Ri'ayatu Al-Qur'an: Jurnal Pendidikan Islam
https://ejournal.staipiq.ac.id/index.php/rajupi

The Influence of Android-Based Learning Media on Islamic Religious

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Article Information:
Received 18th September, 2024
Revised 18th October, 2024
Accepted 20th November, 2024

Keywords: *Learning Media, Android, Learning Outcomes.*

Abstract

The main problem in this study is whether there is an influence of android-based learning media on the learning outcomes of Islamic Religious Education (PAI) in SMA Negeri 07 Padang. This study aims to determine the picture of learning outcomes using android-based learning media, to determine the influence of android-based learning media on PAI learning outcomes. This type of research is quantitative using quasi-experiments which aim to find research results whether there is an influence or not. The instrument testing technique in this study is the validity test and reliability test. Data collection techniques are carried out through observation, tests. While the data analysis technique in this study is to test normality, homogeneity, and data testing. The data source in writing this thesis is the learning outcomes using multiple choices given to two classes, the two classes are the experimental class and the control class. This study found that: there is an influence of learning media on PAI learning outcomes in SMA Negeri 07 Padang. The data analysis technique used in the study uses the T data test or T test whose research results show that the posttest value Sig. (2-tailed) = 0.000. While the research alpha = 5% or 0.05. So, it can be concluded that there is an Influence of the Use of Android-based learning media on PAI Learning Outcomes at SMA Negeri 07 Padang.

How to Cite : Reza. M., Hasnah., Sainiago. R.H., Omeir, B.O.H., (2025). The Influence of Android-Based Learning Media on Islamic Religious. Ri'ayatu al-Qur'an: Jurnal Pendidikan Islam, 7 (1), 17-31.

e-ISSN : 3026-4758
Published by : The Institute for Research and Community Service

INTRODUCTION

The teaching and learning process, the teacher as the one who pours the message into certain symbols and the students as the recipients of the message interpret the symbols so that they are understood as messages (Yestiani & Zahwa, 2020). So, a container called media is needed, this is called a channel (chanel) (Greece, 2021). Usually in the communication process, even though the message or information has been given by the source and addressed to the recipient through the media, but there is no feedback, the communication process is not perfect. If the communicator conveys the message and the recipient of the message provides feedback to the sender, then this can be said to have occurred effective two-way communication (Arief, 2014; Asriadi, 2020). Learning is an activity that involves students and educators and the environment in an effort to acquire knowledge, skills, and positive values by using various media and learning resources to achieve the expected goals (Budiman, 2017). According to Muhaimin in his book entitled "Learning is an effort to teach students to learn." learning activities will involve students learning something in an effective and efficient way (Yatim Riyanto, 2014).

In Hamalik and Arsyad's book, it is stated that the use of learning media in the teaching and learning process generates new progress and interest, generates motivation and stimulation of learning activities and even has a psychological effect on students. Learning media are various types of components in the student environment that can trigger students to learn even though they are intended to convey messages and can encourage thoughts, increase students' willingness so that they can encourage the teaching and learning process (O. Hamalik, A and Arsyad, 2016).

The use of this learning media is not just an effort to help teachers, but also to help students in learning (Naimnule, & Oetpah, 2023). Because by using media, students' minds will be more focused on what is conveyed by the teacher or educator and can improve students' understanding and can receive messages well (Mukarromah & Andriana, 2022).

Android media is closely related to something interesting, one of which is interactive and social media (Kabunggul et al, 2020). The interactive media in question is media that is supported by things related to electronics, such as: computers/PCs, laptops, LCD projectors, active speakers, cellphones/cellphones, and other supporting tools. This interactive media is a development of an application found on an operating system on each PC. Ispring suite is an android-based software that is very easy to operate to create learning media in the form of android which contains media aspects such as visual media. This media can be developed into a more effective and easy-to-understand learning media (Tutut Sari Handayani and Suharyanto, 2016).

