Designing Virtual Field Trip Learning Media on Natural features Topic in Elementary School

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Abstract
This study was motivated by the lack of development of digital media in social studies learning for fifth grade the concept of natural features. The concept contains a wide and varied subject matter, so it must be packaged in an attractive media. This study aims to find knowledge related to the virtual field trip media design, determine the feasibility of the media from the validation results of material experts, linguists, and media experts, and determine the responses of teachers and students to the use of media. By using video media, Virtual Field Trips can take students to places they have never seen or visited in person. The method used in this research is Design and Development using the ADDIE model development. This research produces a product in the form of virtual field trip learning media on the natural features of social studies fifth grade elementary school. The participants of this study consisted of material expert lecturers, linguists, and media experts to provide an assessment of this learning media. Data collection techniques were carried out using questionnaires and interviews. The results of this study indicate that the virtual field trip learning media is considered very feasible as a medium that can be used in learning. This can be seen from the results of the validation by three experts, namely material experts, linguists, and media experts on each aspect of the virtual field trip media getting a score of 79.26% with a "excellent" interpretation. In addition, the virtual field trip learning media received responses from users, namely students and teachers who viewed from various aspects and indicators got a score of 92% with a "excellent" interpretation. That way, the media is very suitable to be used in social studies learning natural features material for fifth grade elementary school.

Keywords: Learning Media, Virtual Field Trip, Social Studies Learning

INTRODUCTION
Education in this decade is suspected of having the industrial revolution 4.0, which in this case is more commonly known as the century of openness and globalization. This period was marked by the existence of technology and information which moved very fast, which in this case applies in various aspects of life and one of them is education. One of the many breakthroughs that exist in the world of education related to ICT is the start of various learning based on computer networks and the
Internet. Advances in technology go hand in hand with developments in the field of science, which in this case, especially in the field of education, must be in line with the capabilities possessed by both teachers and students to make various adaptations to the existing era, where students are expected to be able to apply technology effectively, wise while teachers need to be able to take advantage of existing learning technology developments to keep pace with students. With the development of this technology, it is very influential in the world of education, but this can be an opportunity which in this case is the context of improving the quality of education.

With developing technology, students are required to be able to compete in a global society, one way is by mastering 21st century skills. These skills must be applied as early as possible to students in the learning process. 21st century skills are identified as 4Cs skills, namely critical, creative, communicative and collaborative thinking. 4Cs skills in elementary schools are strongly supported by the 2013 education curriculum. One of the subjects that can support these 4Cs skills is Social Sciences (National Education Association, 2010). Social studies learning at the elementary and higher education levels, in this case, does not make the theoretical aspects of science the main spot, but in this case it is more on the practical aspects that provide lessons, studies, and also studies of symptoms and also various social issues that exist in the world. community where this will be adjusted to the level of education carried out by students. Social studies learning is also related to the interaction between humans and the community at school or outside of school.

As in practice, learning in schools, especially social studies learning, has various problems, which in this case are felt by the teaching staff where this occurs during the teaching process. The innovation or development needed in conditions like this is found in learning media which are expected to be able to increase students’ learning motivation and knowledge. Because there are still many teachers who use learning media in the past or are conventional, which in this case has consequences in the form of saturation which causes the classroom atmosphere to be monotonous or flat. Referring to the current context of the learning process in Social Sciences, it is realized that there are many shortcomings that must be prepared by teaching staff for various learning methods. The substance of social studies students at the education level has a very wide area with a variety of varied discussion contexts. One example in this case is about natural features. The material content related to natural features includes natural features and artificial natural features which contain various substances. As a consequence of this, teachers as teaching staff have a big role in teaching various content from social studies material where this is crucial, related to how to apply strategies and learning media that can make students more enthusiastic in learning and also to increase their interest in learning, if in this case it has been planned creatively and also innovatively.

