

The Impact of Using *Android Based Tests* on Student Learning Outcomes in Islamic Religious Education Lessons

Amiq Khoirul Fahmi

UIN K.H. Abdurrahman Wahid Pekalongan

Email: amiqkhoirulfahmi@gmail.com

Abstract

*This study aims to determine how much the Android Based Test affected the students' learning outcomes at SMP Negeri 3 Bojong Pekalongan. This study employs a quantitative technique in field research. Thirty-two students from class VIIA at SMP Negeri 3 Bojong in the Pekalongan Regency served as the sample for this study. A questionnaire with Likert scale measures was employed as the data gathering tool. The study's findings demonstrate: 1) The average score of 57 on the Android Based Test implementation questionnaire, which falls between 54 and 59 on the scale, indicates that the Android Based Test implementation is in the good category. 2) The average student learning outcomes of 88, which falls within the range of less than 85 to 89, indicates that the learning results are in the good category. 3) according to the *t* test, it is discovered The implementation variable for the Android Based Test has a significance level of 0.004. The computed *t* value is $3.082 > 2.042$, and the significant value is $0.004 < 0.05$. Thus, it can be said that there is a considerable impact of the Android Based Test implementation variable on student learning results.*

Keywords: android based test, learning outcomes, Islamic education

A. Introduction

The process of achieving educational goals cannot be separated from the various problems that exist in education. For example, students' learning outcomes are poor. This is caused by two factors: internal factors, which include student attitudes, student interests, student motivation or enthusiasm, and student concentration. External factors involve the role of the teacher as a mentor, learning facilities, the assessment process, learning media, and the student's environment both inside and outside school. (Darmadi, 2012)

Learning outcomes include changes in overall behaviour, not just parts of human potential. (Agus Suprijono, 2013) In Tohirin's book "Psychology of Learning Islamic Religious Education", learning outcomes are defined as what students achieve after teaching and learning activities. (Tohirin, 2011) Good learning outcomes can be achieved only if all elements are fulfilled, such as learning approaches, school facilities, and assessment policies used to measure students' abilities. Assessment policies such as examination or test activities are a way to measure student abilities. (nana sudjana, 2008)

A world where information and communication technology (ICT) is developing very quickly has brought many new changes to various fields, including education. This progress has made it easier for educators and education personnel to carry out the learning process and school administration. One of the advantages of using ICT in learning is the assessment process of educational institutions. (Purwanto, 2014)

Computer-assisted assessment Initially in the field of psychiatric counselling, computer-assisted assessment was created to help patients with psychological disorders. Computers were used to register patients. In addition, a pretest is conducted on the registered patients to evaluate the level of psychological disorders. After the patient completes the task, the results of this pretest are automatically output. (Pakpahan, 2016)

Previously, exams such as daily tests, mid-semester exams, and end-of-semester exams were still conducted conventionally using paper as an examination tool. However, in the current 4.0 era, the field of education has witnessed the rapid development of information and communication technology. With this technological advancement, evaluation systems such as CBT emerged. However, then came a new innovation, ABT, which is an android-based exam. In terms of purpose and usefulness, CBT and ABT are the same. The only difference is the media used, which is a computer, while ABT uses Android. (K Karfoindo, 2017)

"*Computer-based test* is a computer-based evaluation system that aims to assist teachers in carrying out evaluations, both scoring, test implementation and the effectiveness and efficiency of implementation," (Novrianti, 2014) As quoted by Adi Pratomo and Ronny Mantala, Suprananto stated that "Computer-Based Examination System is an examination system using computer equipment as a medium for presenting questions and answers where the implementation of the exam is also carried out directly"(Mantala, 2016). What is meant directly is online, semi-online, and offline. "CBT is a computerised exam that can be set and programmed as needed," (Bahri, 2012).

