The Use of the North Sumatra E-Museum on Resource Reading Skills in Anthropology

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ARTICLE INFO

Keywords:
Anthropology Learning; E-Museum; Resource Reading Skills.

ABSTRACT

The purpose of this research is to prove the improvement of reading skills of Al-Azhar University law students through the e-Museum. A post-test research design with only a control design is the quantitative experimental approach used in this method. Primary school students in the second grade served as the study population; they were split evenly into two groups (20 in the experimental group and 18 in the control group). The normality test, homogeneity test, and paired sample t-test are the data analysis methods used to determine the value of Sig. (2-tailed), where a value of 0.000 0.05 indicates that Ha is accepted and Ho is rejected. There were also notable differences between the control and experimental groups. It concluded that the e-Museum could help law students in their anthropological classes become better readers. This means that everyone accessing the E-museum needs to pay close attention to its digitally recorded and easily accessible archive of historically significant, scientifically significant, and culturally significant visual and aural materials.

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1. INTRODUCTION

Education plays an important role in life because education is a vehicle to improve and develop the quality of Human Resources (HR), where qualified human resources will be able to maintain natural resources well (Agbedahin, 2019; Sekerin, Gaisina, Shutov, Abdrahmanov, & Valitova, 2018). Following technological developments to avoid creating a technological gap in education, using technology in the learning process is one way to increase the quality of education. Making or implementing technology in the educational process is one method (Ashima et al., 2021; Chick et al., 2020; Mohammad, 2018). The fast progress of information technology has caused humanity to transition from the analogue to the digital dimensions. In order to accommodate the various learning needs of students, educators must also be able to blend classic learning methods with cutting-edge information technology (Syarif, 2012).

The process of learning requires the use of media. Media must be employed in order to educate and learn successfully. Especially medium- or intermediate-sized media (Rosyid, Sa’diyah, & Septiana, 2021). Using a medium to display, record, share, and distribute symbols using certain sensory inputs and

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organising information. In the context of teaching and learning, media are often seen as graphic, photographic, or electronic devices for capturing, processing, and reconstituting spoken or visual information (Ridwan & Nurhaeni, 2021). Findings from Lee (2023) show that e-museums reflect a constructivist museum educational approach and that e-museums can offer learning experiences that empower and motivate children. The utilization of instructional media is anticipated to boost student learning outcomes since it can improve students' learning processes and increase their willingness to study (Castro & Tumibay, 2021; Jdaitawi, 2019).

Reading is the technique the reader uses to absorb the information the author wants to convey through the use of words or written language. At both the primary and secondary levels, we still occasionally run into students who have trouble reading. In most cases, this is a result of the students' poor reading comprehension skills (Brevik, 2019; Jones et al., 2019). Reading comprehension is the process of reading intently to understand the meaning or substance of a text, according to Ardhian et al. (2020). Through direct student participation in the learning process, such as through the use of media, reading learning may provide students with experience (Bursali & Yilmaz, 2019). For students to be interested in learning, teachers must deliver interesting classes.

The process of reading activities via digital literacy is one example of how technology may enhance the achievement of the learning process at a university (Mudra, 2020). Access to advanced digital literacy can help students learn more about science, especially by improving their reading skills (Blau, Shamir-Inbal, & Avdiel, 2020; Liu, Tretjakova, Fedorov, & Kharakhordina, 2020). Winskel (2020) states that every student should be able to read well since it plays a crucial role in learning and is associated with students who struggle in school. Learning to read is a skill that will have long-term effects. According to Widyastuti et al. (2016), literacy is the capacity to see, hear, write, read, talk, and think. The development of literacy is essential for students since it is a fundamental skill that all students must possess in order to function in the world of the future (Sondakh et al., 2021; Tabroni et al., 2022). Especially on the growth of digital literacy in this day and age.

