ISSN 2355-0082

The Effect of Using the Al-Mumtaz Application on Student Learning Outcomes UIN Mahmud Yunus Batusangkar

Rahmat Hidayat[1], Munirul Abidin[2], Danial Hilmi[3]
[1,2,3] State Islamic University of Maulana Malik Ibrahim Malang, Indonesia
[1] Rrahmad667@gmail.com, [2] munirul@bio.uin-malang.ac.id, [3] Danialhilmi@uin-malang.ac.id

Accepted 18 May 2024
Approved 15 November 2024

***Abstract*— In today's digital era, the utilization of technology in the learning process is becoming increasingly important. Online learning applications such as Al-Mumtaz have the potential to overcome the limitations of conventional learning methods and increase student interest and motivation to learn. However, the effect of using the Al-Mumtaz application on student learning outcomes at Mahmud Yunus State Islamic University Batusangkar has not been widely studied. This study aims to identify and analyze the effect of using the Al-Mumtaz application on student learning outcomes at UIN Mahmud Yunus Batusangkar and provide evidence-based recommendations regarding the effectiveness of digital learning applications. This study used a quantitative pre-experiment design with a sample of Arabic language education students who used the Al-Mumtaz application. Data were collected through initial and final test, and analyzed using validity, reliability, normality, homogeneity, and paired t tests. The analysis showed that 10 out of 15 questions were valid and reliable. The data were normally distributed and met the assumption of homogeneity of variance. The paired t-test revealed a significant mean difference between the pre-test (62.50) and post-test (89.00) scores after the use of Al-Mumtaz application, with an increase of 23.50.The use of Al-Mumtaz application in Arabic language learning at UIN Mahmud Yunus Batusangkar provides significant results.This study confirms the positive effect of Al-Mumtaz application on student learning outcomes and highlights the importance of technology in improving the effectiveness of learning in the academic environment.**

***Index Terms*— Al-Mumtaz App; Learning Outcomes; Students of UIN Mahmud Yunus Batusangkar**

I. INTRODUCTION

In the rapidly growing digital era, information and communication technology (ICT) has become an inseparable part of human life. One form of ICT implementation in education is the use of digital learning applications [1], [2]. Al-Mumtaz application is one of the online learning platforms developed by Mahmud Yunus State Islamic University (UIN) Batusangkar. This application is designed using Kodular web to facilitate the learning process and assist students in improving their learning outcomes [3].

A problem often faced in the learning process is the lack of effectiveness of conventional learning methods. Traditional learning methods that rely on face-to-face meetings and lectures are often less attractive to students, especially for millennials who are accustomed to digital technology [4]. This can lead to a lack of interest and motivation to learn, as well as decreased student learning outcomes.

In addition, the limited time and resources owned by lecturers and educational institutions are also a problem that must be faced. Lecturers often find it difficult to provide learning materials that are up-to-date and relevant to student needs, while educational institutions are faced with the challenge of providing adequate facilities and infrastructure to support an effective learning process.

This study aims to analyze the effect of using the Al-Mumtaz application on the learning outcomes of UIN Mahmud Yunus Batusangkar students. By using this online learning application, it is expected to overcome the problems faced in the conventional learning process. Al-Mumtaz application can be an effective solution in increasing student interest and motivation to learn, as well as facilitating more interactive and interesting learning.

The discussion of the effect of using the Al-Mumtaz application on the learning outcomes of UIN Mahmud Yunus Batusangkar students is very important to do. This is because the results of this study can provide an overview of the effectiveness of online learning applications in improving student learning outcomes. In addition, this research can also be a reference for other educational institutions in developing and implementing online learning applications that are in accordance with student needs and the latest technological trends.

By utilizing the Al-Mumtaz application, it is expected to overcome the problems faced in the conventional learning process. This application can provide up-to-date, interactive, and interesting learning materials for students. In addition, this application can also facilitate flexible learning and is not limited by

time and place, so that students can learn anytime and anywhere according to their needs.

