, namely types of work. At the bottom there is a back button to the main page. Main page design is show in Figure 3.

Figure 3. Main Page Design

Design of Exit Page of *Jejeran* (Types of Work) Game Application is show in Figure 4.

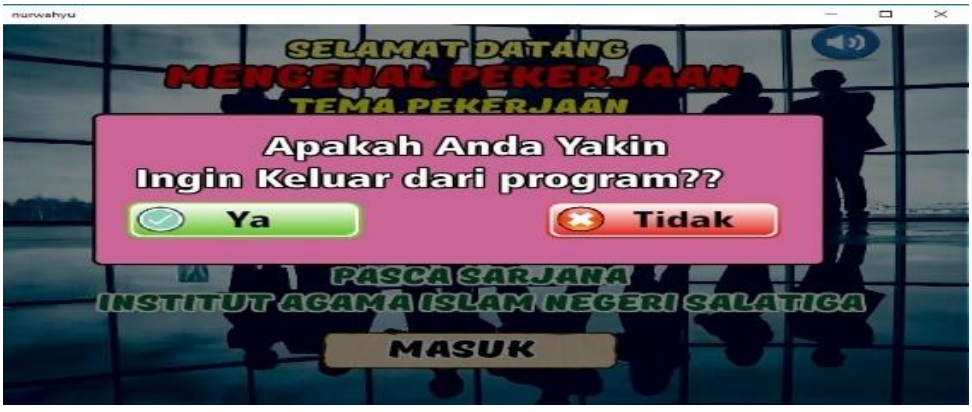

Figure 4. Design of Exit Page

Base on Figure 4, at the stage of testing the performance of Flash learning media based on interactive games *Jejeran* (Types of Work) is conducted by running the application from start to finish by

trying all the navigation buttons that have been installed. Testing is done starting from the initial menu to the final menu. After thorough testing, improvements are made which are then validated by media experts and material experts.

Feasibility Test

At this stage, interactive game-based flash media testing is carried out according to the instruments that have been designed. Testing was carried out by validating the media consisting of learning media expert from university lecture and content expert, a third grade teacher at the most favorite Islamic School in Temanggung district. Data and suggestions from the instrument results will be used as a consideration for revising the interactive game-based flash media learning media.

Content Expert Validation Instrument input are a) Learning Objectives; b) Learning Materials; c) Presentation; d) Motivation Quality. The results of the material expert validation and assessment are presented in the Table 3.

Table 3. Learning Material Expert Assessment

No	Assessment Aspect	Observation Score	Expected Score	Eligibility
1	Learning Objectives	8	8	100%
2	Learning Materials	15	16	93.75%
3	Presentation	10	12	83.33%
4	Motivating qualities	14	16	87.50%
Total		**47**	**52**	**90.38%**

Based on data displayed in Table 3, the total average assessment of media experts on interactive game-based flash media is 90.38 percent, which means that the learning media has a very valid category and is suitable for use in the social studies learning process.

Media Expert Validation Instrument results in the input of validation instruments for media experts include a) Colour; b) Use of language; c) Display; d) Presentation; e) Sound and animation. The results of the validation and assessment of learning media experts are presented in Table 4.

Table 4. Learning Media Expert Assessment

No	Assessment Aspect	Observation Score	Expected Score	Eligibility
1	Colouring	8	8	100%
2	Word and Language Usage	13	16	81.25%
3	On-Screen Display	12	12	100%
4	Presentation	11	12	91.66%
5	Animation and Sound	10	12	83.33%
Total		54	60	90%

Based on Table 4, it can be seen that the total average assessment given by media experts about Flash learning media based on interactive games *Jejeran* (Types of Work) amounted to 90% which means that it is categorized as very valid and suitable for use.

The learning media that has been completed is then validated by learning media experts. Based on the input, suggestions, evaluations and comments of media experts, the media developed still have weaknesses and shortcomings and must be corrected.