In conditions like this, the teaching staff needs to make a renewable innovation so that students are able to receive and learn about the information provided as optimally as possible. Teachers in this case are also required to be able to know about the factors that will influence the student's learning process, which in this case can be in the form of inhibiting factors or factors that are supporting and able to be the development of learning innovation. These factors can be overcome with several solutions, one of the solutions in overcoming problems that arise during online learning is the use and optimization of learning media (Wibowo, 2020). To overcome these problems, namely using the development of technology that exists at this time. One of them uses the TPACK approach in the learning process. Technological Pedagogical and Content Knowledge or abbreviated as TPACK which contains the principle of knowledge that contains pedagogics, technology, and also content that is mastered by the teaching staff as material to support learning activities. This is because learning in this era requires teachers or teaching staff to be able to be friendly with the existence of technology. Thus, the three components that exist are not only limited to pedagogy, but also various aspects of content and technology that must be integrated in the existing learning process.

Appropriate learning media will be able to improve knowledge, understanding, and quality of learning (Yaumi, 2018). Through the use of learning media students absorb the material as optimally as possible. In addition, the function of learning media is as a supporting instrument that supports teachers in the course of teaching which is expected to be able to change the atmosphere and conditions of student learning. Learning media is also expected to be able to process various materials
that the teacher wants to convey to students so that in this way students' abilities and knowledge will increase.

The use of learning media is intended to motivate students in the process of absorbing information and knowledge in the subject. Instructional media indirectly explain the situation and reality to help students get the right information. For this reason, the authors developed a learning media called a virtual field trip (VFT). Through video learning media, Virtual Field Trip is able to become an effective medium because in this case students will be presented with video content and explanations which in this case are about very attractive material. The existence of this virtual field trip in relation to the teaching component acts as one way to make the interaction process between teachers and students high and also in this case make the interaction between students and teachers high through the application of technology (Eneng Desri, et al., 2018). Virtual Field Trip presents a video that aims to provide opportunities for observation and analysis where the analyzer and observer do not have to be at the location in real time or in other words have the opportunity to get information from the experts. When carrying out a field trip, in this case it is considered as less practical for teachers and students. This is because when doing this will be very draining in terms of time and cost. It is undeniable that this involves a big risk, because nature itself is something that cannot be predicted with certainty. Meanwhile, if you apply the Virtual Field Trip video media, you can take students to places they have never seen or visited in person. This media allows students to digest information about an area without having to visit an area directly. Bitner (1999) says that the application of virtual mode on field trips will provide a project-based learning where in this case students will be given a problem and they will be asked to overcome and solve existing problems on the basis of observation, that is able to direct students to think critically and stimulate their interest in the material presented. Through Virtual Field Trips there is an expectation that students have the capability to better capture the material provided by the teaching staff and are also able to make it easier for students to carry out observations on objects that have close relevance to existing natural features. With a process that in this case has been easy to do in classroom learning without having to visit real locations in real life.

METHOD

The study method applied in this research is the Design And Development (D&D) method or design and development research. Richey and Klein (2007) suggest that Design And Development is a systematic method of the design, development, and evaluation process that aims to establish an empirical basis for the manufacture of new or improved instructional and non-instructional products and tools. In line with this, Rusdi (2019) argues that design research and development is an activity that applies knowledge to create and develop products which in this case can be in the form of products that have existed before or in this case do not yet exist.

The research procedure used in this research is to use the stages of the model developed by Reiser and Mollenda, namely the ADDIE (Analysis-Design-Develop-Implement-Evaluate) model. The stages of the ADDIE development model are interconnected with each other so that the implementation is carried out in stages.

Participants in this study are experts and users. Participants will be described in full as follows:

1. A material expert who in this case acts as a social studies education lecturer at the UPI Campus located in Cibiru, who in this case will be an examiner for the accuracy of the material and the scope of the material contained in the media to be developed.
2. Media experts who in this case act as lecturers who are competent in the field of drawing or design, in this case are lecturers of media from the UPI Campus located in Cibiru.
3. Linguists who in this case are lecturers with Indonesian language backgrounds who will be examiners of the feasibility in terms of the existing language where this will be adjusted to the development of elementary school children, especially those in fifth grade.
4. The fifth grade teacher who is a class teacher from SDN 168 Cipadung.
5. Fifth grade students consisting of 15 students.
In order to collect the data needed in the study, the researcher collected data obtained from the subjects involved in the study. The data can answer the problem formulation contained in the purpose of this study. This study's data collection technique applied qualitative methods using questionnaires and interviews.

