ASHA PUBLISHING

Volume 1, Issue 1, 2024



JOURNAL OF EDUCATIONAL DEVELOPMENT AND LEARNING

E-ISSN: 3063-8844
Journal of Educational Development and Learning
https://journal.ashapublishing.co.id/index.php/jedal/index

Comparative Study of Student Learning Outcomes between Online and Offline Learning at SMAN 22 Bone

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ABSTRACT

The Coronavirus Diseases 19 outbreak has had a major impact on the ongoing teaching and learning process, especially on student learning outcomes. This research aims to determine the comparison of student learning outcomes between online and offline learning. This research uses a quantitative approach with a quantitative descriptive research type. The sample in this study consisted of 76 students including 38 students in classes X and XI using simple random sampling techniques. The data obtained was analyzed using descriptive statistical analysis and inferential statistical analysis. The research results show that online learning and offline learning are in the quite high category. The average value of learning outcomes obtained by students during online learning is 81.96, lower than the average value of learning outcomes obtained by students during offline learning of 84. Based on the paired sample t-test or t test that has been carried out, it was concluded that there were significant differences in student learning outcomes between online and offline learning at SMAN 22 Bone. In contrast to previous studies which mostly used 2-3 variables, this research only uses a single variable which makes it easier for researchers to formulate the object or core of the research. This research is expected to provide a significant contribution to the understanding and development of better learning methods that are more appropriate to the needs of students at SMAN 22 Bone

Keywords: Study, Online learning, Offline learning

INTRODUCTION

Education is a process carried out in a planned manner through guidance to achieve predetermined goals (Gulyanto et al., 2021; Rahman et al., 2022). The directed process in determining the quality of performance results achieved is reflected in the implementation of education, because education essentially aims to educate, train creativity, and improve the ability to think and act. Education is the most important key in building a person's character and intelligence. Education can be done anywhere and at any time, making it easier to change attitudes and behavior.(Republic of Indonesia Law Number 20 of 2003 Concerning the National Education System, 2003)Article 1 Paragraph 1 states that "Education is a conscious and planned effort to create a learning atmosphere and learning process in such a way that students actively develop their potential to achieve a religious spirit, self-control, personality, intelligence, noble character, and the skills that they themselves need." , society, nation and state".

Education can be classified as an important forum that must be managed well so that it can have a positive impact on humans in achieving national progressa (Arhas et al., 2023; Darwis et al., 2021; Hofmarcher, 2021; Suprianto et al., 2020). Education can be understood as a human bridge to achieve knowledge, including formal education (school), informal education (family), and non-formal education (outside school/community). Learning in formal education basically uses a conventional or face-to-face learning system which is also known as offline learning (outside the network). Offline learning is learning that takes place

without using the internet, but instead uses books and modules as learning resources (Arhas et al., 2022; Nasrullah et al., 2023). Offline learning involves direct contact between educators and students in the implementation of the learning process, which leads to interaction in the delivery of lesson material.

The world is currently facing a disease outbreak called Coronavirus Diseases 2019 (Covid-19). The existence of the Covid-19 virus has had a huge impact on all Indonesian society, especially in matters of work and education (Amat & Zain, 2021; Ramirez & Castillo, 2023; Suprianto et al., 2023). (The Minister of Education, Culture, Research and Technology of the Republic of Indonesia Has Issued Circular Letter Number 4 of 2020 on March 24 2020 Concerning the Implementation of Educational Policies in the Emergency Period of the Spread of Coronavirus, 2020) stating that "The learning process takes place at home via distance learning or commonly known as online learning (on the network) to break the chain of transmission of Coronavirus Disease (Covid-19) in the school environment and provide new and meaningful learning experiences to students."

Online learning is distance learning that takes place outside the school environment using internet technology (Dewi & Sadjiarto, 2021; Yusriadi et al., 2020). It is confirmed in the Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System Article 1 Paragraph 15 that "Distance Education (PJJ) is education in which students are separated from educators and learn using different learning resources through communication, information technology, and other media". Educators face new challenges in implementing online learning, namely choosing the right learning strategies and methods to carry out educational activities in order to convey the material given to students correctly.

(The Minister of Education, Culture, Research and Technology of the Republic of Indonesia Has Issued Circular Letter Number 2 of 2022 Concerning Discretion for the Implementation of a Joint Decree of 4 (Four) Ministers Concerning Guidelines for Organizing , 2019) Pandemic that "Face-to-Face Learning ("Limited PTM can be implemented with the number of students being 50% (fifty percent) of the classroom capacity in educational units located in areas where Community Activity Restrictions (PPKM) level 2 (two) is implemented." As is in the circular issued by the Ministry of Education and Culture, it can be said that the implementation of offline learning can be carried out while still adhering to the decisions and protocols in place.