After receiving input, suggestions and comments from media experts, researchers made revisions to the product before being tested again. Some suggestions for the material are adding prayers before starting to use the media, giving learning objectives and abbreviating the material displayed in the material menu so that it does not seem to move the contents of the book into the learning media. After revising the learning media, the learning media is ready to be tested.

Small group trials involved 5 third grade students and 1 teacher at MI Nurul Ummah Tawangsari. This trial was conducted to find out how prospective users respond about Flash learning media based on interactive games *Jejeran* (Types of Work) in learning social studies theme types of work. Aspects of small group trials by students include: (1) Media Presentation, (2) Aspects of understanding the material, (3) the quality of motivation, as displayed in Table 5.

Table 5. Table of Small Group Test Results

No	Assessment Aspect	Score Observation (5)	Scores that Expected	Eligibility
1	Presentation of Material	50	60	83.33%
2	Comprehension of Material	51	60	85.00%
3	Quality of Motivation	49	60	81.66%
Total		150	180	83.33%

Base on Table 5, through small-scale trials, the score is 83.33 percent, which means that the media is very suitable for use.

Aspects of large group student trials include: (1) Media Presentation, (2) Aspects of material understanding, (3) quality of motivation. Large group trials were carried out to provide an assessment of the media used after the media was used in the learning process. Respondents were taken randomly as many as 22 students from third grade students at MI Nurul Ummah Tawangsari. The percentage of large group trial assessment data is presented in Table 6.

Table 6. Large Group Test Results

No	Assessment Aspect	Score Observation (22)	Score that Expected	Egibility
1	Presentation of Material	247	264	93,56%
2	Comprehension of Material	238	264	90,15%
3	Quality of Motivation	231	264	87,5%
Total		801	880	90,40%

Based on the data presented in Table 6, the total average assessment in the large group test of interactive game-based Flash learning media is 90.40 percent so that the Flash media made falls into the category worth using. After the experts' assessment were made, the next stage is to determine the level of feasibility of interactive game-based Flash media using the formula.

Effectiveness of flash media based on Jejeran interactive game (Types of Work) on Social Studies subject matter in third grade elementary school

The development product was tested on third grade students of MI Nurul Ummah Tawangsari conducted in third grade as an experimental class that was given treatment using interactive game-based flash media. The were 22 students involved in the experimental class. Data on pre-test and post test scores were taken to analyse the improvement of the indicators achieved by students.

The results of the increase in the average pre-test to post test in third grade MI Nurul Ummah Tawangsari from 74.81 to 86.45. So, the value of the validation results on the post-test value of the theme of the types of work can be known the number of students who have a value greater than that of the pre-test value as presented di Table 7.

Table 7. Paired Samples T Test Results

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	pretest - postest	-1.1636	4.60378	.98153	-13.677	-9.595	-11.855	21	0.000

Based on Table 7 parametric tests obtained the results of t-count 11.855, while p=0.00 <0.05, then Ha is accepted and Ho is rejected. The conclusion obtained from these results that there is a real difference between the learning outcomes on the pre-test and post test data, so that the development of interactive game-based flash media on social studies theme types of work effectively improve the learning outcomes of third grade students MI Nurul Ummah Tawangsari Kec. Tembarak Kab. Temanggung.

Discussion

Needs analysis in learning material types of work

There are three findings of needs analysis in learning social studies material types of work in third grade students MI Nurul Ummah Tawangsari. First, social studies learning is still teacher centred. Based on preliminary studies that have been described above, teacher-centred learning makes students passive. So, that learning that is still student-centred is very influential on student mastery in understanding the material on types of work. The results of interviews with third grade teachers MI Nurul Ummah Tawangsari show that this teacher-centred learning has reduced mastery of the material, as well as here students only focus on the knowledge that has been conveyed by the teacher. Thus, students cannot explore knowledge about the types of work apart from the teacher (Budiyono Saputro et al., 2019; Yuliana et al., 2022).