The Android-based exam innovation allows educators to more easily assess learning outcomes. Android-based exams have an advantage in the quality of their speed in processing assessment results. In Android Based Test assessment, the assessment system will immediately record the results of student questions with more organised data. (Nugroho, 2018)

It is clear that scientific advancement has changed many things, including education. With these technological advances, evaluations such as Computer Based Test (CBT) or Android Based Test (ABT) emerged. (K Karfoindo, 2017)

The observation results show that SMP N 3 Bojong is the first school at the junior high school level in Pekalongan district to implement an ABT-based evaluation system. The application of ABT is based on data on students who already have an android by 95%. Thus, it is expected that the android owned by students will be useful. In addition, ABT is needed because of future demands that require increased student abilities in the world of science and technology.

The purpose of Android Based Test is used to save costs and time, reduce human error (HR), and make students more honest and independent. (kasmawi, Mawarni, Wati, 2018) However, there are some problems with the implementation of the android-based evaluation system at SMP N 3 Bojong. For example, when ABT is running, students often miss the test so they need to ask the admin for a new token. In addition, the inadequate network and difficult signal in the classroom make ABT ineffective because students only think about how to quickly complete the exam so as not to lose distance.

Therefore, this android-based evaluation system poses new problems for students, especially when they evaluate their learning outcomes, which shows that they are not ready to adapt to the programme. Therefore, further research is needed on how the implementation of ABT impacts learning outcomes at SMP N 3 Bojong.

B. Methods

This field research uses a quantitative approach. This study involved 32 students from class VIIA of SMP Negeri 3 Bojong, Pekalongan Regency to be sampled. Purposive sampling was the sampling method used. However, a questionnaire with a Likert scale was used to collect data. The data analysis involved the use of normality test, and linearity test.

C. Discussion

1. Use of *Android Based Test* at SMP Negeri 3 Bojong, Pekalongan Regency

Data were collected from a questionnaire containing 18 items of questions distributed to 32 participants, including students of class VIIA at SMP Negeri 3 Bojong Pekalongan Regency, with 4 answer options. The results of the *Android-based* test implementation questionnaire totalled 18 items, with alternative scores as follows:

- (a) Strongly agree answers were given a score of 4
- (b) Agree answer is given a score of 3
- (c) Disagree answer is given a score of 2
- (d) Strongly Disagree answer is given a score of 1

The data is then presented from the lowest score to the highest score. The Android-based implementation questionnaire score data is as follows:

42	43	44	45	49	50	51	51	52
52	54	55	55	55	55	56	58	60
60	60	61	62	63	64	65	66	66
68	68	70						

From the data can be known :

Highest Score: 70

Lowest Score: 42

Total: 1.827

Furthermore, descriptive analysis was carried out with the following steps:

a. Determining the Mean

$$M = \frac{X}{n} = \frac{1.827}{32} = 57.0937 \text{ rounded to } 57$$

b. Determine the range (R) with the formula:

$$\begin{aligned} R &= X_{\max} - X_{\min} \\ &= 70 - 42 \\ &= 28 \end{aligned}$$

c. Determine the number of interval classes (K) with the formula:

$$\begin{aligned} K &= 1 + 3.3 \log n \\ &= 1 + 3.3 \log 32 \\ &= 1 + 4,9669 \\ &= 5.9669 \text{ rounded to } 6 \end{aligned}$$

d. Calculate the length of the Interval class (I) with the formula:

$$I = \frac{R}{K} = \frac{28}{6} = 4.66 \text{ rounded to } 5$$

After knowing the interval values, a frequency distribution table is created according to the interval values:

Table 1.1
Frequency Distribution Score of *Android Based Test* Questionnaire at SMP
Negeri 3 Bojong

No.	I	F	Category
1.	66 - 70	4	Very, very good
2.	60 - 65	6	Very good
3.	54 - 59	7	Good
4.	48 - 53	9	Less good
5.	42 - 47	5	Very poor
Total		32	

With an average score of 57 in the interval 54-59, the questionnaire on the use of *Android Based Test* for students in PAI class VIIA at SMP Negeri 3 Bojong Pekalongan Regency is in the Good category, as shown in the table above.

