Needs Analysis of Digital-Based History Learning Resources in Senior High School

by Syarifuddin Syarifuddin

Needs Analysis of Digital-Based History Learning Resources in Senior High School

Siti Swasti Eka D[1], Syarifuddin[2], Santi Oktarina[3*]

[1] Sriwijaya University; Indonesia; sitiswastieka31@gmail.com
[2] Sriwijaya University; Indonesia; syarifuddin@fkip.unsri.ac.id
[3] Sriwijaya University; Indonesia; santioktarina@fkip.unsri.ac.id

ARTICLE INFO

ABSTRACT

Contextualization of history learning can be done by utilizing the environment and phenomena, namely by using historical learning resources in the environment, one of which is a museum. However, the problem is that distance and time are not possible if the teacher takes the students to the museum location. An alternative solution for this learning period is the development of digital learning resources in the form of virtual museum tours for historical subjects. Before developing these learning resources, it is necessary to conduct an introduction to the main research on the development of historical learning resources. The purpose of this study was to determine the analysis of the needs and effectiveness of the Sriwijaya museum virtual tour as a digital history learning resource on learning outcomes in class X at a state senior high school in Palembang. The research method used is the mixed method with a qualitative approach and Classroom Action Research. The results of this study indicate that 71.8% of students are interested in simulating a visit to the Sriwijaya virtual museum via smartphones and that 100% of teachers need interactive learning resources and proven effectiveness in improving student learning outcomes to get an N-gain of 0.57 in the medium category.

Corresponding authors:
Santi Oktarina
Sriwijaya University; Indonesia; santioktarina@fkip.unsri.ac.id

1.   INTRODUCTION

The new paradigm of the 2013 curriculum on history learning is contextual history learning. Contextual defence is learning by connecting learning materials with what is happening in one's life so that the material learned will be closely embedded and not easily forgotten (Wibowo et al., 2020). History learning can be contextualisedby utilizing the environment and phenomena by using historical learning resources in the environment (Andarwati, 2019). One of the environmental learning resources for history is a museum. The role of museums is to help ordinary people

understand information and context through brief interactions (Kersten et al., 2017). Museum visits are also a means of learning that arouse curiosity and provide a different nuance of learning. But today's problem, there are some drawbacks to the visit method. These drawbacks are: 1) Limited time. A museum visit with unplanned time management will interfere with other learning activities. 2). The second requires additional costs, labour, and responsibility (Wibowo et al., 2020).

Based on the weaknesses above, one of the efforts to overcome them is to use digital-based learning resources. Digital learning resources are understood as a combination of hardware and software that has the potential to overcome learning problems and facilitate learning activities. Learning resources can be developed to support innovative and modern technology-based learning processes, one of which is a virtual museum tour. The virtual tour is considered the next big step in technological innovation. In addition, virtual tours provide users with a teaching and aesthetic experience. Virtual tours have been considered a very effective way to get fun and in-depth information about museum collections (Jung et al., 2016). Virtual tours to historical sites such as caves, monuments and museums can be created (Syarifuddin et al., 2017). The virtual tour designed at this museum has another name, namely the Virtual Tour Museum. The virtual tour museum allows virtual visitors to observe objects from all angles.

In addition, the virtual tour museum can provide a reflective learning experience in the context of cultural heritage. Virtual museum tours are recognized as a valuable tool for museums (Lee et al., 2020). The panorama of the exhibition hall serves as an interface to access the featured objects chosen by students. Clicking the hot spot above the museum view of the featured object causes the object to inform. The user can interact with the panorama by dragging the mouse in the selected direction. The panorama scrolls in the selected direction, creating the sensation of viewing the image from all sides (Christa & Roy, 2002). The virtual tour features are very helpful for learners in understanding knowledge, one of which is information. The information menu presents writing in the form of information related to objects in the museum. This aims to ensure that students not only see or observe an object but also understand the meaning, function, or benefit of the collection. The collections in the museum, such as the relics, are in the form of stone statues, artefacts, and inscriptions (Poesponegoro & Notosusanto, 2010).