The data analysis technique is a qualitative descriptive research method to describe the process and results of developing virtual field trip learning media, especially landscapes. The research data was obtained from the validation questionnaire of material experts, media experts, and linguists as well as from the questionnaire responses of teachers and students. The data that has been collected through a questionnaire is then analyzed to be interpreted. This data collection was carried out using a questionnaire with a Likert scale, namely a scale in the form of a score from 1-4. The way to analyze it is by calculating the results of the questionnaire into percentage form. The scores obtained from the statements will be added up and averaged and then converted into percentage form by applying the formula, namely:

\[ Ps = \frac{S}{N} \times 100\% \]

- \( Ps \) = Percentage
- \( S \) = Total score obtained
- \( N \) = Number of ideal scores

Conclusions are drawn based on the results of research data analysis. Drawing a conclusion is carried out in order to generalize the various findings obtained in the study in order to become an answer to various problem formulations that have been previously determined. The findings of the data analysis carried out in this study are about assessing the feasibility of virtual field trip video learning media on natural features in the Social Sciences folder, precisely at level V SD.

RESULTS AND DISCUSSIONS

The research carried out is a D&D research that designs and builds virtual field trip learning media using the ADDIE model which consists of 5 stages, namely the analysis stage, the design stage, the development stage, the implementation stage, and evaluation stage to produce a final product in the form of virtual field trip learning media.

1. Analysis (Analyze)

The analysis stage is the first step in making this virtual field trip learning media in order to find sources of information in the field as data needed to support the creation of virtual field trip learning media. Starting from the analysis of social studies learning, analysis of learning methods, analysis of learning media needs, analysis of the characteristics of fifth grade students, as well as analysis of materials and objectives. Based on the results of the analysis, it was found that social studies subjects were less attractive to students, this was because in the presentation of their learning students were given teaching materials in the form of books and the technology used had not been able to fully support learning. The use of technology-based learning media is considered to be able to overcome problems related to student interest in learning because the characteristics of fifth grade students are happy to learn using interesting and fun media so that students will feel happy and more enthusiastic about learning when using technology-based learning media. Methods and media are interrelated learning components in order to achieve educational goals. The face-to-face learning method for social studies learning, especially the natural features of the teacher, is more likely to use lecture and discussion methods. Likewise, when the learning process is carried out face-to-face, the teacher conveys material in the form of learning videos from YouTube so that the method used has not been able to provide students with direct experience related to the material presented. The use of learning media can help teachers in supporting the learning process in the classroom and become a determining factor for success in learning. According to Gerlach and Ely (1971) suggests that learning media is something related to learning which makes it easier for students to receive knowledge and skills during the learning process. Learning media commonly used in schools where research is carried out are media in the form of learning videos, textbooks, and power points. Teachers feel the need
for new innovations, one of which is by creating learning media that makes students happier and more enthusiastic about learning. Therefore, what was developed by the researchers was in the form of virtual field trip learning media. The development of virtual field trip media was carried out because there was still a lack of variety of technology-based media used in the social studies learning process, especially natural features.

2. Design

The process of designing (design) virtual field trip learning media on the natural features material for social studies subjects was developed by presenting videos that clarify the presentation of the material, 360-degree panoramic images that match the material, and also available practice questions as a form of evaluation after listening to learning materials, presentations the material was developed by taking into account students' interest in learning. The media format in this study is a media that can be accessed through a website that is designed according to the characteristics of students and their learning interests. Media that can assist students in explaining material that is quite broad by being summarized and made interestingly and provides opportunities for observations and analyzes that are carried out without having to be in the actual place. The description of the material is explained from the definition, types, characteristics, benefits, to livelihoods. Natural features are described and divided into 2 types, namely, natural features in land areas and natural features in water areas. The natural features of the land area are divided into 4 types and are described along with their livelihoods, while the natural features of the water area are divided into 5 types and their livelihoods are also described. The material developed in the learning media is adjusted to the competencies at the fifth grade level of elementary school and aims to achieve the objectives of the 2013 curriculum and is adapted to 21st century education.

