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Comparison of Learning Effectiveness Using Online and Offline Methods

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Abstract

The Covid-19 pandemic has put the world of education in a very difficult position. On the one hand, students are limited in their movements so as not to contract the virus, on the other hand, students must continue to learn so that there is no lost generation. As a solution, online learning methods are used. Along with the handling of the Covid-19 Pandemic which is considered successful, now the learning method is back using the offline method. However, there are institutions that continue to use online methods because they are considered more effective. This study aims to analyze the effectiveness of online and offline learning methods. The research method used was a survey by taking place at SMP Al Ittihadiyah Ciampea Bogor and a sample of 104 people. Data analysis using difference and percentage tests. The results showed that the achievement of learning targets, understanding of the material, student attendance, and comfort in learning were significantly different between online and offline. As for the presence of teachers and parental encouragement, there is no real difference between online and offline. Thus, offline learning is very effective compared to online learning.

Keywords: learning effectiveness; online methods; offline methods

I. Introduction

Education is very essential in the life of a nation. The development of science, technology, art and culture is a series that occurs due to education. Therefore, the progress of a nation is greatly influenced by the quality of education in the nation. As a rapidly developing nation, Indonesia strives to improve the quality of education of its population. Various efforts have been taken, from regulations on basic education obligations to the provision of various educational scholarship schemes. The development of local and national curricula, improving teacher competence with training, providing books and learning equipment, providing and updating learning tools and infrastructure, and improving the quality of school management have been introduced to various levels and educational institutions. However, these efforts have not yielded significant results.

Looking at World Population Review 2021 data, Indonesia is ranked 54th out of 78 countries included in the world education ranking. Indonesia is still inferior to neighboring Singapore (21), Malaysia (38), and Thailand (46). Although slightly ahead of the Philippines (55), Vietnam (66), and Myanmar (77). (1)

The Institute for Management Development (IMD) World Competitive Year book 2022 report said that Indonesia's competitiveness is currently in 44th position from 37th position in 2021. Quoted from the report, Tuesday (21/6/2022), this ranking is the lowest since the last 5 years or 2018. In 2018, Indonesia's competitiveness was ranked 43rd, then increased to 32nd in 2019. In 2020, Indonesia's competitiveness fell to 40th, before finally rising again to 37th in 2021. Then in 2022, the competitiveness level fell again to position 44. (2)

The Covid-19 pandemic that has hit the world and has an impact on various sectors of life, in-

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cluding education, has worsened the condition of education in Indonesia. The unpreparedness in facing the Covid-19 Pandemic which is so shocking in the world of education can be seen from various studies that evaluate the unpreparedness of the education sector during the Covid-19 period. (3) Ameli, et al found that online learning during the pandemic was less effective, mainly due to the lack of facilities and infrastructure and the unpreparedness of technology education. This unpreparedness has the potential to increase disparities or gaps in education in Indonesia. (4)

Along with the handling of the Covid-19 Pandemic which has entered an endemic period, now educational institutions have organized offline learning. However, there are still some institutions that continue to use online methods with various considerations.

This study aims to analyze the comparison of the effectiveness of online methods with offline methods. So that it can be known the feasible method to use.

II. Research Method

BeingThis research uses survey method. (5) The variables analyzed were achievement of learning targets, understanding of the material, student attendance, teacher attendance, comfort in learning, and parental encouragement. The locus of research is SMP Al Ittihadiyah located in Pasar Salasa, Ciampea, Bogor. The sample of the study was all 104 students. Thus, sampling uses saturated sampling. (6) The selected students have experienced learning using online and offline methods so that they can compare the two methods. Data analysis was carried out by percentage analysis and difference test (t-student). (7)

III. Result and Discussion

A. Research findings

The results of the study on 6 (six) variables, namely: (1) achievement of learning targets, (2) understanding of learning material, (3) teacher presence in learning, (4) student attendance in learning, (5) comfort in learning, and (6) parental encouragement can be presented as follows:

(1) Achievement of Learning Targets

The achievement of learning targets shows that offline methods are more effective than online methods. This can be seen from the percentage distribution contained in Figure 1.