Some researchers have conducted research on the virtual tour museum in history learning. Syarifuddin (2017) studied the development of virtual museum-based hybrid learning materials in the Indonesian national history course at Sriwijaya University. The result of this research is that the virtual museum developed must be valid, practical and effective to improve student learning outcomes. The virtual museum uses Unity 3D and Blender (Syarifuddin et al., 2017). Using virtual history education has also been investigated in research entitled "Virtual Reality-Based Explorer Education Game," which aims to develop an educational game application "Explorer" Introduction of Virtual Reality-Based Pre-Historic Objects to help students recognize and study prehistoric objects found in the museum room. The test results to determine student responses and students after using the educational game "Explorer" were carried out using a questionnaire method and had an average percentage of 91.81%, which means that the application is in a good category. In addition, pretest and posttest tests were also carried out and obtained an N-Gain score of 0.8, which entered the high criteria (Khoerniawan et al., 2018). A virtual tour museum application for West Kalimantan Province for History Education has been designed by (Harianto et al., 2018).

One of the important topics of discussion in history learning is relics as evidence of the Sriwijaya Kingdom. The Srivijaya Kingdom is the oldest kingdom in Sumatra, entering its position in the 7th century AD, which produced several cultural objects with a Hindu-Buddhist background. The thing that distinguishes this research from previous research is that this research will be conducted on historical subjects of the Sriwijaya kingdom and not only focus on the responses and interests of students but also see the effectiveness of the use of virtual tour museums.

Based on observations made at a state senior high school in Palembang along with interviews with a teacher, there are several reasons to make schools objects and places of research. First, this

school is a school that has implemented K13. In terms of educational infrastructure, this school is quite adequate. However, the history teacher at this school has never used learning resources using the virtual tour museum. Within a 5 km radius of the school, no inscriptions characterize the legacy of the Sriwijaya Kingdom. The closest distance to the Sriwijaya Kingdom inscription from this school is around 10 km relatively long distance. Based on the research above, it is necessary to develop digital learning resources such as the virtual tour of the Sriwijaya museum, considering that students who study are millennials who cannot be separated from digital. Based on the background, these problems can be formulated, namely how to analyze the need for the virtual tour as a source of digital-based history learning, and how effective the virtual tour museum Sriwijaya in learning the history of the Sriwijaya Kingdom material for class X Social Studies.

2. METHOD

This research method uses a mixed method to collect and analyze data, integrate findings, and draw conclusions using qualitative and quantitative approaches or methods in a study or investigation program. This study uses a qualitative approach and Classroom Action Research. A qualitative approach to explain the needs analysis of application usage. Meanwhile, Classroom Action Research is used to test the effectiveness of using digital learning resources for the Sriwijaya museum virtual tour. This research was conducted at SMA Negeri 7 Palembang. Research subjects at the needs analysis stage with 1 teacher of history subject class X, and 4 history teachers at SMA N 7 Palembang, as well as analysis of student characteristics on 39 students who were randomly selected from 8 class X at SMA Negeri 7 Palembang and Effectiveness Virtual The Tour Museum was evaluated from the results of product trials conducted by 30 students of class X IPS 2 at SMA Negeri 7 Palembang who were involved in learning historical subjects as evidence of the Sriwijaya kingdom's heritage. Rare in data condensation research, data presentation, and conclusion drawing. Data collection techniques used in the analysis of learning resource needs analysis of virtual museum tours are interviews and questionnaires in the form of Google forms.

3. FINDINGS AND DISCUSSION

At the needs analysis stage, the researchers distributed questionnaires and interviews with history teachers to identify the scope of research, analyse the teaching of history subjects, analyse students, and then identify facilities and infrastructure. The following is an explanation of each: Identifying the Scope of Research: This research can solve students' learning problems at SMA Negeri 7 Palembang, especially in history. From the questionnaire results, 64.1% of students stated that it was difficult to understand history lessons, especially in the evidence of material from the Sriwijaya kingdom. This is in accordance with the results of an interview with a class X history teacher, Mrs Rumiati, who stated that quite a number of students did not pass the KKM because in the history learning materials, there were abstract concepts, especially for evidence of non-existent historical heritage materials, through printed learning resources and the limitations of visiting the museum because it takes time and money, so they can create visualizations by developing a virtual tour of the museum, which is valid, practical, and effective. Material evidence of the legacy of the Srivijaya kingdom is contained in basic competencies. 3.6. Analyzing the characteristics of people's life, government, and culture during the kingdoms in Indonesia and showing examples of evidence that is still valid in the life of Indonesian society today. Based on these basic competencies, the indicators of competency achievement are as follows:

3.6.1 Identifying royal heritage Sriwijaya
3.6.2 Explaining the legacy of the kingdom Sriwijaya

Needs Analysis of History teachers first identified the scope of the research, then identified the scope of the tenth-grade history teacher. Through a survey with 3 history teachers and interviews with Mrs RM as the history manager for class X, the researchers obtained some information that supports the selection of products and materials to be developed. Some findings from the analysis of scope identification are as follows:

Table 1 Analysis of Teacher Needs for History Subjects

Percentage	of Data Results in
66.7%	Teachers need digital learning resources
66.7%	Teachers need learning resources that have audiovisual elements
33.3%	Teachers need learning resources which have Audio elements
66.7%	Teachers need learning resources that have 3D objects
66.7%	Teachers need learning resources that can be used with a kinesthetic learning style
100%	Teachers need interactive learning resources

Based on the analysis above, teachers need the right solution in the form of learning resources and digital media that has audiovisual elements, 3D objects, can be used with kinesthetic learning styles, and interactive learning resources. The learning resources needed must be in accordance with the needs and characteristics of students in order to help students improve learning outcomes. This strongly supports the development of a virtual museum tour as a valid, practical, and effective digital history learning resource to improve student learning outcomes.

Furthermore, from the analysis of the scope of the facilities and infrastructure that has been carried out, the researcher carries out the next rare task, namely identifying the characteristics of students. Based on the identification of student characteristics, it was carried out using Google Forms selected Class X students randomly. The results of the analysis of student identification can be seen in Table 2 below:

Table 2. Identification of Student Characteristics

Percentage of Data Results	
3 0.8%	Students enjoy learning with audio.
33.3%	Students like to learn with visuals
35.9%	Students like to learn with Audiovisuals
79.5%	Students like kinesthetic learning
69.2%	Students need to display 3D objects
79.5%	Students like learning resources digital-based
64.1%	Students need learning resources to improve learning outcomes in KD 3.6 regarding evidence of the Sriwijaya kingdom heritage
71.8%	Students want to learn by simulating a direct tour of objects with digital learning resources.
100%	of students have smartphones

Identification of the needs analysis and characteristics described above in 15% of the number of randomly selected class X students shows that students are interested in learning that involves elements of sound, images, video, and technology. Students have diverse learning styles, but 35.9% of students prefer audio-visual learners, where audio-visual includes sound and video image elements. Exploration with audio-visual can provide concrete experiences through visualization with the aim of

introducing and clarifying abstract concepts and encouraging the emergence of more advanced learning activities.

Google formed at the fourth point, which proves that 69.2% of students need learning resources that display 3D objects to study material evidence of the historical heritage of the Sriwijaya kingdom. The learning process at SMA Negeri 7 Palembang is quite good. Only the lack of learning with digital resources makes students less interested and makes it difficult to learn. This aspect is also sustainable with the fifth point: 79.5% of students like digital-based learning resources.

The data from the analysis of needs and further characteristics show that there are 7.1% of students want to take a simulation tour directly to historical objects. Then 79.5% of students like to learn with kinesthetic elements of movement, and 100% of students have smartphones. This is in accordance with the need for virtual simulations using digital learning resources in the form of a Virtual Tour Museum on smartphones or laptops that are usually mobile and can be used daily, especially to study evidence of material from the Sriwijaya kingdom. Therefore, learning resources that can be used on smartphones and can be accessed anywhere and anytime are the needs of students. So it can be concluded that digital learning resources are needed in the form of a virtual tour of the Sriwijaya museum with evidence of material from the Sriwijaya kingdom that can provide a simulation of visiting a historical object, and there are elements of audio, images, videos, and 3D objects so that student learning outcomes can continue to be achieved or even increase by the learning objectives that have been designed.

After identifying the characteristics of the students, the researchers then identified the scope of facilities and infrastructure. A survey through google forms stated that 66.7% of students thought that the computer laboratory facilities at school were adequate, then 64.1% of students stated that an internet connection (wifi). The results of the analysis of facilities and infrastructure can be seen in table 3.