Researchers also make GBPM (Outline of Media Program) and RPP (Learning Implementation Plan). Making GBPM aims as a guide or guide to the steps in making a learning media that will be useful in the learning process. While making lesson plans aims to direct learning activities using media that have been developed. The learning model used is the Problem Based Learning Model. This model was chosen because the use of virtual field trip media in learning is expected to be able to adapt to the characteristics of social studies learning in elementary schools. Researchers developed web-based learning media, namely virtual field trip media that researchers made through the Lapentor platform. The platform is a special platform in the creation of virtual-based media. The Lapentor platform is a service that can be accessed online. By using this media, materials can be presented more attractively and more interactively with the various features available in it. is a special platform in the creation of virtual-based media. The Lapentor platform is a service that can be accessed online. By using this media, materials can be presented more attractively and more interactively with the various features available in it.

In addition, in this virtual field trip, researchers also developed audio and video media. In making audio media, researchers recorded through a recording application found on mobile phones. After that, in order not to be monotonous, the recording was added with instruments with a volume that was quite small compared to the voice of the narrator. Furthermore, in making videos, researchers use the animaker application in the video editing process. The videos made are videos about explanations of natural features, kinds of natural features, benefits and characteristics of natural features and livelihoods on these natural features. Researchers look for musical instruments through youtube as an accompaniment in video so as not to be monotonous and look for 360-degree panoramic images that will be displayed through the istreetview website. After the required video materials were collected, the researchers proceeded to the video editing process and adding the narrator's voice through the animaker application. The finished video is then uploaded to a personal youtube channel which will later be uploaded to the virtual field trip media.

3. Development

At this stage there are several steps that will be taken, namely the manufacture of virtual field trip media products, material expert validation, linguistic expert validation, media expert
validation, and revision based on expert judgment. The media that has been created will then be validated by experts consisting of material experts namely Dra. Hj. Tin Rustini, M.Pd., a linguist, Mrs. Dr. Kurniawati, M.Pd., and media experts, namely Mr. Wirmanto Suteddy, S.T., M.T.

First, the researcher validated the material which aims to get an assessment and advice on aspects of the content of the material in the virtual field trip learning media for natural features that have been designed by the researcher. Based on the material expert's assessment of the content and presentation aspects of the virtual field trip learning media, the natural features material is feasible to be tested on users. This is evidenced by the percentage value obtained from material experts of 64.05% with a "Good" interpretation according to the Likert scale based on indicators of the suitability of the material concept in terms of scientific concepts, material accuracy, encouraging curiosity, and learning presentation. The developed media deserves to be tested with suggestions and improvements. The advice given by the material expert is that the material that is packaged must be in accordance with the level of cognitive development, skills, attitudes and morals of students.

The two researchers carried out language validation which aimed to obtain assessments and suggestions on linguistic aspects in the virtual field trip media for natural features that had been designed. Based on the linguist's assessment of the linguistic aspects in the virtual field trip media, the natural features material is very feasible to be tested with users. This is evidenced by the percentage value obtained from linguists of 90.3% with an interpretation of "Excellent" according to the Likert scale based on communicative, straightforward, dialogical and interactive indicators, conformity to student development, conformity with linguistic rules, and the use of symbols and icons. The advice given by linguists is to correct errors in writing and improve the writing of prepositions.

Third, the researchers conducted media validation aimed at obtaining assessments and suggestions on aspects of technical quality and content quality in the virtual field trip media for natural features that have been designed. Based on the assessment of media experts on aspects of technical quality and content quality in virtual field trip media, natural features material is very feasible to be tested for users. This is evidenced by the percentage value obtained from media experts of 88.95% with the interpretation of "Excellent" according to the Likert scale based on indicators of usability, display design and illustration design (content). As for the advice given by media experts, namely, in virtual field trip media there must be an increase in features to make it more interactive.

