

## Increasing students' culture literacy using virtual reality field trip model: Need analysis

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### Abstract

The rapid exchange of information through technology has caused a cultural change in Indonesia. This causes the local culture to be lost and the penetration of foreign cultures. This article aimed to analyze the need to develop Field Trip Model Virtual Reality for elementary school students. This study used the qualitative descriptive method. The 50 students and 28 teachers from an elementary school in Jakarta became participants. The data were collected using questionnaires form and interviews. The data were analyzed using triangulation. The result showed that the learning model was needed to increase cultural literacy. From questionnaire data show that (1) students need learning media that can make it easier to recognize the culture, (2) students' awareness of culture is still low, and (3) students need technology that allows users to feel the conditions as real from the three-dimensional effects.

Keywords: media; VR, cultural, literacy, school;

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## 1. Introduction

The development of science and technology currently affects the development of other scientific fields, such as the field of education. Developments in education can be seen from the changes in its components, such as the quality of educators, curriculum, learning processes, learning facilities and infrastructure, learning resources, and others (Buckley et al., 2022; Supena et al., 2020). The rapid development of technology brings various changes in all aspects of life, one of which is the field of education. Technology can generally be interpreted as a facility and infrastructure that can help human survival and comfort. Along with its development, digital technology has experienced an expansion of meaning so that it can reach all aspects of life. Digital technology has strategic potential and opportunities to play a role and support the success of education and learning in the higher education (Borgen et al., 2021; Hills & Thomas, 2020). In addition, digital technology can also be a solution to provide a new learning experience outside the classroom and express a form of understanding that is centered on building meaning according to the student construction (Hills & Thomas, 2020; Shomirzayev, 2022).

The era of globalization shows the rapid development of information technology. Circumstances like this certainly cannot be avoided, more specifically, its influence on the world of education (Supena et al., 2020). The demands of modern times like today make all elements of education constantly adapt to the development of information technology. This is done to improve the quality of education, especially the adjustment of the use of information technology in learning in higher education. In a very dynamic situation like today, learning activities require innovation and creativity so that learning becomes more colorful (Baloran, 2020; Karademir et al., 2021). The development of information technology should not only be a reality of changing times but must be addressed as a strategic opportunity to encourage interesting learning for students.

Putrawangsa & Hasanah (2018) research shows that digital technology can improve conceptual understanding and develop intuition skills. In his research, it was also found that the didactic functions of digital technology in learning include (a) the function of technology as a support and alternative to learning media, (b) the function of technology as a learning environment in honing skills, and (c) the function of digital technology as a medium for developing understanding. Conceptual. This means that it is necessary to integrate digital technology into learning to prepare human resources who are ready to enter the era of a knowledge-based society. The challenge for lecturers in the current era is to have at least four competencies, including (a) knowing the use of digital and its application, (b) having leadership competencies that can direct students to have technological skills, (c) having the ability to predict the direction of changing times and strategies to deal with them, and (d) able to come up with ideas, innovation, and creativity (Nur et al., 2022).

This study aims to analyze the need for virtual reality development according to the characteristics of school students in preserving the existing culture. This is very necessary as early information in development. In addition, the results of this analysis have benefits in determining what treatment is appropriate in the learning process in improving the ability to understand the material and preserve certain cultures. In this study, the researchers limited it to the needs analysis stage because the analysis process is an important stage in designing a product whose results can be used as the basis for the product development process that meets the needs in the field. As for the problems in this study, what is the teacher's view on developing technology as a learning medium? What are the views of students on using technology as a learning medium?

### 1.1. Theoretical Framework

### *1.1.1. Model Pembelajaran Field Trip*

Field Trip is a teaching model that invites students to a certain place or object outside the school to study/investigate objects (Davies & Davies, 2021; Evelpidou et al., 2021). With the field trip method, students will be guided to compare what they theoretically learn in class with their practical use (Kiewra, 2021; Prasanti & El Karimah, 2021). The purpose of the field trip is to introduce students to the things being studied in a class by directly visiting the object being studied (Mikdar, 2021). Although field trips have many non-academic values, the general goals of education can be achieved, especially regarding insight and experience about the outside world (Sunday, 2021).

There are several advantages to the field trip model, namely (1) students can participate in various activities carried out by the tourism object officers and experience and live directly, (2) students can see the activities of the officers individually or in groups and live it directly, (3) students can ask questions and find the first source of information to solve all kinds of problems they face, and (4) students gain a variety of integrated knowledge and experience (Manurung, 2021).