**Table 3** Analysis of Facilities and Infrastructure of SMA Negeri 7 Palembang

No.	Facilities and Infrastructure	Available/No	Information
1.	Computer Laboratory	There are	40 Computers
2.	Internet connection (wifi)	Yes	Connected
4.	smartphone	Yes	Each student
5.	LCD	Available	Can be used in the learning process

Based on the results of the analysis of facilities and infrastructure in the school, researchers found several learning resources to support learning, such as a computer laboratory, where the computer laboratory serves as a place to develop skills in the field of information and communication technology. In addition, the internet connection (wifi) is well-connected. As for other supporting facilities, such as LCD supporting devices in the learning process. In addition to adequate facilities and infrastructure, the school allows students to bring smartphones. This strongly supports the development and use of the Virtual Tour Museum, which is evidence of material from the Sriwijaya Palembang kingdom heritage.

Furthermore, the researchers conducted a field test with 30 students of class X IPS 2 at this school. At the first meeting, students were given pretest questions. Data recapitulation of pretest student.

Table 4 Recapitulation Pretest of Student

| Interval Score	Number of Participants	Percentage	Predicate
86 – 100	0 Participants	0 %	Very Good
71 – 85	0 Participants	0 %	Good
56 – 70	1 Participant	3.34 %	Enough
40 – 55	13 Participants	43.33%	Less
0 – 39	16 Participants	53.33%	Very less
Total	30 participants	100 %	
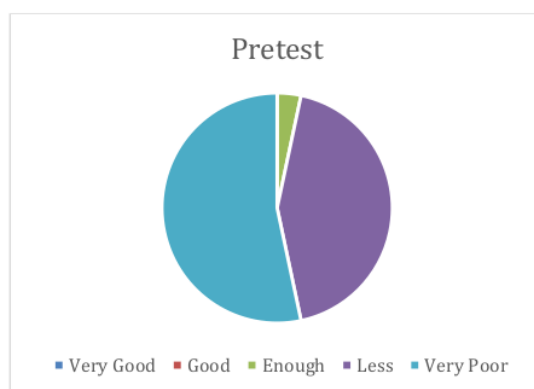
Graph 4.1 Results in Pretest of Student

Based on the data above, there are still many students who do not understand the material evidence of the inheritance Sriwijaya kingdom so a stimulus is needed to carry out learning by using Virtual Tour Museum to improve understanding which will have an impact on increasing the knowledge and skills competence of students towards evidence material from the Sriwijaya kingdom.

After the pretest was carried out, the researcher then conducted a posttest given to students after completing the lesson with digital learning resources, the Sriwijaya museum virtual tour. Implementation posttest using pretest that has been randomized as many as 20 questions. The recapitulation of the post-test can be seen in Table 5 as follows.

Table 5 Recapitulation of Student Posttest Results Interval Score

Total	Participants	Percentage	Predicate
86 – 100	2 Participants	6,66 %	Very Good
71 – 85	16 Participants	53,34 %	Good
56 – 70	12 Participants	40%	Enough
40 – 55	0 Participants	0 %	Less
0 – 39	0 Participants	0 %	Very Poor
Total	30 participants	100 %	
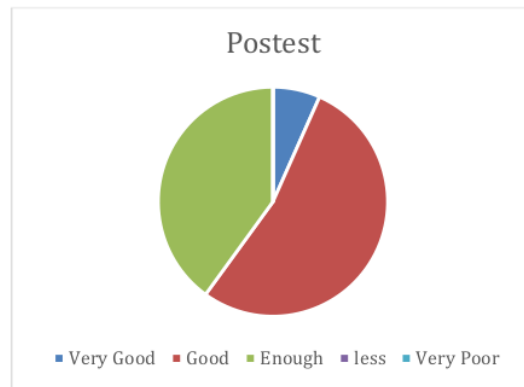
Graph 2 Results Posttest of Student

Data posttest above showed an increase in learning outcomes using Museum Virtual Tour Sriwijayacomparison between the pretest and posttest could be seen in graph 3.
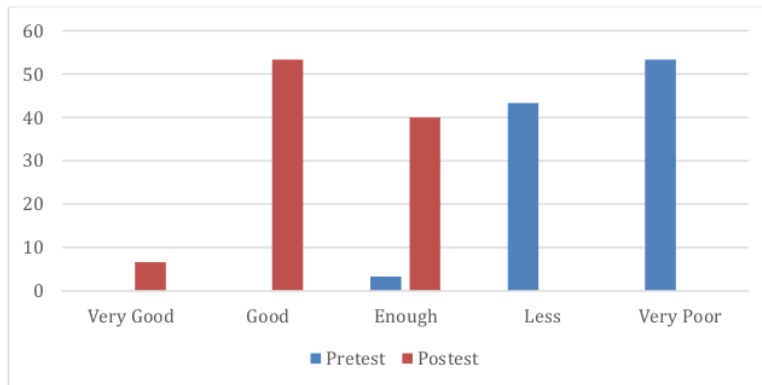
Graph 3 Results of Pretest and Posttest

