Original Article

Comparison of student achievement between digital classes and regular classes in social studies subjects

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Abstract:
The learning process in the 21st century has urged educators to be more creative and innovative regarding learning models, methods, and media. One of the approaches to enhance learning effectiveness is the integration of digital technology into the learning process, realized through digital class programs. The objective of this study was to assess student learning achievements in digital classes compared to regular classes and determine any differences in student performance between the two settings. This study employed a quantitative approach with a comparative research design. The population consisted of 190 students, and a purposive sampling technique was applied, considering the equivalence of abilities among regular class students. The sample comprised 31 digital class students and 34 regular class students at State Islamic Junior High School (MTsN) 4 of Banda Aceh City in 2023. The process of data collection involved interviews, observation, and documentation. The analysis included normality and homogeneity tests as prerequisites, as well as an independent sample t-test for hypothesis testing. The overall average score for digital class students was 71.17, while regular class students scored an average of 73.16. The difference in average scores between digital and regular classes was 1.99. In the t-test, the calculated t-value was -0.904, with a critical t-value of 1.998 at a significance level of 0.05 and df=63. As the calculated t-value (-0.904) was less than the critical t-value (1.998), the hypothesis in this study was rejected. The findings from the average scores and t-test value indicated that there was no significant difference in student learning achievement between digital and regular classes in Social Science Subject at State Islamic Junior High School (MTsN) 4 of Banda Aceh. This can happen due to several factors such as students' ability to use digital devices is still limited, so they do not fully understand the subject matter and internet facilities is often difficult to access.

Keywords: Digital Class, Regular Class, Learning Achievement.
Introduction

Learning is an act of instructive value aimed at achieving a planned goal. In the learning process there are relationships between different parts, namely educators, students, and learning topics or assets. The interaction between these three main parts involves offices and foundations such as strategy, media and learning venues. So, the learning process that develops is made to allow the learning objectives that have been prepared to be achieved, this opinion is expressed by (Darmawan and Nashoih 2019). Success in learning at school can be shown by increasing student achievement. According to Winkel in Hamdani (2017), learning achievement is evidence of the greatest progress or potential that a person has achieved after making learning efforts. Progress in learning is indicated by test scores or grades given by educators. The phenomenon that occurs at this time is the latest program in the field of education, namely digital classes which are part of the independent curriculum. Currently, every school in Banda Aceh must prepare one digital classroom. Digital classes are expected to improve student achievement, one of which is at MTsN 4 Banda Aceh school. This is a manifestation of the objectives of the digital madrasah program which has been launched in Banda Aceh City on August 1, 2023 by the Ministry of Religious Affairs (Kemenag) Banda Aceh. The Ministry of Religion of Aceh Province is committed to all madrasahs in Aceh Province to update and develop digital learning in the technological era.

According to Rindiana & Firdausi (2019) in the journal "Evaluation of the application of digital classes at SMP Al-Azhar 21 Sukaharjo", there are advantages and disadvantages in the application of digital classes in the school. The advantage of implementing digital classes is that it makes it easier for teachers to deliver learning materials by maximizing the available facilities and students more easily access learning materials stored on laptops so as to reduce paper or paperless use. However, there are also limitations when implementing digital learning, namely an unstable internet connection that takes time to reconnect the laptop with the internet. Based on initial observations made by researchers in class VII at MTsN 4 Banda Aceh, this odd semester will be implemented a digital class program for grade VII students. In this digital class, teaching and learning activities will use laptops. However, in this school itself there are also regular classes that apply learning without special grouping and do not use computer devices in learning activities. From the observations, the digital classes implemented in this school have been carried out in odd semesters in the new academic year 2023/2024. Communication and information technology is also used as a means of student correspondence such as learning, one of which is email that utilizes the internet network. E-mail is useful for creating accounts so that each student and teacher can access digital learning according to their respective devices. The significant difference in the learning process between digital classes and regular classes makes researchers interested in knowing more about the differences in learning achievement between the two classes. The measurement of learning achievement in this study was carried out on social studies subjects at Madrasah Tsanawiyah Negeri 4 Banda Aceh City.