Islamic Religious Education is a conscious effort by the older generation to transfer experience, knowledge, skills and abilities to the younger generation so that they become devout people towards Allah. Religious education consists of two words, namely education and religion. Education (paedagogie) etymologically comes from Greek which consists of the word "Pais", meaning someone, and "again" translated as guiding. So, education (paedagogie) means guidance given to someone (Abu Ahmadi and Nur Uhbiyati, 2014).

Based on the understanding of Islamic religious education, the author concludes that Islamic religious education is an effort to prepare students to believe,

understand, appreciate, and practice Islam through guidance, teaching and training activities by paying attention to the demands to respect other religions in the relationship of harmony between religious communities in society to realize national unity.

In the teaching and learning process there are two very important elements, namely methods and media (Abdullah, R. 2017). These two aspects are interrelated, the selection of a particular teaching method will affect the type of appropriate teaching media, although there are still various other aspects that must be considered in choosing media, including objectives, types, tasks, and responses that are expected to be mastered by students after teaching takes place Abdullah, R. 2017). Although it can be said that one of the main functions of teaching media is as a teaching aid that also influences the climate, conditions and learning environment that are neatly arranged and created by teachers (Prastika et al, 2019). Therefore, in order for students to have a high interest in learning a subject, a teacher must provide a stimulus to foster this interest (Araniri, 2018). One effort to foster this is by using media in an integrated manner in the teaching and learning process. One effort to foster this is by using media in an integrated manner in the teaching and learning process. (Nurwidayanti & Mukminan, 2018; Anshar, 2019)

Learning outcomes are the abilities of students obtained after learning activities (Ekawati et al, 2015). Learning outcomes are certain competencies or abilities achieved by students after participating in the teaching and learning process and include cognitive, affective, and psychomotor skills (Setyowati & Anugraheni, 2018). Mustakim's opinion is that learning outcomes are everything achieved by students with certain assessments that have been determined by the previous educational institution curriculum. From several opinions above, learning outcomes can be interpreted as the results of the teaching and learning process, both cognitive, affective, and psychomotor, with assessments that are in accordance with the educational institution's learning curriculum. For this reason, the education that is developed must provide opportunities for students to think creatively and innovatively, so that it is no longer just a vehicle for transferring knowledge from teachers to students, education must be a vehicle for discussion, dialogue, and media to develop student creativity according to the knowledge they gain. (Nugraha, 2020; Ningsih et al., 2024). The presence of m-learning will not be able to replace e-learning, let alone replace face-to-face learning in class (Khairunnisa et al 2022). The presence of m-learning is also intended as a complement to existing learning and to provide opportunities for students to relearn material that is not well mastered anywhere and anytime (Ruslimin, 2023).

This can certainly provide a different experience in the learning process of students. Thus, the study aims to produce android-based learning media for PAI learning outcomes at SMA Negeri 07 Padang.

SMA Negeri 07 Padang, which is a driving school in education and uses the independent curriculum as its educational curriculum, also experiences obstacles in the learning process in the use of android-based learning media. Both in its use and in teaching and learning activities. Apart from these obstacles, there are also conveniences.

Ease of operation is the main attraction for users, especially for teachers. However, in the long term, this application will feel boring for students because the

features offered are too simple, and one of the media that is often used even becomes a daily necessity for both learning and other activities.

The media is an android-based mobile phone which is a cheap media and almost all students have it, with applications and systems on mobile phones it can help students to search and learn lessons. In that case, teachers are required to be more professional in the media even though it is said to be easy, because android media is quickly boring, so teachers must also have skills in mastering the class so that learning is more focused and the teaching and learning process also achieves learning objectives. What is meant by having these skills is being able to direct and guide students, inviting them to the teaching and learning process.

In addition, android-based media is very easy to understand by educators and students. However, in addition to the ease of learning and understanding the learning media, cellphones also have drawbacks and can even damage the learning process if not used properly, be it disrupts student concentration, decreases student curiosity because it is facilitated by the media, lack of educational interaction, and so on.