The overall recapitulation of the results from the three experts, namely material experts, linguists, and media experts got a percentage of 79.26% with the interpretation of "Excellent". It can be concluded that the virtual field trip learning media on the natural features material for social studies fifth grade elementary schools is in the very category of being used as a medium in the learning process.

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<tr>
<th>Reviewer</th>
<th>Material Expert</th>
<th>Linguist</th>
<th>Media Expert</th>
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<tbody>
<tr>
<td>Aspect</td>
<td>Content</td>
<td>Presentation</td>
<td>Kebahasaan</td>
</tr>
<tr>
<td>Score</td>
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<td>62.5%</td>
<td>90.3%</td>
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<tr>
<td>Total Score</td>
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<tr>
<td>Interpretation</td>
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4. Implementation

The implementation of virtual field trip learning media in this study was carried out on 15 fifth grade elementary school students. The students are from the same class. Before the implementation, the researcher discussed with the class teacher to instruct students to bring their own cellphones. Implementation is carried out using a problem-based learning model with the aim of helping students develop thinking skills and problem-solving skills, as well as becoming independent learners. Student activities begin with being given LKPD as a means for students to solve problems contained in the LKPD by finding out through virtual field trip learning media. After students can solve the problem, the learning activity ends with the holding of a final test in
the form of an evaluation question. The evaluation questions contain questions about the natural features of land and water areas.

The teacher's assessment was carried out by one of the fifth grade teachers on the virtual field trip learning media for natural features materials, getting a score of 96.8% with a "Excellent" interpretation based on aspects of material content, aspects of material presentation, linguistic aspects, and design quality aspects. The teacher as a media user fills out an assessment questionnaire and gives a positive response to the virtual field trip media designed by the researcher. The virtual field trip learning media that has been developed is very attractive, efficient, involves students, and is suitable for use as a medium in the learning process. In the comments and suggestions column provided, the teacher gives positive comments. In addition to comments, the teacher also provides suggestions for improvement. The suggestion is that in the management of learning related to conditioning students to focus on learning, it needs development so that students with learning styles that are not audio-visual can still follow the lesson well.

The student assessment was carried out by 15 fifth grade students on the virtual field trip learning media for natural features materials, getting a score of 87.2% with a "Excellent" interpretation based on aspects of material content, presentation aspects, linguistic aspects, and media quality aspects. Students as media users fill out an assessment questionnaire and give a positive response to the virtual field trip media that has been designed by the researcher. This media is liked and liked by students to be used in learning, especially natural features material. The display presented on this virtual field trip media attracts students' attention. The material presented is easy to understand and attracts students' interest in learning so that students enjoy learning by using virtual field trip media.

Table 2. Recapitulation of Ratings by Users

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<tr>
<th>Reviewer</th>
<th>Teacher</th>
<th>Student</th>
</tr>
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<tbody>
<tr>
<td>Score</td>
<td>96.8%</td>
<td>87.2%</td>
</tr>
<tr>
<td>Total Score</td>
<td>92%</td>
<td></td>
</tr>
</tbody>
</table>

The results of the recapitulation of responses by users, namely students and teachers on virtual field trip media for social studies material regarding natural features, got a score of 92% with excellent interpretation. So based on the assessments that have been made by experts and users related to the virtual field trip media for social studies material regarding natural features, it can be concluded that the virtual field trip media designed is good and feasible to use in learning, this can be seen from the assessment and responses that have been given by experts and users.