The graph above shows a summary comparison of the pre-test and post-test. Showing pre-test activities before using Museum Virtual Tour Sriwijaya post-test student learning outcomes after using the Museum Virtual Tour. The comparison table for the recapitulation of pretest and posttest scores:

Table 6. Recapitulation of the Pretest and Posttest Comparison

No. Student Order	Initials Name of Student	Score Pre-Test	Category	Score Post-Test	Category
1	APF	45	Not Completed	80	Completed
2	AS	55	Not Complete	90	Completed
3	AZP	35	No Completed	70	Completed
4	AA	45	Completed	80	Completed
5	A	35	Uncompleted	75	Completed
6	DM	35	Not Completed	75	Completed

No. Student Order	Initials Name of Student	Score Pre-Test	Category	Score Post-Test	Category
7	DF	65	Completed	85	Completed
8	DA	40	Uncompleted	75	Completed
9	F	30	Not Completed	70	Completed
10	FW	35	Uncompleted	70	Completed
11	GJ	30	Not Completed	65	Completed
12	HPD	45	Not Completed	75	Completed
13	JA	35	Not Completed	70	Completed
14	MFN	40	Not Completed	75	Completed
15	MAN	50	Not Completed	80	Completed
16	MRR	50	Not Completed	80	Completed
17	MNS	35	Not Completed	70	Completed
18	NAP	35	Not Completed	65	Completed
19	NM	35	Completed	75	Completed
20	NA	40	Not Completed	75	Completed
21	NRF	35	Not Completed	70	Completed
22	PA	35	Uncompleted	75	Completed
23	RAN	30	Not Completed	70	Completed
24	RRF	30	Not Completed	70	Completed
25	RA	50	Not Completed	80	Completed
26	SF	40	Not Completed	75	Completed
27	SRM	30	Not Completed	65	Completed
28	TPJ	50	Not Completed	80	Completed
29	YES	35	Not Completed	70	Completed
30	ZAL	55	Not Completed	90	Completed
Total		1205		2245	
Average		40.16		74.83	

Based on the table above shows the average value achieved by students before using the museum virtual tour in learning is 40.16 in the low category, while the post-test after using the Sriwijaya museum virtual tour in history learning are 74.83 with the high category when compared to the average value of the pre-test , which is 40.16, with the average value of the posttest, which is 74.83, there is an increase of 34.67. This proves that the Sriwijaya museum virtual tour is effective in student learning outcomes.

Assessment of effectiveness was measured using N-Gain based on the average value of the pretest and posttest as follows.

$$N\ Gain\ = \frac{74.83 - 40.16}{100 - 40.16}$$

$$N\ Gain\ = \frac{34.67}{59.84}$$

$$N\ Gain\ = \ 0.57\ (Medium)$$

The results of the N-Gain 0.57 medium category indicate that the use Museum Virtual Tour material evidence of the legacy of the Sriwijaya kingdom has a good effect on student learning outcomes. A significant increase in the effect of the use of Virtual Tour Museum Sriwijaya in the learning process. Based on the student response questionnaire to the use of Museum Virtual Tour, they got a good response because it can be used according to their wishes, the material is easy to understand, and there are additional explanatory videos so as to increase knowledge, but there are still shortcomings such as internet connection which sometimes becomes an obstacle to accessing the website due to unstable network.

The initial stages carried out by the researchers were analyzing the needs of history education teachers and students' characteristics and the materials and infrastructure used in the study. Analysis of needs from the scope of the material, analysis of the needs of history teachers, analysis of student characteristics and identification of infrastructure so that it can be concluded that there is a need for digital learning resources in the form of a virtual tour of the Sriwijaya museum with material evidence of the Sriwijaya kingdom's heritage which can provide a simulation of visiting a historical object. There are audio elements, images, videos, and 3D objects that are in accordance with the needs and characteristics of students so that they can assist students in improving learning outcomes in accordance with the learning objectives that have been designed.