The implementation of online learning at SMAN 22 Bone itself began to be implemented after the government officially issued a policy regarding SFH (study from home) and WFH (Work from home). The implementation of online learning at SMAN 22 Bone is a learning system that has been implemented for the first time because so far educators and students have used an offline learning system which involves direct interaction between educators and students in the classroom. The policy implemented as a result of these obstacles is the implementation of a 50% learning system at SMAN 22 Bone in September 2021 until the specified time. During the learning process, some students do online learning, and some do offline learning. With this learning system, there is a rotation of learning carried out by students in following the learning process online at home and offline at school but with continue to follow the health protocols that have been implemented by the government.

This research aims to determine the description of learning outcomes for online learning, to determine the description of learning outcomes for offline learning, and to find out whether there is a significant comparison of student learning outcomes between online and offline learning at SMAN 22 Bone. The learning outcome indicators used according to (Dimyati & Mudjino, 2013) include cognitive, affective and psychomotor aspects, which are summarized in the students' report card scores. The hypothesis in this research is that it is suspected that there is a significant difference in student learning outcomes between online and offline learning at SMAN 22 Bone.

METHOD

The approach used in this research is a quantitative approach with a quantitative descriptive research type. In this research, a quantitative approach can help researchers in compiling this research because it requires collecting data in the form of numbers which will be analyzed using statistical analysis, and can also describe whether there are significant differences in student learning outcomes between online learning and offline learning at SMAN 22 Bone.

The operational definition in this research is the student learning outcomes obtained while participating in online learning with offline learning at SMAN 22 Bone. The determination of data collection on learning outcomes in this research refers to cognitive, affective and psychomotor aspects which are summarized in learning outcome indicators, namely student report cards.

The population in this study was 329 students consisting of classes X, XI, and XII. Determination of the sample in this research refers to opinion(Sugiyono, 2019)that "So if the population is 100, and the research results will be applied to 100 people without any errors, then to determine the sample all are taken so that the research is called population research. Meanwhile, if the number of respondents is more than 100, then the sample size is taken from 10-15% or 20-25% or more." So the researchers took 30% of the existing population, using a simple random sampling technique where sample members from the population were taken randomly without paying attention to strata in the population.

The data analysis technique in this research consists of descriptive statistics using mean analysis, and also inferential statistics using the Paired Sample T-Test. Data processing used in this research used Statistical Standard Solution (SPSS) 26 software.

RESULTS AND DISCUSSION

This research is a comparative study of student learning outcomes between online and offline learning. Comparisons were made to see whether there were significant differences in student learning outcomes between online and offline learning at SMAN 22 Bone. The data obtained is in the form of secondary data, which is analyzed using descriptive statistical analysis and inferential statistical analysis with predetermined formulas.

Online Learning

The data used in this study are secondary data obtained from the learning outcomes of grade X and XI students during online learning, the number of which consists of 76 students who are the research sample. This aims to determine the description of online learning at SMAN 22 Bone with student report card grades as an indicator.

Table 1: Summary of Average Values (Mean) of Online Learning Learning Results

Information	Class X	Class XI
Number of Values	3.021	3.208
Average	79.5	84.42

Source: Results of Statistical Analysis of the SPSS 26 Program

Based on table 1, it can be seen that the learning outcomes of class X students during online learning have a total score of 3,021 with an average score of 79.5, while the scores obtained by class XI during online learning have a total score of 3,208 with an average score of 84.42.

Online learning is learning that takes place remotely using technology and internet networks. Online learning is aimed at slowing the spread of the virus which is currently rampant among society so that all forms of activity must be carried out at home, just as learning must be done online. In implementing online learning, direct interaction between educators and students is of course very minimal. Therefore, implementing online learning also emphasizes student independence when carrying out the learning process under limited supervision from educators.

In this study, the student learning outcome variables achieved were in the quite high category. Online learning that is carried out cannot be free from technical problems, either due to limited internet access, lack of understanding in the use of technology, and limited interaction between educators and students so that the learning material delivered is less than optimal. This is reinforced by the theory presented (Dewi & Sadjiarto, 2021) that "Problematics or problems caused by conditional and technological factors make the implementation of online learning less smooth and effective." However, the process of implementing online learning also teaches students to carry out learning independently which can be done anytime and anywhere, which allows students to have freedom of study time. This is reinforced by the theory presented (Budiman, 2021)that "The implementation of online learning makes it easier for students to apply learning center principles in managing study schedules and finding solutions to obstacles in the learning process." So it can be seen that implementing online learning has advantages and disadvantages which aim to provide passive learning delivery services so that learning objectives can be taught to students in a planned manner.

Offline Learning

The data used in this study are secondary data obtained from the learning outcomes of class X and XI students during offline learning, the number of which consists of 76 students who are the research sample. This aims to determine the picture of offline learning at SMAN 22 Bone with the indicator of student report card scores.