5. Evaluation

The final stage in the development of this virtual field trip media is evaluation. Evaluation is carried out based on the results of the assessment that has been obtained from the user. Users of this virtual field trip media are one teacher and 15 students from SDN 168 Cipadung. Evaluation is done to improve the overall virtual field trip media. Based on the results of the assessment that has been obtained from experts and users regarding the virtual field trip media, it shows that the media designed by the researcher is good and feasible to use in learning in accordance with suggestions and input. This can be seen from the assessments and responses that have been given both from experts and from teachers, it's just that students do not provide suggestions and suggestions for improvements to the virtual field trip learning media products that have been designed. The weaknesses that need to be evaluated for further consideration in the development of this virtual field trip media are for material and 360 panoramic images to be more adapted to real situations in students' daily life.

CONCLUSIONS AND SUGGESTIONS

Conclusions
Based on design and development research in the form of virtual field trip learning media, it can be concluded that:

1. The design of the virtual field trip learning media on the natural features material for fifth grade of this elementary school uses the D&D research method by applying the ADDIE model which consists of five stages, namely the analysis stage, the design stage, the development stage, the implementation stage, and the evaluation stage. The initial stage in the design is the analysis stage. In the analysis phase, the activities carried out are analyzing social studies learning in fifth grade, analyzing the needs of students' characteristics by conducting interviews with class 5 teachers, then analyzing learning methods and ending with an analysis of the material and learning objectives in accordance with the applicable curriculum. After obtaining data from the analysis stage, the researcher proceeds to the next stage, namely the design stage. At the design stage, the activities carried out are choosing media formats, material descriptions, GBPM and RPP designs and media product designs. Then the media was developed by researchers through a development stage involving the media development team, namely material experts, linguists, and media experts.

2. The feasibility of virtual field trip learning media on the natural features material for fifth grade elementary school is carried out in the development stage. The development stage is carried out by validating material experts, linguists and media experts. Material experts, linguists and media experts are lecturers at the Indonesian Education University, Cibiru Campus. The purpose of validation is to determine the feasibility of the media that has been made. Validation is done by filling out a questionnaire and then the results are calculated using a Likert scale scoring. Based on the results of the recapitulation of filling out the questionnaire, the material expert received a score with the interpretation of "Good", the linguist received a score with the interpretation of "Excellent", and the media expert received a score with the interpretation of "Excellent".

3. The response of teachers and students to the use of virtual field trip learning media on the natural features material for fifth grade elementary school is carried out in the implementation phase. The implementation phase was carried out at SDN 168 Cipadung with one teacher and 15 students participating. To find out the results of the test, the teacher and student responses were carried out through filling out a questionnaire and then calculated using a Likert scale scoring. Based on the recapitulation of the teacher's and student's response questionnaires, they obtained scores with the interpretation of "Excellent". From the results of these data, it can be stated that the virtual field trip learning media on the natural features material for fifth grade elementary schools is very suitable to be used to help the learning process.

The implications of the media generated through this research are as follows:

1. The virtual field trip learning media can attract students' attention to study social studies material on natural features. This is because the virtual field trip learning media is designed in an interesting way and involves students directly in its use, so that students don't just listen to the material.

2. The virtual field trip learning media helps students understand the material and familiarizes students with using technology in the learning process.

3. Presentation of material on virtual field trip learning media on substances related to the surrounding environment which in this case will be able to be a helper for students to understand various existing materials.

4. The virtual field trip learning media that has gone through the development process obtained a satisfactory or excellent assessment so that it can be said that it is feasible to be applied to fifth grade students where this is based on the results of expert assessments and the trial process carried out by teachers and students.

Suggestions

Recommendations that can be given by researchers based on the results of research that have been carried out are as follows.
1. To teachers, in order to be able to use virtual field trip learning media from these findings as an alternative learning media for natural features that are attractive for their application in the learning process by paying attention to the design stage of this media development process.

2. To students, this learning media can be used as a tool to study a material properly and seriously in order to achieve learning objectives.

3. It is recommended that those who will develop the media in the development process pay attention to the situation, conditions, and characteristics of students as research participants. In addition, it is recommended to develop virtual field trip learning media that can be accessed without using the internet network.

4. Media trials have not been carried out in a wide range with the linkage of several schools. Therefore, it is very necessary to test the virtual field trip learning media extensively by involving several schools.

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