In the process of collecting data regarding the analysis of the needs and characteristics of students, researchers used a questionnaire distributed via a google form to determine the needs of teachers and the characteristics of students in the learning process so as to be able to develop digital learning resources according to the needs and character of students. In accordance with the statement that the use of internet technology in learning needs to be developed as one of the new innovations in the use of digital learning resources (Syarifuddin, 2014).

The researcher carried out the next stage, namely conducting (a field test) carried out with the aim of knowing the effectiveness of the Museum Virtual tour that had been developed. The results of the field test were conducted on 30 students of Class X IPS 2. Effectiveness can be known by giving students pretest and posttest during field trials. Based on the results of the field test, the pretest was 53.33% in the very poor category. After that, participants were given Museum Virtual tour so there was an increase in the posttest of 53.34% in the good category. This increase proves that there is an increase in learning outcomes before and after learning using the Museum Virtual tour Sriwijaya. Improved learning outcomes after the Museum Virtual tour Sriwijaya proved effective in improving student learning outcomes with an N-Gain of 0.57. The results of N-gain are then categorized based on Hake (2002), namely there are three categories if N-gain> 0.7 the category is high; if 0.3 N-gain 0.7

medium category; if N-gain< 0.3, the low category. Then the results of N-gain are in the medium category.

The magnitude of the increase in the value of learning outcomes obtained by students shows that virtual museum tours potentially impact students in learning the history of evidence material from the Sriwijaya kingdom. Students' potential will develop towards good and optimal historical learning goals if they are directed and have the opportunity to experience learning independently. This is in line with the benefits of digital learning resources, namely the opportunity to study independently and reduce dependence on the presence of teachers, as well as gain convenience in learning any knowledge that must be mastered (Yunarto et al., 2021). An increase in learning outcomes after applying the Sriwijaya museum virtual tour digital learning resources that are valid, practical and effective for students in accordance with the opinion that the digital learning environment is a contemporary learning and learning need. The use of technology in education makes learning activities more effective and efficient so that they can attract interest in learning (Lingga Purwodani et al., 2018).

Researches about using interactive multimedia technology in learning through interactive multimedia technology facilities are more efficient and effective in the education system. Researchers developed a museum virtual tour that aims to greatly influence teaching and learning needs and activities and make learning more interesting for students to motivate students to improve learning outcomes. Aligned with the 2013 curriculum policy, it has emphasized learning that is directed towards the actual abilities of students, based on student performance, can motivate learning and emphasizes activities and learning experiences of students (Hartono et al., 2022).

Museum virtual tour as a digital historical learning resource developed by researchers has a good impact on learning outcomes, and this can be seen from the increasing ability of students at the end of the learning process. The success of learning using a virtual tour museum is supported by the characteristics of the Virtual Tour Museum, which are made as a whole to help achieve the expected learning goals. Digital learning resources based on virtual tours have characteristics including interactive learning resources used independently in learning activities; secondly, they have complete features, 3D video objects, images, sound and text in learning resources. Last is a virtual learning resource for the Sriwijaya museum tour. This can be used practically with easy access anywhere and anytime online.

Using digital learning resources based on Virtual Tour Museum in the learning process can be an alternative for teachers to carry out learning with the method of visiting a historical learning resource. This statement is in accordance with the results of the field test, where as many as 30 students in this study increased learning outcomes. This phenomenon can be seen from the results of the posttest given.

4. CONCLUSION

It can be concluded that a state senior high school in Palembang needs innovation of digital learning resources in the form of a virtual tour of the Sriwijaya museum with material evidence of royal heritage Sriwijaya based on a needs analysis of the scope of the material, an analysis of the needs of history teachers, an analysis of student characteristics, and the identification of infrastructure facilities. To better achieve the intended learning goals, it can simulate what it would be like to visit a historical site and includes voice, image, video, and 3D items that can be tailored to students' individual needs and characteristics. Pre- and post-test results demonstrate that students' competency levels are elevated due to using Virtual Tour Sriwijaya. The N-gain number in the medium range, 0.57, reflects the fact that the pre-test value is heavily concentrated in the very poor category while the post-test value is heavily concentrated in the good category. Because the Museum Virtual Tour is only accessible through an online connection, this becomes a problem for students who do not have constant access to the internet, which is one of the study's limits because it is the exclusive method of examining the demands. The virtual museum tour does not typically incorporate collaborative or

group-based learning. In terms of future research, it is hoped that the Sriwijaya Museum Virtual Tour may be improved by employing high-quality technologies like Virtual Reality, and that it can serve as a model for establishing digital virtual tour learning tools at other, more comprehensive museums in Indonesia.