SMA Negeri 7 Padang School determines android-based learning media as one of the learning media in the learning process, so the school has its way of determining its learning, how the system is used and how to control it, so that it does not interfere with the learning process and even the achievement of the students themselves.

SMA Negeri 07 Padang the use of android learning media has been implemented but in PAI learning it has been used not too often because in SMA Negeri 07 Padang there are 4 teachers who teach PAI, 3 of them rarely use android-based learning media more often use lecture methods, discussions and role-playing even in PAI learning materials that should have practice but still use lecture methods, discussions and role-playing there is no more in-depth so that students find it difficult to understand it, then for 1 teacher explanation who often uses android-based learning media, through android media the teacher distributes the material to be delivered to students. So, the teacher only needs to conclude and if there is practice then the teacher only needs to provide a video of the practice and students can understand it. Based on this problem the author became interested in conducting research on whether there is an influence of android-based learning media on PAI learning outcomes.

METHODS

To determine the effect of android-based learning media on Islamic Religious Education learning outcomes at SMA Negeri 07 Padang. The researcher used a quasi-experimental method with a quantitative approach. A quantitative approach is a study whose results are presented in the form of descriptions using numbers (Prayogi & Kurniawan, 2024). Meanwhile, the type of research used in this study is quasi-experimental research. In the quasi-experimental method, researchers try to determine whether a treatment affects the results of a study. This influence is assessed by applying a certain treatment to one group (treatment group) and not applying it to another group (control group), then determining how the two groups determine the final results. In this study, the quasi-experimental method uses a nonequivalent control group design, where the experimental group (A) and the control group (B) are selected without a random assignment procedure. In both groups, a pretest and posttest were carried out. Only the experimental group (A) was treated with the following scheme:

Kelompok A	O_1 __X____O_2
Kelompok B	O_3_____X__O_4

Note:

O_1O_1= pretest results of the experimental group before being given treatment

O_2O_2= posttest results of the experimental group after being given treatment

O_3O_3= pre-test results of the control group before being given treatment

O_4O_4= post-test results of the control group without treatment

X = pretest results of the experimental group before being given treatment

In this study, there are two types of instruments, namely learning media and tests (pretest and posttest). The learning media is used to differentiate between the experimental class and the control class, while the test is used as a reference to determine the abilities of students in the pretest and posttest, students are required to work on PAI subject questions according to the material that has been delivered in the form of Multiple Choice questions. The data collection method in this study is observation, tests (pretest and posttest). The instrument testing technique used in this study is the validity test and reliability test, the data analysis technique used in this study is the normality test, homogeneity test and data test. The samples used in this study were Class XI F5 and XI F7. Of the two classes, class XI F5 was used as the Control class and class XI F7 as the experimental class. The reason the researcher used this sample was because the researcher used Non-Probability Sampling, a sampling technique that does not provide an equal opportunity for each member of the population to be selected. (Suharsimi, 2016). This technique uses non-random criteria, such as availability, geographic proximity, or expert knowledge of the individuals being studied. Researchers make decisions about sampling subjectively, without using a fixed or standard selection process. And also another reason that strengthens researchers in taking these 2 classes is because of the small number of non-Muslims in this class compared to other classes.