Theoretical studies

Research requires theories that are relevant to the phenomenon to be studied to make a frame of mind as a reference, so that the objectives in research are clearer. First, the theory of student learning achievement is a result achieved by a student after carrying out learning activities. Learning achievement in school is determined by the achievement of grades that students can achieve. This means that learning achievement can be used to
measure student achievement in knowing, understanding, and showing what has been obtained or also the success achieved, this opinion was expressed by Acep and Uep (2017). Digital learning includes interactive media where a system that allows students to learn more widely and diversely. It can be said that students and teachers can learn more interactively by utilizing technology in the digital classroom. While regular classes tend to use conventional methods which are traditional methods or also called lecture methods where learning will be centered on the teacher so that students act passively. Furthermore, Riyadi and Sukmayadi (2013) stated that differences in learning methods will also result in differences in student learning achievement between digital classes and regular classes.

Social studies lessons, short for Social Sciences, is one of the subjects taught at various levels of education, especially in elementary and secondary schools. These subjects aim to provide students with an understanding of various social, cultural, economic, and political aspects in society. According to Nursa’ban et al (2021: 3) Class VII social learning aims to equip students with knowledge about various social symptoms, at the environmental level through an understanding of human activities and social communication through space and time networks.

**Method**

This research is conducted using comparative research design and quantitative methodology, research that generates and evaluates numerical data is known as quantitative research. By using statistical concepts, research results that can be tested objectively are obtained. To obtain valid and relevant data, a series of data collection techniques are used, namely interviews, observations, and documentation. In this study, observation was carried out by observing and understanding the assessment or evaluation of student learning achievement consisting of digital classes and regular classes. Researchers record scores consisting of two test scores and one Final Exam score. The interviews conducted by researchers with social studies teachers and principals related to the learning process, the ability of teachers and students during the learning process, and the principal’s evaluation of the digital classroom program. The documentation consists of a collection of test scores and final exams for digital class students with regular classes, social studies final exam questions, digital class teaching modules and regular classes, and photo documents when the research takes place. The population in this study was all grade VII students in MTsN 4 Banda Aceh. Class VII consists of two special classes, one digital class and three regular classes so that there are a total of 6 classes with 190 students. Purposive sampling is the method used in the sampling process for this study, so that the sample is digital class students (VII-3) totaling 31 students and regular class (VII-4) totaling 34 students. While data analysis methods include independent sample t test (two-mean difference test), homogeneity test, and normality test using the SPSS program.

**Result**

**Normality Test**

<table>
<thead>
<tr>
<th>Class Type</th>
<th>Statistic</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Classroom</td>
<td>0.130</td>
<td>31</td>
<td>0.199</td>
</tr>
</tbody>
</table>
Learning Performance
Social
Regular Class 0.131 34 0.145

Source: SPSS Program Primary Data (processed in 2023)

The table above shows that the probability value in the Kolmogorov-smirnov analysis is 0.199 for digital classes and 0.145 for regular classes, so this value is greater than the signification level of 0.05 so that it can be concluded that the two data above are normally distributed.

Homogeneity Test

Tabel 2. Homogeneity Test Results

<table>
<thead>
<tr>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.576</td>
<td>1</td>
<td>63</td>
<td>0.063</td>
</tr>
</tbody>
</table>

Source: SPSS Program Primary Data (processed in 2023)

Based on the homogeneity test table, it can be seen that the Probability Value value of 0.063 is greater than the signification level of 0.05. So it can be concluded that the variance of the two samples is homogeneous.

Uji Hipotesis (Independent Sample T Test)

The hypothesis in this study is that there is allegedly a significant difference in student achievement between digital classes and regular classes. Based on this hypothesis, the researcher tested the hypothesis using the Independent sample t-test. The results of the comparison of student learning achievement between digital classes and regular classes can be shown below:

\[
t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{(n_1-1)s_1^2 + (n_2-1)s_2^2}{n_1+n_2-2} \left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}
\]

\[
t = \frac{71.17 - 73.16}{\sqrt{1.730.1 + 3.306.27/63 (0.061)}}
\]

\[
t = \frac{71.17 - 73.16}{\sqrt{79.94 (0.061)}}
\]

\[
t = -1.99
\]

\[
t = -0.904
\]