Second, teachers have not used IT-based media. Learning carried out by teachers at MI Nurul Ummah Tawangsari still uses makeshift media. Even teachers have not applied media as a tool to support the learning process. The use of IT-based media is a challenge for teachers because there are still some teachers who do not understand IT. IT-based learning media is currently a must for teachers as a support for the learning process in today's students. IT learning media is currently a factor in the success of students in the lessons that have been delivered by the teacher. This is confirmed by other study that the use of media is one of the success factors in the teaching and learning process (Wirza & Ofionto, 2021; Yamin & Karmila, 2020). Utilising media is one of the varied methods that can stimulate the interest of students so that they can still concentrate on learning.

Third, the need for IT-based learning media. Based on the results of the study, social studies learning in elementary schools needs to be supported by IT-based media. This is done so that social studies learning related to social life makes IT learning can package learning to be interesting and students can grab the examples. IT-based learning can be developed by teachers in the form of android-based learning, seeing today's students in every day cannot be separated from smart phones. So that this android-based media can be done by students outside of school and students can learn anywhere and anytime (Candra & Rahayu, 2021; Luthfi Fatihatul Hidayah, 2022; Rahmi et al., 2019).

Entering the 21st century, the existence of an android or smart phone has become a daily consumption for students. Gadgets can support the learning process (Irawaty et al., 2021; Saputra et al., 2021). The use of this smart phone can also be used as a learning support, one of which is by understanding various materials about the types of human work. One of them is the development of flash media products based on interactive media for this *Jejeran* game. Technology that is integrated with learning can increase students' learning motivation (Lampropoulos et al., 2019; Puspitarini & Hanif, 2019). The results of observations and interviews with teachers at MI Nurul Ummah Tawangsari show that so far, the teachers have never used interactive game-based applications in learning. The developed media can be interesting and fun for students. Applications that are designed by developing games will attract more attention from students. This is in accordance with research conducted which shows that integrating games in learning can improve students' understanding and mastery of learning content (Ozernov-Palchik, 2017).

Feasibility of Flash Media Based on Interactive Game Jejeran

The development of flash media based on *Jejeran* interactive games on social science subjects on the theme of types of work starting from the stages of product design, guidance from material and media experts, revision according to suggestions and assessment by validators, then obtained the results that the assessment of the two expert teams resulted in feasibility of 90% which indicates that the media is feasible. The results of the small-scale trial received a score of 83.33% which was included in the very feasible category, while the large-scale test received a score of 90.40 which means it is very feasible to use. The development of this increasingly advanced era of learning is more directed at how technology and education can go hand in hand. The learners faced by teachers today are the alpha generation. Learners are more familiar and interested in technology (Adriyanto et al., 2021; Sheila F. Baker, 2019).

Effectiveness of Jejeran interactive game-based flash media

Jejeran interactive game-based flash media was developed according to the needs of the field. This media was developed in accordance with the demands of 21st century learning (Boholano, 2017; Fitriyana et al., 2020). This interactive game-based flash media is an android-based learning media that can be downloaded by users. Learners after downloading can immediately use it. The results of the effectiveness test are based on the results of small group tests with a total percentage of 83.33% and large group trials with a total percentage of 90.40%. The analysis results after using SPSS show that the Sig value is 0.000 which means it is smaller than 0.05 so that it can be interpreted that Ha is accepted and Ho is rejected. So, it can be concluded that the research shows that the development of social studies learning media through flash media based on interactive games is effective on improving learning outcomes in third grade MI Nurul Ummah Tawangsari Kec. Tembarak Kab. Temanggung. Based on the results of research that has been carried out provides implications that can improve the understanding of students in social studies lessons

material types of work. In addition, students are more enthusiastic and active in participating in learning. This is because the class is considered different, the learning that is done becomes a new thing that is interesting and fun.