### *1.1.2. Virtual Reality*

Virtual Reality is a technology that allows a person to perform a simulation of a real object using a computer that can evoke a three-dimensional (3D) atmosphere so that it makes the user feel as if he is physically involved (Bec et al., 2021; Xiong et al., 2021). Virtual reality environments generally provide a visual experience displayed on a computer screen or via a stereoscopic viewer, but some simulations include additional sensory information, such as sound through speakers or headphones (Sarkady et al., 2021).

Virtual reality is a technology that allows users or users to interact with the environment that exists in a virtual world that is simulated by a computer so that users feel they are in that environment (Hu et al., 2021). Users of virtual reality technology use devices such as glasses to view a three-dimensional stereoscope scene that allows us to look around by moving our heads and walking around using hand control or motion sensors. The user engages in an experience that seems to exist in a virtual world (Jang et al., 2021). In a system, there must be advantages and disadvantages, not least the system in Virtual Reality. The advantages of the Virtual Reality system are as follows: (1) it can be widely implemented in various media, (2) it can be used for entertainment, education, etc.

### *1.1.3. Cultural Literacy*

Cultural literacy is the ability to understand and behave toward Indonesian culture as a national identity. Cultural literacy is important to master in the 21<sup>st</sup>-century (Yusuf et al., 2020). Indonesia has various ethnic groups, languages, habits, customs, beliefs, and social strata. As part of the world, Indonesia is also involved in global development and change. Therefore, the ability to accept, adapt, and act wisely on diversity becomes absolute. Awareness of nationality is an important thing that every citizen must own. With love for the nation and country, each individual will act in accordance with applicable rules and uphold the dignity of the nation and country (Sharifah & Hamdu, 2022). These skills will give birth to a quality nation, which in the end, will be able to show its identity in the international world. The introduction, application, and improvement of cultural literacy skills must be carried out on an ongoing basis by involving all school members, families, and communities whose implementation is adjusted to the needs and socio-cultural conditions of the local community.

## *1.2. Relate Research*

As the spearhead in the implementation of teaching and learning activities, the teacher has an important role in the success of education. Teachers can use many learning methods to be able to

activate students in teaching and learning activities. One of the student-centered learning is a field trip. Field trips invite students to visit a place specified for learning. After making a visit, students can write down their experiences from observations during the visit. This process makes learning more fun and makes students more active in participating in the teaching and learning process Pengaruh Metode Field Trip Terhadap Keaktifan dan Hasil Belajar Bahasa Indonesia Siswa Kelas IV SD di Kecamatan Ngantru. In addition, the results of the study (Kiewra, 2021; Sunday, 2021) also show that field trip learning improves students' academics and introduces students to the surrounding environment. In addition, research results (15), show that there is a significant effect of the field trip method on TEK literacy (traditional ecological knowledge (TEK)).

Many studies on virtual reality have been carried out, and the use of virtual reality is proven to make it easier for teachers to deliver learning materials and the time used is more effective, efficient, and fun in introducing culture to students (Silaen et al., 2021). Learning Framework using virtual reality in learning has progressed rapidly. However, based on the research above, there is no specific research related to virtual reality to improve students' cultural literacy, so it is necessary to innovate scientifically in this research.

## **2. Method and Materials**

### *2.1. Research Model*

This research used a qualitative descriptive method focused on describing the results without manipulating data or other treatment (Chen & Kurniawan, 2022; Sari et al., 2020; Yudha et al., 2020). The qualitative descriptive method was used to describe the result of observation and questionnaires about the need analysis of the Virtual Reality Field Trip Model.

### *2.2. Participants*

This research was conducted in five cities in Jakarta Province, Indonesia, from July to Agustus 2022. The participants of this research were chosen by purposive sampling method. Purposive sampling is a sampling technique that assesses the sample among the selected population (Zulela et al., 2022). Participants of this research comprised 28 elementary school teachers in fifth grade with 5 to 15 years of teaching experience in primary schools (teacher age range less than 45 years) and 50 school students. The reason for choosing the research subjects is because they are considered teachers with much experience, and the selection of students represents the characteristics of each city of Jakarta.