Based on the t test, a calculated value of -0.904 was obtained and compared with the ttable value at a significant level \(\alpha = 0.05\) with \(d_k = (n_1+n_2)-2 = (31+34)-2 = 63\) is 1.998. The test criteria is if the calculated value > ttable then the Hypothesis (Ha) is accepted, while if the calculated value is < ttable then the Hypothesis (Ha) is rejected. Therefore, the calculated value < ttable is obtained which is (-0.904 < 1.998). Thus,
Discussion

The overall average score of digital class students in social studies subjects is 71.17 and the overall average score of regular class students in social studies subjects is 73.16. According to the average score of digital classes and regular classes, student achievement can be categorized as low, because the average score of both classes does not reach the Minimum Completeness Criteria (KKM) score of 75. Then to see the difference in student achievement between digital classes and regular classes, it can be seen from the average score obtained by students after taking 3 tests conducted by social studies subject teachers. Based on the results of hypothesis testing or t tests conducted by researchers, the calculated value of ttable < is obtained which is (-0.904 < 1.998) so that the hypothesis (Ha) is rejected. This means that there is no significant difference in student achievement between digital classes and regular classes.

Digital classroom is a program created to improve student achievement in learning. However, in an effort to succeed in digital classes to improve student achievement, strong cooperation and contributions from various parties are needed, both students, teachers, parents and schools. So that significant changes and improvements in learning achievement require a long process and changes will not occur at the beginning of the implementation of this digital class program. According to Hardianto (2022: 130), in digital classrooms, there are also shortcomings, namely students who have learning preferences with direct guidance from teachers will find it difficult to learn material that must be accessed independently and require complex skills and abilities. In learning, teachers and students must be able to operate digital devices such as laptops and projectors, to master various digital devices, teachers and students must first master digital literacy which includes information literacy, ICT (Information and Communication Technology) and media. This finding is in line with the results of observations and interviews conducted by researchers at MTsN 4 school in Banda Aceh City. According to information obtained from social studies subject teachers, there are 50% of students who are less active in learning activities. Students and teachers also often experience obstacles when learning due to difficulties in accessing school wifi. This wifi facility becomes slow when all students are connecting to the wifi network on their laptops. When having difficulty accessing the internet, teachers must continue learning as usual, so that less time in the learning process becomes less. This makes students not optimal in understanding the material delivered by the teacher.

Based on the explanation above, student achievement in the cognitive realm in social studies lessons between digital classes and regular classes has no significant difference and is relatively the same. This can happen due to several factors such as, students' ability to use digital devices is still limited, digital class students in the learning process focus more on how to use digital devices so that students cannot understand the subject matter optimally, and internet facilities such as wifi are often difficult to access.

Conclusion

Based on the results of research and discussions that have been described by researchers regarding the comparison of student achievement between digital classes and regular classes in social studies subjects at MTsN 4 Banda Aceh, it can be obtained that: 1) The learning achievement of digital class students is known to be 71.17 and the
Learning achievement of regular class students is 73.16. This learning achievement is obtained based on the results of the total average score of students; 2) In the t test, a calculated value of -0.904 is obtained. So that the t-count value < t-table is -0.904 < 1.998, so it can be concluded that there is no significant difference in student achievement between digital classes and regular classes. The measurement of student achievement in this study focused on the cognitive realm or level of knowledge of students in social studies subjects.

**Saran**

Based on the conclusions described above, researchers will provide several inputs, namely: 1) The school is expected to gradually monitor the development of the learning process both in regular classes and digital class programs, so that any obstacles passed by teachers and students can be overcome in a fast time. School principals are also expected to provide regular training and evaluation of digital classroom programs so that teachers' and students' technology adaptability can improve; 2) Digital class programs can focus on grade VIII and IX levels, because in class VII students can learn in advance how to operate laptops properly or provide Information and Communication Technology (ICT) lessons to digital class students to improve digital literacy skills. So that the ability to use digital devices and cognitive abilities in social studies lessons can be balanced; 3) Learning achievement in social studies subjects in digital classes and regular classes is in the low category because it does not reach a KKM score of 75, so schools and social studies subject teachers must improve student learning abilities with creative and innovative learning so that student learning achievement can increase.

**References**