REFERENCES

Andarwati, M. (2019). Pembelajaran Sejarah Kontekstual, Kreatif, Dan Menyenangkan di Kelas Dengan "Power Director" untuk Generasi Z. Jurnal Pendidikan Sejarah Indonesia, 2(1), 64–81. https://doi.org/10.17977/um033v2i12019p064

Harianto, Negara, ABP, & Safriadi, N. (2018). Rancang bangun aplikasi virtual tour museum provinsi kalimantan barat untuk edukasi sejarah. Informatics UNTAN, 1–6.

Hartono, H., Indra Putri, RI, Inderawati, R., & Ariska, M. (2022). The strategy of Science Learning in Curriculum 2013 to Increase the Value of Science's Program for International Student Assessment (PISA). Jurnal Penelitian Pendidikan IPA, 8(1), 79–85. https://doi.org/10.29303/jppipa.v8i1.1185

Christa, M., & Roy, L. (2002). Digital Repatriation: Constructing a Culturally Responsive Virtual Museum Tour. Journal of Library and Information Science, 28(1), 14–18. https://doaj.org/article/8ca5c1243802447a8d6f860235be1870

Jung, T., Claudia, M., Lee, H., Chung, N., Jung, T., Claudia, M., Lee, H., & Chung, N. (2016). This is the authors ' final version published in Information and Communication Technologies in Tourism 2016 The original publication is available at : Effects of Virtual Reality and Augmented Reality on Visitor Experiences in Museum Department of Food and. Information and Communication Technologies in Tourism 2016, 621–635. https://doi.org/10.1007/978-3-319-28231-2-45

Kersten, TP, Tschirschwitz, F., & Deggim, S. (2017). Development of a virtual museum including a 4D presentation of building history in virtual reality. International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences - ISPRS Archives, 42(2W3), 361–367. https://doi.org/10.5194/isprs-archives-XLII-2-W3-361-2017

Khoerniawan, RW, Agustini, K., & Putrama, IM (2018). Game Edukasi "Penjelajah" Berbasis Virtual Reality. KARMAPATI, 7(1).

Lee, H., Jung, TH, tom Dieck, MC, & Chung, N. (2020). Experiencing immersive virtual reality in museums. Information and Management, 57(5), 103229. https://doi.org/10.1016/j.im.2019.103229

Lingga Purwodani, D., Praherdhiono, H., & Lingga Purwodani Teknologi Pembelajaran, D. (2018). Prospek Pengembangan Lingkungan Belajar Digital untuk Generasi Z di Era Industri IV. Jurnal Pendidikan, 3(7), 930–934. http://journal.um.ac.id/index.php/jptpp/

Poesponegoro, MD, & Notosusanto, N. (2010). Sejarah Nasional Indonesia II (ke-4). Balai Pustaka.

Syarifuddin. (2014). Perancangan dan Implementasi E-Learning menggunakan Aplikasi Camtasia dan Flash untuk Meningkatkan Kualitas Pembelajaran Mata Kuliah Sejarah Pendidikan. Journal of Chemical Information and Modeling, 3(5), 1–58.

Syarifuddin, Syahrial, Z., & Suparman, A. (2017). Virtual Museum : A Learning Material of Indonesia National HistoryNo Title. International Journal of Multicultural and Multireligious Understanding, 4(6). https://doi.org/International Journal of Multicultural and Multireligious Understanding

Tashakkori, A., & Creswell, JW (2007). Editorial: The New Era of Mixed Methods. Journal of Mixed Methods Research, 1(1), 3–7. https://doi.org/10.1177/2345678906293042

Wibowo, TUSH, Maryuni, Y., Nurhasanah, A., & Willdianti, D. (2020). Utilization of Virtual Tour Museum (VTM) in History Learning During the COVID-19 Pandemic. Angewandte CheMie International Edition, 3(1).