### *2.3. Data Collection Tools*

The data were collected using observation, questionnaire form, and interviews. The questionnaire is a method of collecting data by asking a list of written questions (Braun et al., 2021). The interview is a data collection technique through an oral question-and-answer process in one direction (Barrett & Twycross, 2018; Sumilat et al., 2022). The research instruments, namely observations, questionnaire forms, and interviews were developed by the author. Before using the instrument, validity and reliability tests were carried out to determine the effectiveness of the instrument

### *2.4. Data Collection Process*

The questionnaire form is used to find information about suitable learning media to improve the cultural literacy of elementary school students. The questionnaire form is used to find information about suitable learning media to enhance the cultural literacy of elementary school students. The research data was obtained by distributing questionnaires to schools in the Jakarta area. Then to strengthen the results of the questionnaire data, interviews were carried out with several samples.

## 2.5. Data Analysis

Before being applied to the research, the research instrument used was tested for validity and reliability using Cronbach's Alpha. Cronbach's alpha is a statistic commonly quoted by authors to demonstrate that tests and scales that have been constructed or adapted for research projects are fit for purpose (Rusmiarti et al., 2022; Taber, 2018). The data result were analyzed using the Miles and Huberman data triangulation model. Activities in data analysis include data reduction, data presentation, data drawing conclusions, and verification (Miles et al., 2018). Miles and Huberman's Interactive Data Analysis Model is shown in Figure 1.

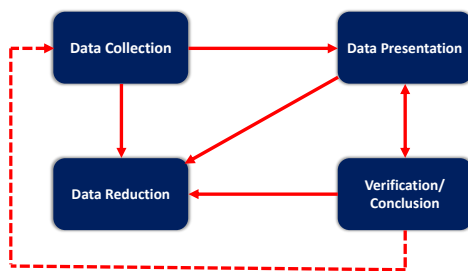


Figure 1. Data Analysis Model Miles and Huberman

## 3. Result and Discussion

### 3.1. Findings

Development research is based on needs in the field, the intended need is a form of a gap between the desired condition and the current real condition, so to overcome this gap, it is necessary to improve the quality of learning through needs analysis activities. Needs analysis in this study is an analysis of learning media needs to determine the technology required by students to improve the quality of learning. To produce a good learning media, it is necessary to analyze the needs at the beginning to collect information and analyze the needs of students and teachers. The collection of information needs is done by distributing questionnaires to respondents about the needs in the field.

#### 3.1.1. Awareness increases the teacher's pedagogic ability.

The validity test was carried out to test the validity of the questionnaire instrument used. Based on the output of the calculation of the validity of the questionnaire statement items, it is known that item 1 is  $0.412 > 0.361$ , meaning that the item is valid, item 2 is  $0.583 > 0.361$ , meaning that the item is valid, and item 3 is  $0.479 > 0.361$ , meaning that the item is valid, item 4 is  $0.532 > 0.3061$  meaning that the item is valid, item 5 is  $0.623 > 0.361$  meaning that the item is valid, item 6 is  $0.413 > 0.361$  meaning that the item is valid, item 7 is  $0.479 > 0.361$  meaning that the item is valid, item 8 is  $0.532 > 0.361$  meaning that the item is valid. item 9 is  $0.532 > 0.361$  meaning that the item is valid, item 10 is  $0.583 > 0.361$  meaning that the item is valid.

Item 11 is  $0.522 > 0.361$  meaning that the item is valid, item 12 is equal to item  $0.583 > 0.361$  meaning that the item is valid, item 13 is  $0.479 > 0.361$  meaning that the item is valid, item 14 is  $0.639 > 0.361$  meaning that the item is valid, item 15 is  $0.536 > 0.361$  meaning that the item is valid, item 16 is  $0.479 > 0.361$  means that the item is valid, item 17 is  $0.479 > 0.361$  meaning that the item is valid. item 18 is  $0.532 > 0.361$  meaning that the item is valid, item 19 is  $0.536 > 0.361$  meaning that the item is valid, item 20 is equal to  $0.532 > 0.361$  means that the item is valid, 21 is equal to  $0.433 > 0.361$  means that the item is valid, item 22 is equal to the item is  $0.522 > 0.361$  means that the item is valid,

item 23 is  $0.413 > 0.361$  meaning that the item is valid, item 24 is  $0.536 > 0.361$  meaning that the item is valid, item 5 is  $0.639 > 0.361$  meaning that the item is valid.

Table 1. Validity and Reliability Statistics result of teachers' need analysis questionnaire

Validity Statistics			
		N	%
Cases	Valid	25	100.0
	Excluded <sup>a</sup>	0	.0
	Total	25	100.0

a. Listwise deletion based on all variables in the procedure.