The poor quality of education is one of the issues facing the education system that has come to the attention of adult society (Haleem, Javaid, Qadri, & Suman, 2022). Education quality is affected by both internal and external variables. Low-quality designed learning and implementation by educators is an internal variable contributing to low-quality education (Parween & Tran, 2020). A change agent educator must be able to explain how the change will affect society in general and students in particular, to accomplish the education goal in and of itself (Arsyad, 2016). According to Law No. 14 of 2005’s Article 60, a professional lecturer’s responsibilities include organizing and carrying out the learning process and assessing and evaluating learning outcomes. In this instance, adopting appropriate media for learning might help lecturers accomplish one of their responsibilities, which is planning and carrying out learning activities.

Museums originally appeared in Europe, i.e., they are a space or places especially for storing exotic items belonging to the king. In the future, museums will be places to collect, preserve, care for, document, present, and communicate natural and cultural objects for the purposes of study, learning, and recreation. Primitive cultural relics on display in museums today are now a medium that informs us about the past, particularly the younger generation who do not share the same life experiences as the older generation (Rumansara, 2013). The development of museums in Indonesia cannot be separated from the colonial period. Before independence, the purpose of establishing a museum pertaining to culture was to get to know the culture of the colonized people. While the establishment of a museum relating to science is intended to exploit the sources of natural wealth in colonized countries, the museum’s establishment after independence was to preserve and develop cultural heritage. Government attention to museums began in 1948 through the Cultural Office in the Ministry of Education, Teaching, and Culture. More serious attention was paid in 1957 when the Office of Cultural Affairs established the Museum Affairs Section. Since independence, museums’ establishment and development in Indonesia have increased. The purpose of the establishment of the museum after independence is the preservation and development of heritage culture within the framework of national unity and civilization, as well as a means of non-formal education. During the colonial period, the number of collections was quite large but presented with the

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concept of data exhibitions in Europe. While the number of collections after independence is still limited, the collection is exhibited for the benefit of the nation in order to cultivate a sense of nationality and identity (Munandar, 2011).

The use of information technology is very useful for delivering notifications to the public (Budd et al., 2020). This can be done by building an e-museum information system containing historical and cultural objects. The system is useful for the public when seeking information about historical objects. With the e-museum information system, it is hoped that it will help the public gain knowledge about the collections in the museum (Bello, Rotimi-Williams; Otobo, 2018; Wang, 2021). E-museum as a medium introduces cultural heritage among the community to conduct research related to inspiration, learning, and fun (Bello, Rotimi-Williams; Otobo, 2018; Sholeh, Iswayudi, & Prabowo, 2014). The museum collects and maintains natural science objects, art objects, and objects that have an important history to be valuable and exhibited to the public. Various collections are exhibited in historical museums that educate about history and its relevance to the present and past. Some history museums house specific curatorial aspects of local histories. The museum has a diverse collection, including documents, artifacts, and archaeological objects. In addition, there is also a natural history museum, which is a museum that exhibits the natural world and has a focus on nature and culture. In general, it provides education that focuses on ancient history and anthropology.

Due to COVID-19, the museum had to close. However, it has now transformed into a distance education centre. According to the research, previous to COVID-19, most museums that offered programmes did so primarily through teleconferencing software aimed at schools. After being forced to close owing to the spread of COVID-19, several museums have turned to distance learning programmes, primarily through social media platforms, to continue serving the public. The study by Ennes (2021) provides an overview of the state of museum-based distance learning programmes and possible avenues for future investigation in this area. Research in these areas can aid in the creation of best practices, the identification of high-quality programmes, the identification of instructional design opportunities, and the improvement of museum personnel training and education.

The North Sumatra State Museum has been open to the public since 1954. The Medan museum can be found at No. 51 Jalan H. M. Jhoni. The North Sumatera Museum houses a wide range of historical artefacts, which help prove natural history, human culture, and the environment, and describe a nation's unique character. In recent years, attendance in the State Museum of North Sumatera has steadily dropped. The public has lost interest in museums, leading to a fall in attendance. The museum's appearance, interior, and amenities all contribute to the attraction in question. Various North Sumatran tribal identities are preserved in the State Museum of North Sumatera. This museum takes inspiration for its displays from the many different North Sumatran ethnic groups (Lestari, Barky, & Rambe, 2018).