FINDINGS AND DISCUSSION

1. Description of Android-Based Learning Media on Islamic Religious Education Learning Outcomes

   In seeking the results of the study of the influence of Android-based learning media on Islamic Religious Education learning outcomes, this study was conducted by providing pretest and posttest questions to students in each class. The results of the student tests are described in the form of a table, namely the table of student learning outcomes for Islamic Religious Education subjects at SMA Negeri 07

Padang. The pretest and posttest score data for class XI F7 at SMA Negeri 07 Padang as an experimental class can be seen in the table below:

Table 2.1 Results of Experimental Class Scores

No	Name	Pretest Results	Posttest Results
1	Steven Aulia	45	100
2	Salsabilla Salwa Marvi	45	100
3	Mr. Farel Prasetio	40	70
4	Praise Cahyani	75	90
5	Ahmad Reza Permana	35	90
6	Fathir Az Zukhruf	40	90
7	Nurul Uikhaira	40	95
8	Zuha Naira Assyifa	60	95
9	Lutfi Maisan	45	70
10	Abraham	35	75
11	Afif Munadhil	30	80
12	Good Traveler Shines Brightly	40	80
13	Miftahul Rizky Alhamdi	60	90
14	LM Ghaza Alghazali	60	65
15	Rafel Oktosimo	50	25
16	Mr. Fachry Usmany	35	90
17	Najwa Masarah	45	75
18	Muhammad Syukri	60	90
19	The Righteousness of Rana Umairah	35	75
20	Nurul Layla Hamita	50	65
21	Vaduri Alviansyah	60	85
22	Raffi Ramadhani Putra	50	85
23	Julia	60	65
24	Rafyfa Kirana Asian	55	75
25	Zahiya Qasthalany	55	60
26	Resya Agustina	35	75
27	Holy Dian Ramadhani	65	75
28	The Virgin of Santika	65	85
29	Talitha Zara Vivilany	45	75
30	Princess Ramadan	60	70
31	Hafiza Riani Ningrum S	60	85
32	Fedrian Zordi	65	55

33	M. Sahran Hanif. D	60	65
34	Aruito Nurisman	65	60

The pretest and posttest score data for class XI F5 SMA Negeri 07 Padang as a control class can be seen in the table below:

Table 2.2 Results of the Control Class

No	Name	Pretest Results	Posttest Results
1	Fatimah Alif Lathifah Yaquf	45	60
2	Sazkia Iftitah R.	45	55
3	Nurul Atifa	40	50
4	Laila Fitri	75	85
5	Niazizca Davinza	35	45
6	Rahilla Khairunnisa	40	50
7	Olivia Beautica	40	50
8	Ninia Jonespi	60	70
9	Tiara P	45	45
10	Muhammad Lukky Satria R	35	35
11	Rizky Putra	30	30
12	Good morning Ramadhan	40	40
13	Zahra Aulia	60	70
14	Olivia Mailita Aikhifah	60	60
15	Yadi Wardiansyah	50	50
16	Miacy Alven	35	35
17	Afif Hidayahtullah	45	45
18	Muhammad Tegar	60	60
19	Muhammad Farrel Hernanda	35	35
20	Muhammad the Great	50	50
21	Mr. Satria Habibie	60	50
22	Aldo Saputra	50	60
23	Muhammad Ridho Yantoris	60	60
24	Revand Syuprihur Nst	55	55
25	Fajril Atkhar Rahman	55	55
26	Call the Son of Trianda	35	35
27	Mike Wulandari	65	65
28	Shelida Van Yolander	65	65
29	Rizky Farel	45	45
30	Rahimma Yelti	60	60

31	Najwa Rina Maulina	60	60
32	Aurelia Wema Luthpia	65	65
33	Kayia Hendriya	60	70
34	Salsa Billa Usmi	65	75
34	Keysha Vivia Hasna	50	60
35	Raditya Amran	55	55

From the calculation results, in this study the pretest and posttest values in each class can be seen in the table below:

Table 2.3 Range of Experimental and Control Values

Description	Experimental Class		Control Class	
	Pretest	Posttest	Pretest	Posttest
Minimum Value	30	25	35	30
Maximum Value	75	100	75	85
Range	45	75	45	55
Average	50.74	77.21	58.83	54.30
Variance	136.56	227.56	129.28	115.93
Standard Deviation	11.68	15.08	11.37	12.48