Reability Statistics	
Cronbach's Alpha	N of Items
.818	25

From table 1, it is known that there are 25 questions with a Cronbach's Alpha value of  $0.818 > 0.361$ . If in the basic analysis of decision-making in the reliability test above, it can be concluded that 25 questions or all question items are said to be reliable. The teacher needs an analysis table as shown in table 2.

Table 2. Teacher need analysis Indicators

Instrument Indicator	Characteristics	Question Points	Percentage
Knowledge on the use of learning media in technology	Have knowledge of the use of learning media in learning	1,2,3,4,5	66%
Perception of Pedagogic skills	Have a positive outlook to improve teaching skills	6,7,8,9,10	43%
Proficiency in using technology	Have a habit of using digital resources in daily life	11,12,13,14,15	54%
Motivation	Have an interest in the use of technology in learning	16,17,18,19,20	83%
Awareness to preserve culture	Have an interest in fostering cultural sustainability	21,22,22,23,24,25	58%

The desire to develop teachers' pedagogic skills was expressed by all respondents to use technology as an effort to improve pedagogics and design learning that supports student needs.

*In my opinion, the use of technology has a positive impact, especially in terms of improving the pedagogic abilities of teachers. As an example of using YouTube technology media, we can see good teaching methods and material in the form of learning videos that we can display so that students will be more interested and not bored with conventional teaching methods. (Teacher Interview, School A, February 1, 2022)*

*In addition, Hasna argues: "The benchmark for learning outcomes can be seen from changes in the cognitive, affective, and psychomotor domains of students. Therefore, the government must give freedom to teachers to design learning processes according to the characteristics of students..... I still really need to learn the use of technology in learning. (Teacher Interview, School G, February 14, 2022)*

*My opinion is that technology is a necessity for an "innovative school" because with the use of technology it is hoped that there will be an increase in the quality of learning/teaching, increased productivity/efficiency and access, an increase in positive learning attitudes, professional/staff development, and an increase in profile/introduction. (Teacher Interview, School G, February 14, 2022)*

Based on the results of the questionnaire analysis for the teacher. From the results of the analysis, teachers have knowledge of the use of learning media in technology as much as 66%, Perception of teaching skills 43%, Proficiency in using technology 54%, Motivation as much as 83%, and Awareness to preserve culture 58%.

### 3.1.2. The low awareness of students in preserving Betawi culture and the use of technology in learning

Analysis of student characteristics regarding knowledge of Betawi culture, perception of technology, skills in using technology, motivation, and potential for using technology in preserving culture. The substance using the Likert scale is a characteristic offered to students and is a choice of answers in the distributed questionnaire. Respondents were given paper leaflets, then chose the answer options provided and asked to describe briefly.

Based on the output of the calculation of the validity of the questionnaire statement items, it is known that the calculated  $r$  number for item 1 is  $0.411 > 0.325$ , meaning that the item is valid, and item 2 is equal to  $0.583 > 0.325$ , meaning that the item is valid, item 3 is  $0.674 > 0.325$ , meaning that the item is valid, item 4 is  $0.539 > 0.325$  meaning that the item is valid, item 5 is  $0.611 > 0.325$  meaning that the item is valid, item 6 is  $0.423 > 0.325$  meaning that the item is valid, item 7 is  $0.442 > 0.325$  it means that the item is valid, item 8 is  $0.457 > 0.325$  meaning that the item is valid, item 9 is  $0.517 > 0.325$  meaning that the item is valid.

Item 10 is  $0.527 > 0.325$  meaning that the item is valid, item 11 is  $0.523 > 0.325$  means that the item is valid, item 12 is equal to the item is  $0.539 > 0.325$  means that the item is valid, item m 13 is  $0.457 > 0.325$  meaning that the item is valid, item 14 is  $0.583 > 0.325$  meaning that the item is valid, item 15 is  $0.677 > 0.325$  meaning that the item is valid, item 16 is  $0.563 > 0.325$  meaning that the item valid, item 17 is  $0.679 > 0.325$  meaning that the item is valid, item 18 is  $0.539 > 0.325$  meaning that the item is valid, item 19 is  $0.592 > 0.329$  meaning that the item is valid, item 20 is  $0.583 > 0.325$  meaning that the item is valid.

Table 3. Validity and Reliability Statistics result of students' need analysis questionnaire

Validity Statistics			
		N	%
Cases	Valid	20	100.0
	Excluded <sup>a</sup>	0	.0
	Total	20	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics	
Cronbach's Alpha	N of Items
.803	20

From table 3, it is known that there are 25 questions with a Cronbach's Alpha value of  $0.803 > 0.325$ . If in the basic analysis of decision-making in the reliability test above, it can be concluded that 20 questions or all question items are said to be reliable.