Table 2: Summary of Average Values (Mean) of Offline Learning Learning Results

Information	Class X	Class XI
Number of Values	3.085	3.299
Average	81.18	86.82

Source: Results of Statistical Analysis of the SPSS 26 Program

Based on table 2, it can be seen that the learning outcomes of class X students during offline learning have a total score of 3,085 with an average score of 81.18, while the scores obtained by class XI during offline learning have a total score of 3,299 with an average score of 86.82.

Offline learning is learning that is always used in the teaching and learning process. Implementing offline learning directly can build interaction and closeness between educators and students. Offline learning indirectly supports educators to innovate through all learning strategies and methods, thereby creating a more active classroom atmosphere. The learning process carried out offline helps students to manage all learning activities in class better. In other words, offline learning can further increase students' knowledge and creativity under the supervision of an educator.

In this study, student learning outcome variables achieved by offline learning were in the quite high category. Face-to-face learning, which involves interaction between educators and students in delivering learning material directly in the classroom, makes learning easier for students without having to pay for internet access. The implementation of face-to-face offline learning helps educators to be able to assess students' level of understanding regarding

knowledge of learning material both individually and in groups. This is reinforced by the theory presented (Yulianti & Utomo, 2022) that "The process of implementing offline learning makes it very easy for educators to supervise students, and implementing offline learning encourages students to play an active role in the learning process, thus providing the resulting feedback as evaluation material." In this way, implementing offline learning can make it easier for students to understand the lesson material provided. Apart from that, offline learning can help educators and students to create interaction during the learning process.

Learning outcomes

The overall student learning outcomes during online and offline learning at SMAN 22 Bone can be seen in the table below:

Table 3: Analysis of Average Values (Mean) of Online and Offline Learning Results at SMAN 22 Bone

	N	Minimum	Maximum	Mean	Std. Deviation
Online Learning	76	71	87	81.96	3.693
Offline Learning	76	73	89	84.00	3.875
Valid N (listwise)	76				

Source: Results of Statistical Analysis of the SPSS 26 Program

Based on table 3, it can be seen that the overall student learning outcomes during online learning have an average score of 81.96, while during offline learning they have an average score of 84.

From the results of the analysis of the average value (mean), it can be seen that the average value of online learning is lower than offline learning. However, in the analysis category the average (mean) value of online learning and offline learning is in the high category with a value presentation of 71-85%.

Comparison of student learning outcomes between online and offline learning

Inferential analysis to determine whether there are significant differences in student learning outcomes between online and offline learning at SMAN 22 Bone, an inferential statistical analysis was carried out. The test carried out in this research uses hypothesis testing with the Paired Sample T-test.

Table 4: Paired Samples Test Results

		Paired Differences					t	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Online Learning Learning Offline	-2,039	1,879	,216	-2,469	-1,610	-9,461	75	,000

Source: Results of Statistical Analysis of the SPSS 26 Program

Based on Table 4, t-test analysis between the online and offline learning sample groups, it is known that df = N-1 = 76-1 = 75, and from the SPSS output calculation results, the t-count value is -9.461. The value of tcount ≥ -ttable (-9.461 ≥ -1.992) means that H0 is rejected and Ha is accepted. Meanwhile, from the SPSS output results obtained a Sig (2-tailed) of 0.000. Because the sig (2-tailed) value is ≤ 0.05 (0.001 < 0.05), then Ho is rejected and Ha is accepted. From the average (Mean) it can also be seen that the average learning outcomes during offline learning scored higher than the average learning outcomes during online learning (84 ≥ 81.96). Therefore, it can be concluded that there is a significant difference in student learning outcomes between online and offline learning at SMAN 22 Bone.

The research results are based on descriptive and inferential statistical analysis which shows that student learning outcomes when doing online learning obtained a lower average score of 81.96 compared to the average score obtained by students when doing offline learning which obtained an average score of 81.96. The higher average is 84.

In this research, there were significant differences in student learning outcomes between online and offline learning at SMAN 22 Bone. The implementation of online learning carried out by students generally provides limitations for students in terms of interacting directly with educators and peers, causing students to think less critically. This is different from the implementation of offline learning carried out by students in general, creating interaction between educators and peers so that students are more active in discussing the learning material provided. This is reinforced by the theory presented (Hardiansyah et al., 2021) that "The implementation of online learning is not as effective as learning in the classroom, because students do not participate as actively as possible in the learning process. Meanwhile, implementing offline learning maximizes student involvement without the obstacles that students and teachers usually experience with online learning." In carrying out the learning process, the role of educators requires a better understanding of the character of students. Apart from that, it is necessary to create interaction between educators and students online and offline to achieve learning goals.

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