The development of interactive game-based flash media is in line with relevant research found previously. There is study on the development of interactive game-based learning media to improve thematic problem-solving skills in elementary school students which shows that the media is feasible to use with the results of the material validity test of 75% in the good category, 77% media expert test in very good category (Candra & Rahayu, 2021). Other study conducted development of interactive learning media assisted by macromedia flash software based on a scientific approach to linear program material meets good criteria from the validity of 4.5 which means very good, practicality 1, 94 which is fully implemented and effectiveness which shows 100% of 30 students in the complete category (Wardani & Setyadi, 2020). Then there is study on the effect of using interactive educational games "TEMATIK" based on macromedia flash on Theme 4 various jobs in class IV SDN 028229 Binjai Barat (Simanjuntak & Ananda, 2018). The study showed a significant increase in learning outcomes in learning activities by using educational games based on macromedia flash.

The results of this study still need to be followed up in the form of socialisation so that the learning media developed can be accepted and used in learning activities in schools. This increasingly rapid development of learning media requires education experts both to understand the principles, approaches, and models in accordance with the existing curriculum. The learning media developed in this study can still be developed both in terms of how to use and the content contained in it, this should be an interesting study to continue for future researchers. We fully realise that in this research there are still many mistakes and shortcomings. Therefore, the author humbly hopes that there will be improvements in future research. Therefore, it is necessary to further study the development of flash media based on *Jejeran* interactive games. It also to ensure that Flash media based on *Jejeran* interactive game plays an important role as a digital-based media that can encourage the enthusiasm of students in exploring and understanding social studies subject matter types of work.

4. CONCLUSION

The results of the preliminary study and media needs analysis. The need for interactive game-based flash media development in third grade MI Nurul Ummah Tawangsari is needed. The results of this study successfully developed a product in the form of flash media on the theme of types of work with ADDIE development steps, namely: (a) Analysis is done by analysing the needs of flash media through interviews and initial observations, (b) Planning is done by looking for material, references, making story boards and flowcharts, (c) The development stage is carried out by making learning media products (d) The implementation stage is carried out by small-scale trials with large-scale third grade students at MI Nurul Ummah Tawangsari, validation of material experts and media experts. (e) The evaluation stage is carried out by re-evaluating the product, revising the product according to suggestions from experts.

5. REFERENCES

Adriyanto, A. R., Santosa, I., Syarief, A., & Irfansyah. (2021). Design and multimedia learning principles on mooc indonesiax. *Cakrawala Pendidikan*, *40*(1), 92–106. https://doi.org/10.21831/cp.v40i1.34699.

Amalia, S. R., Purnamasari, V., & Darsimah, D. (2021). Peningkatan Hasil Belajar Menggunakan Model Pembelajaran Problem Based Learning pada Siswa Sekolah Dasar. *Edukatif: Jurnal Ilmu Pendidikan*, *3*(4), 1594–1607. https://doi.org/10.31004/edukatif.v3i4.629.

Boholano, H. (2017). Smart social networking: 21st Century teaching and learning skills. *Research in Pedagogy*, *7*(2), 21–29. https://doi.org/10.17810/2015.45.

Buchori, A. (2019). Pengembangan multimedia interaktif dengan pendekatan kontekstual untuk meningkatkan pemecahan masalah kemampuan matematika. *Jurnal Inovasi Teknologi Pendidikan*, *6*(1), 104–115. https://doi.org/10.21831/jitp.v6i1.20094.

Budiyono Saputro, M., Mas'ud, H., Saputra, & Kuswaya, A. (2019). Learning Effectivennes of Department-based Integrated Science Interpretation. *Journal of Physics: Internasional Seminar on Science Education, Bristol Kingdom*, 1–8. https://doi.org/10.1088/1742-6596/1233/1/012082.

Candra, A. M., & Rahayu, T. S. (2021). Pengembangan Media Pembelajaran Berbasis Game Interaktif untuk Meningkatkan Kemampuan Pemecahan Masalah Tematik di Sekolah Dasar. *Jurnal Basicedu*, *5*(4), 2311–2321. https://doi.org/10.31004/basicedu.v5i4.1212.