Based on the aforementioned problem, it is evident that using e-museums as a learning tool leads to effective learning experiences and improves students' ability to read and analyze primary sources. However, there is a lack of research investigating the implementation of technology-based e-museums in anthropology education, particularly in enhancing students' skills in utilizing primary source evidence. Consequently, it is essential to integrate technology into the anthropology learning process, specifically by incorporating e-museums as valuable learning resources. This integration aims to create interactive and innovative learning experiences for students. Therefore, this research aims to examine the utilization of the North Sumatra E-Museum to enhance students' source reading skills in the field of anthropology.

2. METHODS

This study employed a quantitative methodology. This study employed a non-equivalent control group design with a quasi-experimental format. Respondents were students in grades 11 through 18 in the control class and grades 13 through 20 in the experimental class. Class 11, which serves as the control group, is taught using the lecture technique, whereas class 13, which serves as the experimental group, is taught using media learning. All Al-Azhar University anthropology students enrolled in the legal studies program make up the population. Classes 11 and 13 were utilized as the accessible populations for this
study. Purposive sampling is used for sampling, and specific concerns are taken into account during the process (Sugiyono, 2017).

In grades 11 and 13, pre- and post-tests were utilized to gather data on reading ability. Six parts of the evaluation include the use of the tool. In this work, measuring methodologies make use of a test that has been validated by reliability testing using Cronbach’s alpha and correlation analysis product moments. With the use of SPSS software version 25 for Windows 11, this study employs the normality test, homogeneity test, and independent t-test as data analysis techniques (Ghozali, 2018). This research instrument is attached to Table 1.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Indicators</th>
<th>Fatigue</th>
<th>Target</th>
<th>Grain</th>
<th>Sum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effectiveness</td>
<td>Accuracy of passion</td>
<td>4-1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Media Learning E Museum</td>
<td>Suitability of appearance</td>
<td>4-1</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Accuracy of intonation</td>
<td>4-1</td>
<td>3</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Accuracy of pronunciation</td>
<td>4-1</td>
<td>4</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vocal accuracy</td>
<td>4-1</td>
<td>5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mimic accuracy</td>
<td>4-1</td>
<td>6</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

This research utilize SPSS software version 25 for Windows 11 to conduct normality tests applying the Kolmogorov-Smirnov test to determine whether the data are normal. Using Levene and SPSS version 25 on Windows 11, methods for assessing homogeneity test results A significance value of 5% was used in the t-test to continue testing the hypothesis. The E Museum’s impact on law students’ ability to interpret resources will also be measured using an effect-size test. Questionnaires or questionnaires are declared valid if the variables to be measured can be disclosed through the questionnaire. So that it can be said that the variable can be measured precisely by the instrument. The validity of the research instrument indicates the degree the accuracy of the instrument as a measuring tool for the content or what is being measured. A test will have high validity if it is able to carry out its function as a measuring instrument, and this has been done by the author.

### 3. FINDINGS AND DISCUSSION

Through the results of analytical research that has been carried out in processing data derived from a normal distribution using a normality test using the Kolmogorov-Smirnov method (K-S test), Use the value of Asymp to determine the normality of the tested data. With the predetermined condition, the data is considered normally distributed if the sig (2-tailed) value obtained from the results of the calculation is greater than the alpha rate of 5%, or sig (2-tailed) > 0.05.

<table>
<thead>
<tr>
<th>Tests of Normality</th>
<th>Kolmogorov-Smirnov</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skills Read</td>
<td>Statistic Df Sig.</td>
<td>Statistic Df Sig.</td>
</tr>
<tr>
<td>Pre-Test Experiments (Media E Museum)</td>
<td>0.147 20 0.095</td>
<td>0.956 20 0.240</td>
</tr>
<tr>
<td>Post-Test Experiments (Media E Museum)</td>
<td>0.167 20 0.032</td>
<td>0.931 20 0.052</td>
</tr>
<tr>
<td>Pre-Test Control (Conventional)</td>
<td>0.098 18 0.200</td>
<td>0.974 18 0.643</td>
</tr>
<tr>
<td>Post-Test Control (conventional)</td>
<td>0.131 18 0.189</td>
<td>0.960 18 0.284</td>
</tr>
</tbody>
</table>