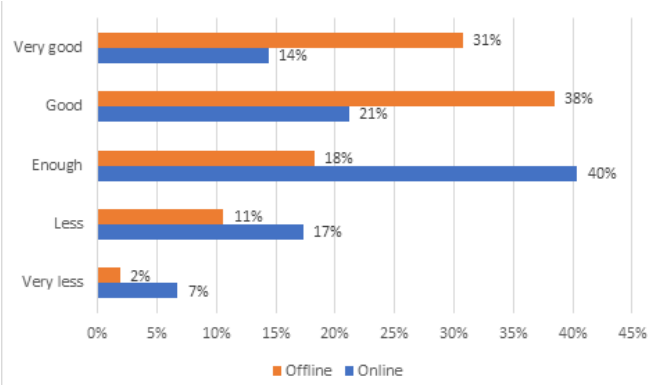

Figure 1. Achievement of Learning Target

In Figure 1. It can be seen that the learning target achieved through offline methods is good as much as 38% and very good as much as 31%. This is significantly different from the online method which states good as much as 21% and very good as much as 14%.

Based on the results of the difference test analysis, it is also seen that the t-statistical value is significantly different from the t-count, so it can be stated that the offline method is more effective in achieving learning targets.

Tabel 1. Difference Test Analysis of Variable Achievement of Learning Target

	online	*offline*
Mean	3,1923	3,8558
Variance	1,2054	1,0761
Observations	104,0000	104,0000
Pooled Variance	1,1407	
Hypothesized Mean Difference	0,0000	
df	206,0000	
t Stat	-4,4795	
P(T<=t) one-tail	0,0000	
t Critical one-tail	1,6523	
P(T<=t) two-tail	0,0000	
t Critical two-tail	1,9715	

(2) Understanding of Learning Materials

Understanding of learning materials shows that offline methods are more effective than on-

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line methods. This can be seen from the percentage distribution contained in Figure 2.

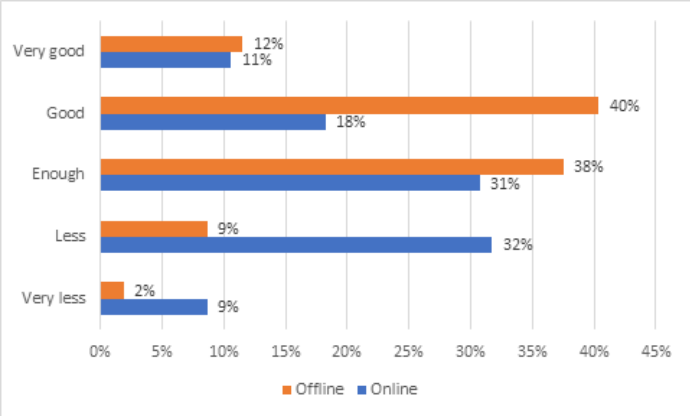

Figure 2. Understanding of Learning Materials

In Figure 2. It can be seen that the understanding of learning material achieved through offline methods is good as much as 40% and very good as much as 12%. This is significantly different from the online method which states good as much as 18% and very good as much as 11%.

There is a very significant percentage difference allegedly because in offline learning activities, the interaction between students and teachers in learning is not monotonous. This is different from online learning which is a lot in front of the computer.

In addition, based on the results of the difference test analysis, it can be seen that between online and offline learning there are real differences, so offline learning is more effective than online learning.

Tabel 2. Difference Test Analysis of Variable Understanding of Learning Materials

	online	*offline*
Mean	2,903846154	3,509615385
Variance	1,272218073	0,776605676
Observations	104	104
Pooled Variance	1,024411875	
Hypothesized Mean Difference	0	
df	206	
t Stat	-4,315902052	
P(T<=t) one-tail	1,23371E-05	
t Critical one-tail	1,652284144	
P(T<=t) two-tail	2,46741E-05	
t Critical two-tail	1,971546669	

(3) Teacher Presence in Learning

Unlike the previous two variables, the variable of teacher attendance in learning shows that it is not too different between offline methods and online methods. In the offline method, as many as 11% are very good and 25% are good. This is no different from online methods which state 9% very good and 26% good. This is as can be seen in Figure 3.