Degner, M., Moser, S., & Lewalter, D. (2022). Digital media in institutional informal learning places: A systematic literature review. *Computers and Education Open*, *3*, 100068.

https://doi.org/10.1016/j.caeo.2021.100068.
Fajrin, O. A. (2018). Pengaruh Model Talking Stick terhadap Hasil Belajar IPS Siswa SD. *Jurnal Bidang Pendidikan Dasar*, *2*(1A), 85–91. https://doi.org/10.21067/jbpd.v2i1a.2353.
Fitriyana, N., Wiyarsi, A., Ikhsan, J., & Sugiyarto, K. H. (2020). Android-based-game and blended learning in chemistry: Effect on students' self-efficacy and achievement. *Cakrawala Pendidikan*, *39*(3), 507–521. https://doi.org/10.21831/cp.v39i3.28335.
Gunansyah, G., Zuhdi, U., Suprayitno, S., & Aisy, M. R. (2021). Sustainable development education practices in elementary schools. *Journal of Education and Learning (EduLearn)*, *15*(2), 178–187. https://doi.org/10.11591/edulearn.v15i2.17091.
Hardiyanti, W. E., Ilham, M., Ekadayanti, W., & Jafarudin, J. (2020). Pelatihan Pembuatan Video Animasi Gambar "Powtoon" bagi Guru PAUD. *Abdimas Pedagogi: Jurnal Ilmiah Pengabdian Kepada Masyarakat*, *3*(2), 78. https://doi.org/10.17977/um050v3i2p78-86.
Hermawan, H., Samsuri, S., Kurniawati, D. P., Sofyaningsih, V., & Prasetyo, D. (2018). The use of controversial public issues with video and macromedia flash player media in civic education learning. *Psychology, Evaluation, and Technology in Educational Research*, *1*(1), 19. https://doi.org/10.33292/petier.v1i1.2.
Hidayatullah, Z., Wilujeng, I., Nurhasanah, N., Gusemanto, T. G., & Makhrus, M. (2021). Synthesis of the 21st Century Skills (4C) Based Physics Education Research In Indonesia. *JIPF (Jurnal Ilmu Pendidikan Fisika)*, *6*(1), 88. https://doi.org/10.26737/jipf.v6i1.1889.
Irawaty, E., Widjaja, E. M., & Sanjaya, J. (2021). Peningkatan Kualitas Belajar Dalam Menghadapi Pembelajaran Daring. *Prosiding SENAPENMAS*, 985. https://doi.org/10.24912/psenapenmas.v0i0.15131.
Jainal, S., & Isana Supiah Yosephine Louise, D. (2019). Macromedia Flash Based on Guided Inquiry in Critical Thinking Skills as Learning Innovarions. *International Journal on New Trends in Education and Their*, *10*, 21–29. https://eric.ed.gov/?id=ED598375.
Japar, M. (2018). The Improvement of Indonesia Students 'Engagement in Civic Education through Case-Based Learning.' *Journal of Social Studies Education Research*, *9*(3), 27–44. https://dergipark.org.tr/en/pub/jsser/issue/43625/534222.
Khoiri, A., Evalina, Komariah, N., Utami, R. T., Paramarta, V., Siswandi, J., & Sunarsi, D. (2021). 4Cs Analysis of 21st Century Skills-Based School Areas. *Journal of Physics: Conference Series*, *1764*(1), 012142. https://doi.org/10.1088/1742-6596/1764/1/012142.
Lampropoulos, G., Siakas, K., & Anastasiadis, T. (2019). Internet of Things in the Context of Industry 4.0: An Overview. *International Journal of Entrepreneurial Knowledge*, *7*(1), 4–19. https://doi.org/10.2478/ijek-2019-0001.
Liu, J. C., & Johnson, E. (2020). Instructional Development of Media-Based Science OER. *TechTrends*, *64*(3), 439–450. https://doi.org/10.1007/s11528-020-00481-9.
Luthfi Fatihatul Hidayah. (2022). Pengembangan Media Pembelajaran Interaktif Macromedia Flash Player Mata Pelajaran IPS. *Journal of Education and Learning Sciences*, *2*(1), 42–69. https://doi.org/10.56404/jels.v2i1.15.
Nomleni, F. T., & Manu, T. S. N. (2018). Pengembangan Media Audio Visual dan Alat Peraga dalam Meningkatkan Pemahaman Konsep dan Pemecahan Masalah. *Scholaria: Jurnal Pendidikan Dan Kebudayaan*, *8*(3), 219–230. https://doi.org/10.24246/j.js.2018.v8.i3.p219-230.
Nurhayati, S., Suryani, N., & Suharno. (2020). Need Analysis of Audio-Visual Media Development to Teach Digestive System for Elementary School. *Journal of Educational Technology and Online Learning*, *3*(2), 152–167. https://doi.org/https://doi.org/10.31681/jetol.672104.
Ozernov-Palchik. (2017). Longitudinal stability of pre-reading skill profiles of kindergarten children: implications for early screening and theories of reading. *Ilmu Perkembangan*, *20*(5). https://doi.org/10.1111/desc.12471.
Pradana, P. H., & Gerhni, F. (2019). Application of Flash Card Learning Media to Improve Children's Language Development. *Journal of Education and Instruction (JOEAI)*, *2*(1), 25–31. https://doi.org/10.31539/joeai.v2i1.587.
Prijanto, J. H., & Kock, F. De. (2021). Peran Guru Dalam Upaya Meningkatkan Keaktifan Siswa Dengan Menerapkan Metode Tanya Jawab Pada Pembelajaran Online. *Scholaria: Jurnal Pendidikan Dan Kebudayaan*, *11*(3), 238–251. https://ejournal.uksw.edu/scholaria/article/view/4318.
Puspitarini, Y. D., & Hanif, M. (2019). Using Learning Media to Increase Learning Motivation in Elementary School. *Anatolian Journal of Education*, *4*(2), 53–60. https://eric.ed.gov/?id=EJ1244451.
Putra, L. D. (2018). Pengembangan Multimedia Pembelajaran Interaktif Pengenalan Pariwisata Lokal Berbasis Macromedia Flash untuk Siswa Sekolah Dasar Yogyakarta. *Jurnal JPSD*, *5*(1), 46–51. http://download.garuda.kemdikbud.go.id/article.php?article=925129&val=7241&title=pengemb.