The results of the needs analysis of students in detail can be seen in the following table 4.

Table 4. Students need analysis indicators

Indicator	Characteristics	Question Points	Percentage
Knowledge of Betawi Culture	Have knowledge of the awareness of preserving Betawi culture	1,2,3,4	29%

Perception of technology	Have a positive view of technology in learning	5,6,7,8	33%
Proficiency in using technology	Have a habit of using digital resources in daily life	9,10,11,12	30%
Motivation	Have an interest in the use of technology in learning	13,14,15	64%
Potential in using technology to preserve culture	Have an interest in technology to foster cultural literacy, especially Betawi culture	16,17,18,19,20	76%

The low awareness of students in preserving Betawi culture is a special concern that must be given to students.

*I prefer mall venues to cultural shows. I prefer comic books to reading stories about culture. Betawi culture that I know is like ondel-ondel, hmmm what else? (Students show looking confused) (Student Interview, School B, February 3, 2022)*

*I rarely go to the library, ma'am. I only use my cellphone to play online games, ma'am. (Student Interview, School G, February 14, 2022)*

*My opinion is technology is a necessity. However, I rarely use the internet to read about Betawi culture, preferring to play online games (Student Interview, School A, February 1, 2022)*

Based on the results of the questionnaire analysis of students. From the results of the analysis, knowledge of Betawi Culture is 29%, Perception of technology is 33%, Ability to use technology is 30%, Motivation is 64%, and Potential in using technology to preserve culture is 76%. Based on the results of the questionnaire analysis and interviews, it was found that there were low indications of students preserving Betawi culture and using technology to broaden their horizons and support learning.

### 3.1.3. Virtual Reality as a learning technology facility needed to give students awareness of preserving culture

Analysis of content sources, availability of technology, and learning facilities was carried out using a questionnaire. Based on the output of the calculation of the validity of the questionnaire statement items, it is known that the calculated  $r$  number for item 1 is  $0.417 > 0.325$ , meaning that the item is valid, item 2 is equal to  $0.514 > 0.325$ , meaning that the item is valid, item 3 is  $0.524 > 0.325$ , meaning that the item is valid, item 4 is  $0.447 > 0.325$  meaning that the item is valid, item 5 is  $0.415 > 0.325$  meaning that the item is valid, item 6 is  $0.423 > 0.325$  meaning that the item is valid, item 7 is  $0.415 > 0.325$  it means that the item is valid.

Item 8 is  $0.457 > 0.325$  meaning that the item is valid, item 9 is  $0.517 > 0.325$  meaning that the item is valid, item 10 is  $0.527 > 0.325$  meaning that the item is valid, item 11 is  $0.525 > 0.325$  means that the item is valid, item 12 is equal to the item is  $0.539 > 0.325$  means that the item is valid, item m 13 is  $0.614 .> 0.325$  meaning that the item is valid, item 14 is  $0.583 > 0.325$  meaning that the item is valid, item 15 is  $0.677 > 0.325$  meaning that the item is valid.

Table 5. Validity and Reliability Statistics result of learning media need analysis questionnaire

Validity Statistics			
		N	%
Cases	Valid	15	100.0
	Excluded <sup>a</sup>	0	.0
	Total	15	100.0
Reliability Statistics			

a. Listwise deletion based on all variables in the procedure.



Cronbach's Alpha	N of Items
.803	15

From table 5, it is known that there are 15 questions with a Cronbach's Alpha value of 0.803 > 0.325. If in the basic analysis of decision-making in the reliability test above, it can be concluded that 15 questions or all question items are said to be reliable.

Respondents were given a questionnaire, then chose the answer options provided. The results of the needs analysis for students in detail can be seen in table 6.

Table 6. Learning media need analysis indicators

Indicator	Characteristics	Question Points	Percentage
Content Source	Substance of cultural content available in books, and sources related to the material	1,2,3	88%
Technology Availability	Students have laptops/gadgets that can support the use of electronic teaching materials	4,5,6,	77%
Technology Understanding	Students have an understanding of the use of digital technology in learning	7,8,9,10,11,12,13,14,15	44%

The results of interviews with students require learning technology using 3D so that students feel they are visiting a place to learn about Betawi Culture.