2. Student Learning Outcomes of Islamic Religious Education Lessons

This data is obtained from the report on the learning outcomes of class VIIA students on Islamic Religious Education lessons during the PTS odd semester of the 2023/2024 academic year.

Student learning outcomes were obtained with alternative scores as follows:

- (a) Strongly agree answers were given a score of 4
- (b) Agree answer is given a score of 3
- (c) Disagree answer is given a score of 2
- (d) Strongly Disagree answer is given a score of 1

Furthermore, the data on the learning outcomes of PAI students in class VIIA at SMP Negeri 3 Bojong Pekalongan Regency will be presented in a frequency distribution table with scores from lowest to highest. The student learning outcomes are as follows:

75 76 78 78 78 80 80 84 84 85
 85 86 86 88 88 88 90 90 90 92
 92 92 92 92 92 94 94 96 96 96
 98 98

From the data can be known :

Highest Score: 98

Lowest Score: 75

Total: 2.813

Furthermore, descriptive analysis was carried out with the following steps:

a. Determining the Mean

$$M = \frac{X}{n} = \frac{2.813}{32} = 87.906 \text{ rounded to } 88$$

b. Determine the range (R) with the formula:

$$\begin{aligned} R &= X_{\max} - X_{\min} \\ &= 98 - 75 \\ &= 23 \end{aligned}$$

c. Determine the number of interval classes (K) with the formula :

$$\begin{aligned} K &= 1 + 3.3 \log n \\ &= 1 + 3.3 \log 32 \\ &= 1 + 4,9669 \\ &= 5.9669 \text{ rounded to } 6 \end{aligned}$$

d. Calculate the length of the Interval class (I) with the formula:

$$I = \frac{R}{K} = \frac{23}{6} = 3.8 \text{ rounded to } 4$$

After knowing the interval values, a frequency distribution table is created according to the interval values:

Table 2.1
 Frequency Distribution of Learning Outcomes of Class VIIA Students at SMP
 Negeri 3 Bojong

No.	I	F	Category
1.	95 - 98	5	Very, very good
2.	90 - 94	11	Very good
3.	85 - 89	7	Good
4.	80 - 84	4	Less good
5.	75 - 79	5	Very poor
Total	32		

Student learning outcomes in PAI subjects in class VIIA at SMP Negeri 3 Bojong Pekalongan Regency are in the good category, as shown in the table above. The average PTS score is 88 with an interval of 85-89.

3. The Impact of Using *Android Based Test* on Student Learning Outcomes in Islamic Religious Education Lessons

Researchers used simple linear regression analysis to test the hypothesis that "There is a significant impact between the use of *Andorid Based Test* on student learning outcomes in Islamic Religious Education".

The results of the simple linear regression analysis conducted with the SPSS V.26 programme are shown below.

Table 3.1
Simple Linear Regression Test (T Test)

Coefficients^a

Model	Unstandardised Coefficients		Standardised Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	64.093	7.797		8.221	.000
ABT	.417	.135	.490	3.082	.004

a. Dependent Variable: Learning Outcome

Based on the data analysis carried out in the table above, the similarities of this study are:

$$Y = a + bX \qquad Y = 64,093 + (0.490X)$$

Description:

- If *Android Based Test* (X) receives a value of zero, then learning outcomes (Y) receive a value of 64.093, according to the constant value.
- The regression coefficient of the *Android Based Test* Implementation variable (X) of 0.490 indicates that the Islamic Religious Education learning outcomes variable can increase by 0.490 if the unit of the *Android Based Test* Implementation variable increases while other factors remain. This shows that there is a positive or unidirectional relationship between the Implementation of *Android Based Test* and Islamic Religious Education learning outcomes.