angan multimedia pembelajaran interaktif pengenalan pariwisata lokal berbasis macromedia flash untuk siswa sekolah dasar yogyakarta.

Rahmi, M. S. M., Budiman, M. A., & Widyaningrum, A. (2019). Pengembangan media pembelajaran interaktif macromedia flash 8 pada pembelajaran tematik tema pengalamanku. *International Journal of Elementary Education*, *3*(2), 178–185. https://doi.org/10.23887/ijee.v3i2.18524.

Ramadhani, R., & Muhtadi, A. (2018). Development of Interactive Multimedia in Learning Islamic Education. *International Journal of Multicultural and Multireligious Understanding*, *5*(6), 9–15. https://doi.org/10.18415/ijmmu.v5i6.488.

Renes, S. L., & Strange, A. T. (2010). Using Technology to Enhance Higher Education. *Innovative Higher Education*, *36*(3), 203–213. https://doi.org/10.1007/s10755-010-9167-3.

Saputra, D., Gurbuz, B., & Haryani, H. (2021). Animasi berbasis android untuk materi unsur kimia dan percobaan sebagai media pembelajaran interaktif. *Jurnal Pembelajaran Sains*, *4*(2), 185–191. http://repository.radenintan.ac.id/10785/1/SKRIPSI 2.pdf.