The significance value (Sig.) for all data is good on the Kolmogorov-Smirnov test as well as the Shapiro-Wilk test, according to the normalcy test table shown above. It has been determined that the...
data in the study were distributed normally. We performed a study on the impact of digital museums on reading comprehension skills in the context of theme learning, which is consistent with the research of Rahmawati et al. (2018). The study’s findings showed that the data were normally distributed, with significant values for the experimental and control classes of 0.200 > 0.05. Furthermore, the results of the instrument reliability test are presented in Table 3.

Table 3. Homogeneity Test Data

<table>
<thead>
<tr>
<th>Skills Read</th>
<th>Test of Homogeneity of Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Levene Statistic</td>
</tr>
<tr>
<td>Based on Mean</td>
<td>.789</td>
</tr>
<tr>
<td>Based on Median</td>
<td>.561</td>
</tr>
<tr>
<td>Based on Median and</td>
<td>.561</td>
</tr>
<tr>
<td>adjusted df</td>
<td></td>
</tr>
<tr>
<td>Based on trimmed mean</td>
<td>.693</td>
</tr>
</tbody>
</table>

Homogeneity tests can be performed in this study to determine whether or not the data from some of the population variations are the same. Based on the findings of the aforementioned homogeneity test, a significance (Sig) value based on the mean of 0.378 > 0.05 has been determined. The variance of the experimental class posttest data and the control class posttest data is the same, or homogenous, because the significance value is greater than 0.05.

Results of homogeneity tests in research conducted by Rahmawati et al. (2018) regarding the influence of digital museums on reading comprehension in thematic learning also show that the data is homogeneous with a significance value of 0.744 > 0.05. A t test was then conducted to see whether using the e-museum had an impact on the participants' ability to read sources. A paired sample t-test was used to conduct the t-test.

Table 4. Paired Sample T-test Test Data

<table>
<thead>
<tr>
<th>Paired Samples Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paired Differences</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
<th>Lower</th>
<th>Upper</th>
<th>t</th>
<th>Df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1 Pre-Test Eksperimen - Post-Test Eksperimen</td>
<td>-19,800</td>
<td>4,802</td>
<td>.877</td>
<td>-21,593</td>
<td>-18,007</td>
<td>-22,583</td>
<td>29</td>
</tr>
<tr>
<td>Pair 2 Pre-Test Kontrol - Post-Test Kontrol</td>
<td>-19,258</td>
<td>13,513</td>
<td>2,427</td>
<td>-24,215</td>
<td>-14,302</td>
<td>-7,935</td>
<td>30</td>
</tr>
</tbody>
</table>

From the analysis of the paired test data's findings the sig value (2-tailed) for the t-test sample in the first pair was 0.000 < 0.05, indicating that there is a difference in the typical reading skills of students between the experimental pretest class and the experimental posttest class (using media E Museum). The second pair's t-test sample had a sig value (2-tailed) of 0.000<0.05 in the paired test findings, indicating that there is a difference between the average resource reading abilities for the pretest control class and the posttest control class (conventional).
In line with the research conducted by Sri Rahmawati (2018) on the Influence of Digital Museums in the Context of Reading Comprehension Ability in Learning history. The results of the study obtained a pretest value of t Sig. (2-tailed) of 0.833 >0.05, while the test results were t posttest data shows a different significance value than the t-test pretest data, i.e. Sig. (2-tailed) by 0.000< 0.05. The estimated t value t table further supports this, showing that Ho is rejected and Ha is accepted, indicating that there is a substantial impact on the application of E Museum in the context of resource reading abilities in anthropological education. Since the E-museum is not limited in either location or hours of operation, students are free to explore a wider variety of historical artefacts. The students can spend as much time as they desire searching for, recognising, and analysing different historical materials, unlike in typical museums, which only offer a limited amount of time for visits. The reading ability of the students is positively impacted by this (Russo, Watkins, & Groundwater-Smith, 2009; Shehade & Stylianou-Lambert, 2020). A digital exhibit at an e-museum can improve students' comprehension, independence, and activity level. Everyone may examine the exhibits at the e-museum and interact with them at their own speed, which encourages greater openness to learning. It is a great strategy for involving, educating, and entertaining students, as well as giving older and more seasoned art aficionados fresh information, viewpoints, and freedom (Bello & Mohamed, 2018; Xiao & Luo, 2022).