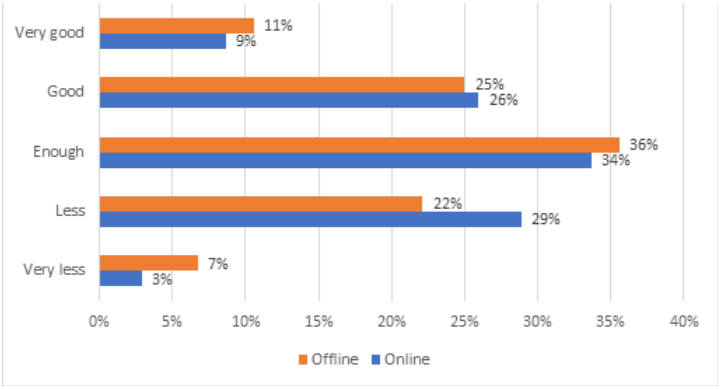

Figure 3. Teacher Presence in Learning

Based on the results of the difference test analysis, it can be seen that the t-statistic value is not significantly different from the t-count, as stated in Table 3.

Tabel 3. Difference Test Analysis of Variable

	online	*offline*
Mean	3,086538462	3,105769231
Variance	1,011855863	1,163461538
Observations	104	104
Pooled Variance	1,087658701	
Hypothesized Mean Difference	0	
df	206	
t Stat	-0,132969492	
P(T<=t) one-tail	0,447173653	
t Critical one-tail	1,652284144	
P(T<=t) two-tail	0,894347306	
t Critical two-tail	1,971546669	

(4) Student Attendance in Learning

The presence of students in learning shows that offline methods are more effective than online methods. This can be seen from the percentage distribution contained in Figure 4.

In figure 4, it can be seen that the difference in student attendance in learning is very significant with very good categories that differ 2x, namely offline 27% and online 13%. In contrast to the attendance of students in the good category, the difference is not far away, namely offline 35% and online 27%.

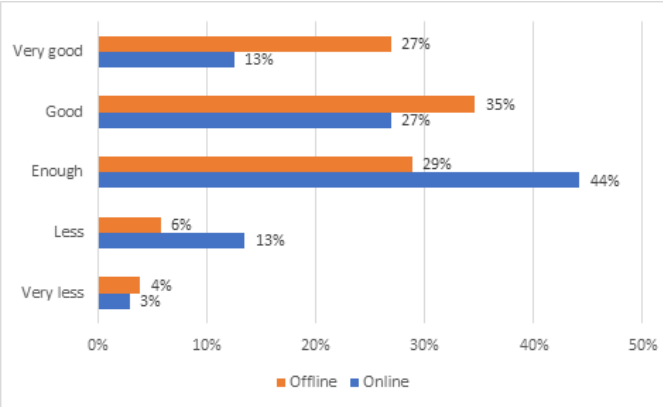

Figure 4. Student Attendance in Learning

In addition, based on the results of the difference test analysis, it can be seen that the value of t-statistics is significantly different from t-count, so it can be concluded that student attendance in offline learning is better than online. as set out in Table 4.

Tabel 4. Difference Test Analysis of Variable Student Attendance in Learning

	online	*offline*
Mean	3,326923077	3,75
Variance	0,921209858	1,082524272
Observations	104	104
Pooled Variance	1,001867065	
Hypothesized Mean Difference	0	
df	206	
	-	
t Stat	3,048006993	
P(T<=t) one-tail	0,001302743	
t Critical one-tail	1,652284144	
P(T<=t) two-tail	0,002605485	
t Critical two-tail	1,971546669	

(5) Comfort in Learning

As many as 29% of students stated that the convenience of offline learning was very good and only 16% stated that online learning was very good. Thus, convenience in learning by using offline methods is more effective than online methods. This can be seen from the percentage