Sari, I. P., Nurtamam, M. E., & Hanik, U. (2020). Pengembangan Multimedia Interaktif Berbasis Game 2D Flash Pada Pembelajaran Matematika Materi Pecahan Sederhana Untuk Siswa Kelas III UPTD SDN Banyuajuh 4 Kamal. *Widyagogik : Jurnal Pendidikan Dan Pembelajaran Sekolah Dasar*, *7*(2), 83–91. https://doi.org/10.21107/widyagogik.v7i2.7815.

Sheila F. Baker, R. E. L. (2019). The writing performance of elementary students using a digital writing application: Results of a teacher–librarian collaboration. *Interactive Technology and Smart Education*, *16*(4), 343–362. https://doi.org/10.1108/ITSE-08-2018-0057.

Simanjuntak, E. B., & Ananda, N. F. (2018). Pengaruh Penggunaan Game Edukasi Interaktif "Tematik" Berbasis Macromedia Flash Terhadap Hasil Belajar Tema 4 Berbagai Pekerjaan Kelas IV Sdn 028229 Binjai Barat Tp 2017/2018. *Jurnal Guru Kita (JGK)*, *2*(3), 14–20. https://doi.org/10.24114/jgk.v2i3.10342.

Sugiyono. (2019). *Metode Penelitian Pendidikan (Kuantitatif, Kualitatif, Kombinasi, R&D dan Penelitian Pendidikan)* (3rd ed.). Alfabeta.

Sutamin, N. W. (2019). Penggunaan Model Pembelajaran Small Group Work (SGW) dengan Media Audio Visual untuk Meningkatkan Prestasi Belajar Bahasa Indonesia. *Jurnal Imiah Pendidikan Dan Pembelajaran*, *3*(2), 181–188. https://doi.org/10.23887/jipp.v3i2.18075.

Syamsudin, A. ., & Damayanti, V. (2007). *Metode Penelitian Pendidikan Bahasa*. Rosda.

Wardani, K. W., & Setyadi, D. (2020). Pengembangan Media Pembelajaran Matematika Berbasis Macromedia Flash Materi Luas dan Keliling untuk Meningkatkan Motivasi Belajar Siswa. *Scholaria: Jurnal Pendidikan Dan Kebudayaan*, *10*(1), 73–84. https://doi.org/10.24246/j.js.2020.v10.i1.p73-84.

Webb, N. M. (2009). The teacher's role in promoting collaborative dialogue in the classroom. *British Journal of Educational Psychology*, *79*(1), 1–28. https://doi.org/10.1348/000709908X380772.

Wirza, M. A., & Ofionto. (2021). Penggunaan Microsoft Teams dalam Pembelajaran Daring pada Mata Pelajaran Sejarah di SMA Negeri 1 Bukittinggi. *Journal Kronologi*, *3*(1), 106–118. https://doi.org/10.24036/jk.v3i1.120.

Yamin, M. R., & Karmila. (2020). Analisis Kebutuhan Pengembangan Media Pembelajaran Berbasis Cartoon dalam Pembelajaran IPA pada Materi Lingkungan Kelas III SD. *Biology Teaching and Learning*, *2*(2), 159–170. https://doi.org/10.35580/btl.v2i2.12307.

Yuan, Y. P., Wei-Han Tan, G., Ooi, K. B., & Lim, W. L. (2021). Can COVID-19 pandemic influence experience response in mobile learning? *Telematics and Informatics*, *64*, 101676. https://doi.org/10.1016/j.tele.2021.101676.

Yuliana, N., Purwati, N., & Hanapi, H. (2022). Improving student's logical thinking abilities and learning outcomes through guided inquiry model. *Prisma Sains : Jurnal Pengkajian Ilmu Dan Pembelajaran Matematika Dan IPA IKIP Mataram*, *10*(2), 345–351. https://doi.org/10.33394/j-ps.v10i2.4822.