The rapid development of information and communication technology (ICT) has brought significant changes in various aspects of life, including in education [5]. Educational institutions are required to be able to follow this development and utilize technology to improve the quality of learning. One of the efforts made by Mahmud Yunus State Islamic University (UIN) Batusangkar is to develop an online learning application called Al-Mumtaz.

Research on the effect of using the Al-Mumtaz application on student learning outcomes at UIN Mahmud Yunus Batusangkar is important to do. The main reason underlying this research is the gap between the needs of students in accessing more interactive and interesting learning resources with conventional learning methods that are still widely used in educational institutions [6]. Traditional learning methods are often considered ineffective in increasing students' interest and motivation to learn, especially for millennials who are accustomed to digital technology.

This study contributes to filling this gap by evaluating the effectiveness of Al-Mumtaz in improving student learning outcomes. Online learning applications such as Al-Mumtaz have the potential to be a solution to overcome the limitations of conventional learning methods. By utilizing digital technology, this application can provide learning materials that are more interactive, interesting, and easily accessible to students.

Thus, research on the effect of using the Al-Mumtaz application on the learning outcomes of UIN Mahmud Yunus Batusangkar students is important to do. This research is expected to contribute to filling existing gaps and providing solutions in improving the quality of learning through the use of digital technology. Seeing from the introduction and the problems above, the researcher wants to ask questions about this research, namely whether there is an effect of using the Al-Mumtaz application on the learning outcomes of Mahmud Yunus Batusangkar State Islamic University students.

The main objective of this study is to identify and analyze the effect of using Al-Mumtaz application on the learning outcomes of UIN Mahmud Yunus Batusangkar students. This study aims to assess whether the implementation of educational technology such as the Al-Mumtaz app can effectively improve students' concept understanding, learning motivation, and ultimately learning outcomes. In addition, this study also aims to provide evidence-based recommendations to the university regarding the effectiveness of digital learning applications and learning strategies that can be integrated to maximize the educational potential of these digital tools in the academic environment.

II. METHOD

This study uses a quantitative Pre-x periment design to measure the effect of using the Al-Mumtaz application on student learning outcomes at Mahmud Yunus Batusangkar State Islamic University [7]. This design was chosen because it allows researchers to make objective and systematic measurements of the variables studied, namely the use of the Al-Mumtaz application (independent variable) and student learning outcomes (dependent variable) [8]. The sample of this study consists of selected Arabic language education students who use Al-Mumtaz application in their learning process. Sampling was done using Pre-x periment technique to ensure equal representation of each student, taking into account demographic factors such as semester.

The necessary data were collected using two types of instruments: first, tests in the form of multiple choice exams using google from. second, Field documentation on students of Mahmud Yunus Islamic University Batusangkar. To determine whether there is a significant effect of using the Al-Mumtaz application on student learning outcomes, inferential analysis such as the independent t test is used. The independent t test is used to compare the average learning outcomes between students who use the Al-Mumtaz application and those who do not. All data analysis will be assisted by using statistical software such as SPSS, which allows researchers to conduct more in-depth analysis and produce reliable findings [9], [10].

III. RESULT AND DISCUSSION

A. Validity Test

This study uses descriptive quantitative methods, the sample used in this study was Arabic language education students in the second semester of Mahmud Yunus State Islamic University Batusangkar. Through the Post test research instrument, namely the Al-Mumtaz application to improve the learning outcomes of Arabic language education students.

The last job is statistical calculation and reporting of results. The test data that has been obtained from respondents is then tabulated into a table that can be filled in all values and a number of data from the response data. Tabulation of this data is made to facilitate subsequent statistical calculations, namely to determine the trend value. Furthermore, the results of the calculations that have been analyzed are outlined in the results of the research discussion.