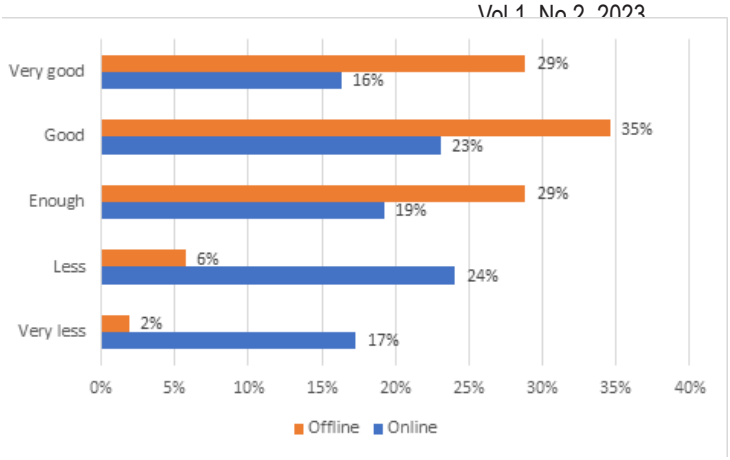

Figure 5. Confort in Learning

In addition, based on the results of the difference test analysis, it can be seen that the t-statistic value is significantly different from the t-count, as stated in Table 5.

Tabel 5. Difference Test Analysis of Variable Confort in Learning

	online	*offline*
Mean	2,971153846	3,826923077
Variance	1,834111277	0,96004481
Observations	104	104
Pooled Variance	1,397078043	
Hypothesized Mean Difference	0	
df	206	
	-	
t Stat	5,220931624	
P(T<=t) one-tail	2,16866E-07	
t Critical one-tail	1,652284144	
P(T<=t) two-tail	4,33732E-07	
t Critical two-tail	1,971546669	

(6) Parental Encouragement in Learning

Parental encouragement in learning shows that it is not too different between offline methods and online methods. In the offline method, as many as 24% are very good and 37% are good. This is no different from online methods which state 29% very good and 37% good. Although there is a percentage variation in the category is very good, but basically, parents always give encouragement to their children, both in offline and online methods. This can be seen from the percentage distribution contained in Figure 6.

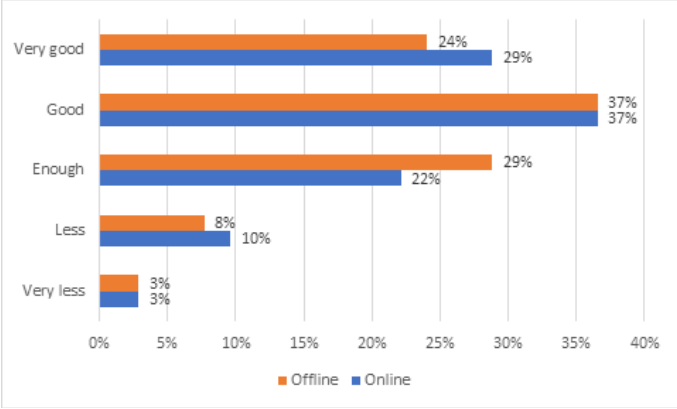

Figure 6. Parental Encouragement in Learning

Based on the results of the difference test analysis, it can be seen that the t-statistic value is not significantly different from the t-count, as stated in Table 6.

Tabel 6. Difference Test Analysis of Variable Parental Encouragement in Learning

	online	offline
Mean	3,788461538	3,711538462
Variance	1,119865571	1,022778193
Observations	104	104
Pooled Variance	1,071321882	
Hypothesized Mean Difference	0	
df	206	
t Stat	0,535917985	
P(T<=t) one-tail	0,296296702	
t Critical one-tail	1,652284144	
P(T<=t) two-tail	0,592593403	
t Critical two-tail	1,971546669	

IV. Conclusion

The conclusion of this study is that the achievement of learning targets, understanding of learning materials, student presence in learning, comfort in learning, and parental encouragement turned out to be significantly different between online methods and offline methods. As for the presence of teachers, there is no real difference between online and offline. Thus, offline learning is very effective compared to online learning.

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