Based on the results of the Paired Sample t-test shows an average difference in the pretest class and posttest experiments. Furthermore, to see the magnitude of the influence of the use of media E Museum on the reading skills of law students of Al - Azhar University, as for the calculation effect size t-test uses the following formula:

\[ ES = \frac{\bar{Y}_E - \bar{Y}_C}{S_C} \]

Captions:
- \( ES \): Effect Size
- \( \bar{Y}_E \): Average value of the experimental group
- \( \bar{Y}_C \): Average of the values of the control group
- \( S_C \): Standard deviation of the control group

So that it can be known that:

\[ \begin{align*}
\bar{Y}_E &= 82.37 \\
\bar{Y}_C &= 68.12 \\
S_C &= 10.51 \\
ES &= \frac{82.37 - 68.12}{10.51} = 14.25 \\
ES &= 14.25 = 1.355
\]

The classification criteria for Effect Size interpretation, namely:

<table>
<thead>
<tr>
<th>Value</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>( ES &lt; 0.2 )</td>
<td>Influence is relatively low</td>
</tr>
<tr>
<td>( 0.2 \leq ES &lt; 0.8 )</td>
<td>Influence is classified as moderate</td>
</tr>
<tr>
<td>( ES \geq 0.8 )</td>
<td>Influence is relatively high</td>
</tr>
</tbody>
</table>

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Based on the results of the influence test calculation using the effect size test, the ES value = 1.355 obtained a relatively great influence according to the classification of interpretations, proving that the use of media, such as the E Museum, affects the resource reading skills of law students with a relatively high interpretation of influence. This is stated from several perspectives, including the use of media, which can help law students improve their reading skills. Because using media at the E Museum can be interesting to students and can also improve their skills in using increasingly sophisticated technology, it is a medium that is used to improve reading skills (Fisher & Hitchcock, 2022; Taormina & Baraldi, 2022).

This research is strengthened based on previous research by Rahmawati et al. (2018) by stating that the results of the hypothesis test in this study showed the value of Sig. (2-tailed) of 0.000 < 0.05 This means that the use of digital museums affects students' reading comprehension in musiology courses. Based on previous research and the newly completed research by the authors so. It can be concluded that there is an influence use of media E Museum towards resource reading skills in Al-Azhar University law students.

4. CONCLUSION

Based on the normality test, homogeneity test, and paired sample t-test are the data analysis methods used to determine the value of Sig. (2-tailed), where a value of 0.000 0.05 indicates that Ha is accepted and Ho is rejected. Additionally, there were significant distinctions between the control and experimental classes. As a result, the researchers came to the conclusion that the reading skills of law students at Al-Azhar University in anthropology classes can be improved through the e-Museum. Based on this, in using the E-museum one must pay attention to a collection of images, sound files, text documents, and videos of historical, scientific, or cultural importance that are recorded digitally and can be accessed via electronic media. When reading fairy tales in the experimental class using E Museum media, the average ability value result is higher than in the control class not using E Museum media. Thus, the use of media such as the E Museum creates learning that is effective for use in improving the resource reading skills of law students at Al-Azhar University. Limitations in this study include several factors that affect reading skills that are used as research variables. In this study, there are limitations through external factors, namely, the researcher only involved 38 students, so the results It has not been generalized to a large number of subject groups.

Acknowledgement: The author would like to thank the Al-Azhar University Medan, lecturers, and students who have supported this research so that it becomes a quality article and can be useful for readers.

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