The basis for decision making in the validity test is: First, if Rhitung> Rtabel, then the question items in the question are declared valid. Second, if the value of Rhitung < Rtabel, then the question item in the question is declared invalid. The following data is obtained from the results of filling out the test questions that have been answered by respondents:

TABLE I. VALIDATION

Question	R-Table	R-Calculate	Description
1.	0,514	0,662	Valid
2.	0,514	0,525	Valid
3.	0,514	0,876	Valid
4.	0,514	0,525	Valid
5.	0,514	0,876	Valid
6.	0,514	0,344	Invalid
7.	0,514	0,025	Invalid
8.	0,514	0,306	Invalid
9.	0,514	0,123	Invalid
10.	0,514	0,876	Valid
11.	0,514	0,662	Valid
12.	0,514	0,525	Valid
13.	0,514	0,876	Valid
14.	0,514	0,525	Valid
15.	0,514	0,306	Invalid

From the results of the validity of the questions that have been tested using SPSS to 20 respondents, it turns out that 10 out of 15 questions are declared valid.

The data presented consists of 15 lines of information regarding the validity of the questions based on the comparison of the R table value with the R count. The R table value given is 0.514, which is the threshold for determining the validity of a question. A question is considered valid if its calculated R value is higher than the R table, and invalid if it is lower. Of the 15 questions analyzed, 10 of them had R values that exceeded R table, so they were categorized as valid. This indicates that the majority of items have a strong correlation with what the test is measuring and are considered suitable for further use.

On the other hand, there were 5 questions that did not meet the validity criteria as their R calculated values were below the R table value. These questions had much lower R values, such as in questions 6 (0.344), 7 (0.025), 8 (0.306), and 9 (0.123), as well as question 15 (0.306) which showed an R value that was quite close to the R table but still below it. These questions require further evaluation or improvement as their low correlation may indicate that they are not effective in measuring the ability or knowledge that the test is supposed to measure. This requires adjustments to the questions to improve their validity, or possibly replacing the questions with ones that have a higher correlation to the overall material being tested.

B. Reliability Test

The reliability test is used to determine the consistency of the measuring instrument, whether the measuring instrument used is reliable and remains consistent if the measurement is repeated. The test used in this study used the Cronbach alpha technique. Instrument reliability is considered reliable if it has a reliability coefficient> Rtabel. This means that the measurement is relatively consistent if the measurement is repeated.

The basics of decision making: First, if Cronbach Alpha is greater than Rtabel = real. Second, if Cronbach Alpha is smaller than Rtabel = not real. The reliability test of the test questions in this study is using the SPSS version 26 Cronbach's alpha program, as shown in the table below:

TABLE II. B. RELIABILITY

Reliability Statistics

Cronbach's Alpha	*N of Items*
.803	15

From the above calculations, it is known that the reliability index value is 0.803> 0.514 so that the research instrument is declared reabel. Thus the test question can be used as a research instrument.

The reliability analysis of the pre-test and post-test questions used to measure the effectiveness of the Al-Mumtaz application in an educational context. In this study, the resulting Cronbach's Alpha was 0.803 out of 15 items tested. This value indicates that the questionnaire has a high level of reliability, so it can be considered consistent in measuring what it is intended to measure.

This high reliability of the questionnaire is important in the context of educational research, as it ensures that the variability in the measured learning outcomes is due more to the effect of using the educational app than to measurement error. The internal consistency shown through Cronbach's Alpha values of more than 0.8 supports the overall validity of the instruments used in the study. Thus, the results obtained can be used as a strong basis for making conclusions about the effect of the Al-Mumtaz application on

student learning outcomes at UIN Mahmud Yunus Batusangkar.

C. Normality Test

The normality test is carried out to find out whether the sample under study is normally or abnormally distributed using the shapiro wilk test. In this normality test, researchers used the SPSS version 25 program with the following data:

TABLE III. NORMALITY

Tests of Normality

Kelompok		Kolmogorov-Smirnova			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Hasil	PreTest	.165	20	.158	.951	20	.379
	PostTest	.178	20	.098	.961	20	.572

a. Lilliefors Significance Correction

The basis for decision making in the normality test is: First if the significant value <0.05 then the data is not normally distributed. Second if the significant value > 0.05 then the research data is normally distributed.