*How to hold a market day with the theme of Betawi culture, exhibitions, pictures, ma'am. But again, Covid is not able to go to cultural places freely, ma'am (Student Interview, School G, February 14, 2022)*

*Oh, you know, ma'am, you mean virtual reality wearing 3-dimensional glasses like on the Ancol and Jatipark rides, right, ma'am? (Students seem to explain the meaning of virtual reality). We can feel what happened, it's really fun if it's used in learning. I feel like walking in a cultural museum in Jakarta dong bu (Student Interview, School C, February 10, 2022)*

*Wow, 3D glasses are fun, ma'am. Can you wear these glasses while studying in class? I've never used it to study, but that's okay. (Student Interview, School A, February 1, 2022)*

Resource analysis is done by distributing questionnaires to respondents. From the results of the analysis, it is known that as many as 88% of students want the substance of the content in books, and sources that are related to learning materials, 77% of students have laptops/gadgets that can support the use of electronic teaching materials, and 44% of students have an understanding of the use of digital technology in learning. Based on the results of the questionnaire analysis and interviews revealed that students have an interest in using virtual reality as a technology to broaden their horizons and support learning.

### 3.2. Discussion

In the context of developing a product, needs analysis is a very important part and step. As explained by Branch & Robert that in development research it is necessary, to begin with, a step where the researcher conducts a needs analysis before product development activities is carried out, so that the product to be developed departs from the data from the interpretation of the needs analysis carried out at the beginning (Branch, 2009; Sumantri et al., 2022). This activity is often interpreted as an initial research activity before researchers determine the type of product to be

developed. This means that needs analysis is an activity to collect information in an effort to make a priority decision, and to identify needs that are relevant to learning.

Based on the results of the analysis, shows that students are more likely to have an interest in 3D animation that can support learning, one of which is virtual reality. The technology developed refers to the development of learning media, students think that virtual reality will make the learning process easier and more fun (Emmelkamp & Meyerbröker, 2021; Xiong et al., 2021). The innovatively developed technology can encourage effective and independent learning and help students acquire the skills needed for the learning (Setiawan et al., 2017; Wilson, 2018; Xie et al., 2021). In this needs analysis, information was also obtained that students hoped that technology could facilitate the learning process and be fun. In addition, learning with the help of virtual reality can add to the student's learning experience (lasha et al., 2020; Makransky & Petersen, 2021; Roskvist et al., 2020). The development of learning needs should pay attention to the characteristics of students from various aspects such as the development of their potential, intellectual intelligence, and psychology (Rachmatullah et al., 2020).

The enthusiasm of students in using digital devices such as laptops and gadgets strongly supports the development of virtual reality learning media. With virtual reality, students have no difficulty in concretizing knowledge and learning it, because the availability of the devices they have can display the material in an interesting way. Virtual Reality can also support the learning process, so that it can meet the needs and develop the learning process with technology, the delivery of material will be more meaningful for students if the material is equipped with learning activities that students can do to build an independent experience even though they are not facing to face.

#### 4. Conclusion

Analysis of virtual reality needs in this study includes analysis of teacher and student characteristics, analysis of facilities and infrastructure, and analysis of knowledge about preserving culture. Analysis of the characteristics of teachers having knowledge on the use of learning media in technology as much as 66%, Perception of teaching skills 43%, Proficiency in using technology 54%, Motivation as much as 83%, and Awareness to preserve culture 58%. Then the results of the analysis of student characteristics, knowledge of Betawi Culture as much as 29%, Perception of technology 33%, Skills in using technology 30%, Motivation as much as 64%, and Potential in using technology in preserving culture 76%, as many as 88% of students want content substance in books, and sources related to learning materials, 77% of students have laptops/gadgets that can support the use of electronic teaching materials, and 44% of students have an understanding of the use of digital technology in learning.

Overall based on the data from the analysis of development needs; 1) Awareness increases the teacher's pedagogic ability. 2) Low awareness of students in preserving Betawi culture and the use of technology in learning, 3) Virtual Reality as a learning technology facility needed to provide students with an awareness of preserving culture. Students have a tendency to be interested in virtual reality because it is flexible and contains detailed material, both theoretical and material that supports simulation practice so that it can help understand the material and can feel involved in a visit activity. In addition, the limitation of this research used small scope for the sample (only in the Jakarta Province). Then, suggestions for future research are to expand the scope of the sample in order to obtain more accurate data. On the other hand, this research also contributes to providing knowledge on an international level about the development of appropriate learning media in introducing culture to elementary school students.

#### 5. Recommendation

Some recommendations that need to be considered for further research are to develop an interactive learning media that can improve the cultural literacy of elementary school students, namely virtual reality which provides the experience of exploring culture even in the classroom.

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