The table has a significance level of 0.004, and the calculated t value is 3.082. The comparison between the table t value and the calculated t value is done using this formula:

$$\alpha = 0,05 \qquad Df = (n-k) = (32-2) = 30$$

Description:

: significance level

D : Degrees of freedom

n : Number of data/respondents

k: Number of research variables

If the t table value is sought in the t table list, then Df = 30, and the hypothesis acceptance criteria are as follows:

a) If $T_{hitung} > T_{tabel}$, then H_0 is rejected and H_a is accepted

b) If $T_{hitung} < T_{tabel}$, then H_0 is accepted and H_a is rejected

The Two Tail Test curve is depicted below. (Mulyani, 2017)

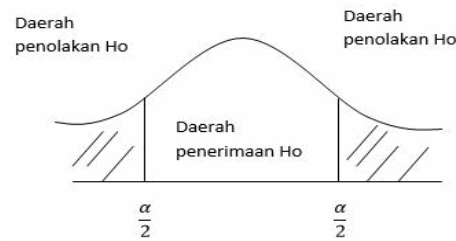


Figure 3.2

Acceptance and Rejection of Ho (T test)

In the table, the t-test shows results including:

- Thus, it can be concluded that the *Android Based Test* Implementation variable (X) has a significant influence on student learning outcomes. The significance level of the variable is 0.004, which is less than 0.05, with significance at 5% delta, and the tcount value is 3.082, which is greater than 2.042.
- Since the significance level is 0.004 below 0.05 (significance at 1% delta) and the tcount value is 3.082 above 2.750, the *Android Based Test* Implementation variable (X) has a significant influence on student learning outcomes.

D. Conclusion

Based on the results of data analysis, the researcher found that the implementation of *Android Based Test* on student learning outcomes in Islamic Religious Education subjects is in the good category. This is indicated by the average questionnaire score of 57 for the implementation of Android-based tests, which is between 54 and 59. Student learning outcomes in Islamic Religious Education subjects at SMP Negeri 3 Bojong Pekalongan Regency are Good, according to the average score of 88 which is between 85 and 89. There is evidence that the variable use of Android Based Test has a significant influence on Islamic Religious Education learning outcomes. The t-test results show that the significant level of this variable is 0.004, which is significant at 5% delta, and the t-count value of 3.082 is greater than the t-table of 2.042.

REFERENCES

- Agus Suprijono. (2013). *Cooperative Learning Theory and Application of Paikem*. Learning Library.
- Bahri, S. (2012). Random Algorithm on Computer Based Test for New Student Admission STTA Yogyakarta. *Compiler*, 1.
- Darmadi. (2012). *Development of Learning Models & Methods in the Dynamics of Student Learning*. CV Budi Utama.
- Karfoindo, F. M. (2017). Development of Computer Based Test (CBT) Application. *Scientific Journal of Information Systems Technology*, 1, 42.
- kasmawi, Mawarni, Wati, L. (2018). Implementation of Computer Based Test (CBT) in vocational high schools. *Batoboh Journal*.

- Mantala, A. P. & R. (2016). Development of Computer-Based Exam Applications and Analysis of Software System Usability Tests Using the Sumi Method. *Positive Journal*, 2, 3.
- Mulyani, M. R. S. & M. S. (2017). The Effect of Raw Material Costs and Direct Labour Costs on Profit. *Poltekpos Accounting*.
- nana sudjana. (2008). *Basics and Teaching and Learning Process*. Sinar Baru Algesindo.
- Novrianti. (2014). Development of Computer Based Testing (CBT) as an Alternative Learning Outcome Assessment Technique. *Journal of Lentera Education*, 17, 37.
- Nugroho, A. S. (2018). Android-based Quiz Development using Google Form Application. *Stich Journal*, 1, 3.
- Pakpahan, R. (2016). Computer-Based National Exam Model: Benefits and Challenges. *Journal of Education and Culture*, 1.
- Purwanto. (2014). Development of Learning Based on Communication and Information Technology in order to Realise the Excellence of the Learning Process. *Journal of Educational Technology*, 8.
- Tohirin. (2011). *Psychology of Learning Islamic Religious Education*. Rajawali Press.