Based on the normality test results presented, we see that both groups of data, PreTest and PostTest, show a normal distribution. This analysis uses two methods, namely Kolmogorov-Smirnov and Shapiro-Wilk. For the PreTest data, the Shapiro-Wilk test results gave a significance value of 0.379, which is much greater than the alpha significance level of 0.05. This indicates that the PreTest data does not deviate significantly from the normal distribution. Something similar is seen in the PostTest data, where the Shapiro-Wilk test gives a significance value of 0.572, which again confirms that the data follows a normal distribution. The fact that both sets of data are normal is very important in the context of advanced statistical analysis, allowing the use of various parametric techniques that require the assumption of normality.

With this normality assumption confirmed, researchers can be more confident in applying statistical analyses that assume normality of data distribution, such as ANOVA or linear regression. The reliability of the conclusions resulting from such analyses also increases because the basic assumptions have been met. Furthermore, researchers may be interested in exploring the differences between PreTest and PostTest scores using parametric t-tests that compare the means of two independent or paired groups, depending on the study design. This analysis may provide useful insights into the effectiveness or impact of the intervention implemented between the two testing times.

D. Homogeneity Test

The homogeneity test is a test conducted to determine that two or more groups of sample data come from populations that have the same or homogeneous variants in this homogeneous test the researcher uses the SPSS 26 program, with the following data:

TABLE IV. HOMOGENITY

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Hasil	Based on Mean	3.545	1	38	.067
	Based on Median	2.317	1	38	.136
	Based on Median and with adjusted df	2.317	1	35.935	.137
	Based on trimmed mean	3.309	1	38	.077

The basics of decision making in the homogeneity test are: First, when the significant value <0.05, it can be decided that the variance in the two groups is not homogeneous. Second, when the significant value> 0.05, it can be decided that the variance in the two groups is homogeneous. Based on the table of research results above, the significant value obtained is 0.077, which is more than 0.05 and it can be concluded that the research data is homogeneous.

The results of the Test of Homogeneity of Variance conducted using Levene's statistics showed that the

variances between the groups were not significantly different at the 0.05 level of significance. In the test based on the mean, the significance value was 0.067, indicating that there was no significant difference in variance between the tested groups. Similar results were found in the tests based on the median and median with adjusted degrees of freedom, with significance values of 0.136 and 0.137 respectively, as well as in the test based on the trimmed mean with a significance value of 0.077. All this confirms that the assumption of homogeneity of variance is met, which is important for further statistical analyses that require this assumption, such as analysis of variance (ANOVA).

Ensuring homogeneity of variance is important because it allows the use of statistical techniques that assume similarity of variance between groups. Since there is no evidence to suggest a significant difference in variance, researchers can proceed with analyses that combine data from different groups without the need to adjust for unequal variances. This eases interpretation of the results and reduces the need to apply more complex statistical techniques that would be required if the variances between groups were significantly different. Conclusions drawn from further analysis using ANOVA or similar techniques will, therefore, be grounded in strong statistical preconditions, resulting in more reliable findings.

E. Paired sample t-test

The paired t-test is a test of paired sample data, to determine whether there is a difference in the mean or average of the two paired groups.

TABLE V. PAIRED SAMPLE T-TEST

Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	*Std. Deviation*	*Std. Error Mean*	*Lower*	*Upper*	*t*	*df*	*Sig. (2-tailed)*
Pair 1	*Pre-test -post-test*	-26.500	8.751	1.957	-30.596	-22.404	-13.543	19	.000

The basics of decision making in the paired sample t-test are: First, if the significant value <0.05 then H0 is rejected and Ha is accepted. Second, if the significant value> 0.05 then H0 is accepted and Ha is rejected.

Research hypothesis: if the hypothesis is H0, then: There is no average difference between the use of Al-Mumtaz application and student learning outcomes. If the hypothesis shows Ha, then: there is an average difference between the use of the Al-Mumtaz application and student learning outcomes.

Based on the table above, a significant value of 0.000 <0.05 is obtained, it can be concluded that there is an average difference between the use of the Al-Mumtaz application and student learning outcomes.

From the explanation above, the researcher concludes that there is an effect of the Al-Mumtaz application on student learning outcomes as seen from the significant value above in Arabic language learning in the Arabic language education department of Mahmud Yunus Batusangkar State Islamic University in the second semester.