Yunarto, O., Usman, N., & Raharjo, M. (2021). Pengembangan Bahan Ajar Berbasis Lintas Budaya Pada Subtema Globalisasi Dan Cinta Tanah Air Berbentuk Cerita Bergambar Di Kelas Vi Sd. *Jurnal Inovasi Sekolah Dasar, 8*(1), 33–39. https://doi.org/10.36706/jisd.v8i1.14361

Needs Analysis of Digital-Based History Learning Resources in Senior High School

LEARNING OUTCOMES", AL-ISHLAH: Jurnal
Pendidikan, 2019
Publication

12   ejournal.unib.ac.id
      Internet Source   <1 %

13   Ricardo L. Punzalan. "Understanding Virtual
      Reunification", The Library Quarterly, 2014   <1 %
      Publication

14   ejournal.unsri.ac.id
      Internet Source   <1 %

15   european-science.com
      Internet Source   <1 %

16   repository.unsri.ac.id
      Internet Source   <1 %

17   eudl.eu
      Internet Source   <1 %

18   journal2.um.ac.id
      Internet Source   <1 %

19   repositori.uhnp.ac.id
      Internet Source   <1 %

20   Submitted to Universitas Riau
      Student Paper   <1 %

21   journal.unesa.ac.id
      Internet Source   <1 %

      repository.unesa.ac.id

22 Internet Source <1%

23 Maidi Maidi, Muhammad Majdi. "Model Bahan Ajar Seni Budaya dan Kearifan Lokal di Madrasah Ibtidaiyah Kabupaten Hulu Sungai Utara", Jurnal Basicedu, 2022
Publication <1%

24 Submitted to University of New South Wales
Student Paper <1%

25 garuda.kemdikbud.go.id
Internet Source <1%

26 Submitted to Saint Leo University
Student Paper <1%

27 jurnal.untan.ac.id
Internet Source <1%

28 D Suryanti, P Sinaga, W Surakusumah. "Improvement of Students' Environmental Literacy by Using Integrated Science Teaching Materials", IOP Conference Series: Materials Science and Engineering, 2018
Publication <1%

29 Tommy Tommy, Febrian Febrian, Nashriana Nashriana, Ruben Achmad. "Immaterial Compensation Not Criminal Losing Lives as an Implementation of Victim Protection", Fiat Justisia: Jurnal Ilmu Hukum, 2022
Publication <1%

30 repository.upi.edu
    Internet Source
    <1 %

31 Submitted to Universitas Pelita Harapan
    Student Paper
    <1 %

32 Submitted to University of Adelaide
    Student Paper
    <1 %

33 jurnal.unej.ac.id
    Internet Source
    <1 %

34 repository.lppm.unila.ac.id
    Internet Source
    <1 %

35 Arie Widya Murni, Fajar Nur Yasin.
    "Pengembangan Lembar Kerja Peserta Didik
    (LKPD) Berbasis Proyek pada Materi Siklus Air
    Kelas V Sekolah Dasar", Jurnal Basicedu, 2021
    Publication
    <1 %

36 Dedi Zulkarnain Pulungan, Jamaris Jamaris,
    Junifer Siregar. "The Effectiveness of Google
    Classroom Applications on Elementary School
    Students' Cognitive Learning Outcomes",
    Jurnal Basicedu, 2022
    Publication
    <1 %

37 M S Sari, Hapizah, E Susanti, Scristia.
    "Development of teaching materials
    arithmetic sequence and series based on
    android for problem based learning", Journal
    of Physics: Conference Series, 2020
    <1 %

Publication

38   R Mushlihuddin, Nurafifah, Irvan. "The effectiveness of problem-based learning on students' problem solving ability in vector analysis course", Journal of Physics: Conference Series, 2018
Publication
<1%

39   Syarifuddin, Sinta. "The Development of Online Learning Media based on Tiktok for Teaching Local Wisdom Course during the Covid-19 Pandemic", International Journal of Interactive Mobile Technologies (iJIM), 2022
Publication
<1%

40   www.neliti.com
Internet Source
<1%

41   www.springerprofessional.de
Internet Source
<1%

42   ojs.unimal.ac.id
Internet Source
<1%

43   Arif Sholahuddin, Yeny Artaulyna, Parham Saadi, Syahmani. "Students' scientific literacy as the effect of project-based learning using a simple colloid product", AIP Publishing, 2022
Publication
<1%

44   Muhammad Rijal Fadli, Saefur Rochmat, Ajat Sudrajat, Aman Aman, Arif Rohman, Kuswono Kuswono. "Flipped classroom in history
<1%

learning to improve students' critical thinking", International Journal of Evaluation and Research in Education (IJERE), 2022

Exclude quotes	Off	Exclude matches	Off
Exclude bibliography	Off		