TABLE VI. PAIRED SAMPLES STATISTICS

Paired Samples Statistics

		Mean	*N*	*Std. Deviation*	*Std. Error Mean*
Pair 1	*Pretes*	62.50	20	11.642	2.603
	Postes	89.00	20	8.522	1.906

The table above is to see more clearly the average learning outcomes before and after using the Al-Mumtaz application. The average pre-test results 62.50 and post-test 89.00 increased by 26.50. It can be stated that there is an increase after the use of the Al-Mumtaz application for Arabic language learning for second semester students specifically in the mufradat learning section.

IV. CONCLUSION

The use of Al-Mumtaz application in Arabic language learning at Mahmud Yunus State Islamic University Batusangkar provides significant results.

The validity and reliability of the research instruments were confirmed, with 10 out of 15 questions declared valid and high Cronbach's Alpha values. PreTest and PostTest data distribution showed normality, while the homogeneity of variance test met the assumptions of statistical analysis. The results of the analysis showed significant mean differences, confirming the positive influence of the Al-Mumtaz application on student learning outcomes. This conclusion highlights the importance of technology in improving the effectiveness of Arabic language learning in such academic environments.

ACKNOWLEDGMENT

This work was accompanied by prof munirul abidin in the field of quantitative research at Maulana Malik Ibrahim State Islamic University Malang.

REFERENCES

[1] I. Adnyana, *PENGEMBANGAN MEDIA PEMBELAJARAN BERBASIS APLIKASI KODULAR MENDUKUNG MODEL PEMBELAJARAN MATEMATIKA BERBASIS KOLABORASI …*. repo.undiksha.ac.id, 2023. [Daring]. Tersedia pada: https://repo.undiksha.ac.id/id/eprint/14169

[2] F. Andriawan, *Pengembangan mobile learning berbasis kodular pada mata pelajaran teknologi perkantoran untuk meningkatkan kemandirian belajar (studi pada peserta didik …*. mulok.lib.um.ac.id, 2021. [Daring]. Tersedia pada: http://mulok.lib.um.ac.id/index.php?p=show_detail&id=110545

[3] N. Atika, *Pengembangan media pembelajaran berbasis Android dengan Kodular untuk meningkatkan hasil belajar siswa kelas VIII materi statistika*. etheses.uingusdur.ac.id, 2023. [Daring]. Tersedia pada: http://etheses.uingusdur.ac.id/id/eprint/6515

[4] N. M. Sueni, "Metode, Model dan Bentuk Model Pembelajaran (Tinjauan Pustaka)," *Wacana Maj. Ilm. Tentang Bhs. Sastra Dan Pembelajarannya*, vol. 19, no. 1, hlm. 3–3, 2019.

[5] A. Awaluddin, "Evaluasi Pembelajaran Bahasa Arab Berbasis Informasi, Komunikasi, Dan Teknologi," no. Query date: 2024-03-12 12:33:48, 2023, [Daring]. Tersedia pada: http://repositori.iain-bone.ac.id/id/eprint/1542

[6] S. Suhardi, N. Nevrita, dan D. Sarkity, *Pengembangan E-Modul Praktikum Berbasis Kodular Sebagai Sumber Belajar Serta Panduan Dalam Pelaksanaan Praktikum Mikrobiologi SMK*. repositori.umrah.ac.id, 2023. [Daring]. Tersedia pada: http://repositori.umrah.ac.id/id/eprint/5842

[7] M. S. Priadana dan D. Sunarsi, *Metode Penelitian Kuantitatif*. Pascal Books, 2021.

[8] D. D. Unaradjan, *Metode penelitian kuantitatif*. Penerbit Unika Atma Jaya Jakarta, 2019.

[9] A. England, "Quantitative and qualitative research methods," *Res. Med. Imaging Radiat. Sci.*, no. Query date: 2023-11-30 23:13:48, hlm. 71–96, 2022, doi: 10.1007/978-3-030-79956-4_5.

[10] R. Ewing, *Basic quantitative research methods for urban planners*. 2020, hlm. 328. doi: 10.4324/9780429325021.