From the attached table, it can be seen that the pretest scores of the experimental and control classes have similarities in their highest and lowest scores. So it can be concluded that the conditions of students in the experimental and control classes are the same as in the control class. After being given treatment to the experimental class and the control class was not given treatment, then the two classes were given a posttest, there was a difference in learning outcomes between the experimental class and the control class. The experimental class experienced an increase with a value of 77.21 (posttest), while the control class only experienced an increase with a value of 54.30 (posttest) so that from the table it can be concluded that there is a significant influence of the use of android-based learning media on Islamic Religion subjects.

a. Data Analysis Requirements Testing

Before conducting hypothesis testing, it is necessary to first examine the research data, namely the normality test and the homogeneity test. The analysis requirements can be explained as follows:

1) Experimental Class Normality Test

In the pretest results of Class XI F7 as an experimental class, to determine whether the data is normal or not, the Kolmogorov-Smirnov formula is used with the help of the IBM SPSS program. The results of the

normality test calculation on the experimental class pretest can be seen in the following table

Table 2.4 Experimental Pretest Normality Value

One-Sample Kolmogorov-Smirnov Test

		Pretest
N		34
Normal Parameters [a,b]	Mean	50.74
	Std. Deviation	11,686
Most Extreme Differences	Absolute	,198
	Positive	,129
	Negative	-,198
Kolmogorov-Smirnov Z		1,153
Asymp. Sig. (2-tailed)		,140

a. Test distribution is Normal.

b. Calculated from data.

Based on the table above, the significance value obtained on the Experimental Class Pretest Score produced (Asymp.sig = 0.140) is greater than the alpha value (a = 0.05). Thus, it can be concluded that the data from the Experimental Class Pretest is normally distributed.

In the experimental class Posttest, to determine whether the data is normal or not, the Kolmogorov-Smirnov formula is also used with the IBM SPSS program. The results of the normality test calculation on the experimental class posttest can be seen in the following table

Table 2.5 Experimental Posttest Normality Values

-Sample Kolmogorov-Smirnov Test

		test
N		
Normal Parameters [a,b]	Mean	77.21
	Std. Deviation	15,085
Most Extreme Differences	Absolute	,118
	Positive	,088
	Negative	-,118
Kolmogorov-Smirnov Z		
Asymp. Sig. (2-tailed)		

a. Test distribution is Normal.

b. Calculated from data.

Based on the table above, the significance value obtained in the experimental class Posttest results produced (Asymp.sig = 0.728) is greater

than the alpha value (a = 0.05). Thus, it can be concluded that the data from the experimental class posttest results are normally distributed.

1) Control Class Normality Test

In the pretest results of Class XI F5 as a control class, to determine whether the data is normal or not, the Kolmogorov-Smirnov formula is used with the help of the IBM SPSS program. The results of the normality test calculation on the control class pretest can be seen in the following table:

Table 2.6 Pretest Control Values

One-Sample Kolmogorov-Smirnov Test

		Pretest
Normal Parameters [a,b]		36
	Mean	50.83
	Std. Deviation	11,370
Most Extreme Differences	Absolute	,179
	Positive	,113
	Negative	-,179
Kolmogorov-Smirnov Z		1,073
Asymp. Sig. (2-tailed)		,200

a. Test distribution is Normal.
b. Calculated from data.

Based on the table above, the significance value obtained on the Control Class Pretest Score produced (Asymp.sig = 0.200) is greater than the alpha value (a = 0.05). Thus, it can be concluded that the data from the Control Class Pretest is normally distributed. In the control class Posttest, to determine whether the data is normal or not, the Kolmogorov-Smirnov formula is also used with the IBM SPSS program. The results of the normality test calculation on the control class posttest can be seen in the following table:

Table 2.7 Posttest Normality Values

One-Sample Kolmogorov-Smirnov Test

		Posttest
Normal Parameters [a,b]		36
	Mean	54.31
	Deviation	12,487
Most Extreme Differences	Absolute	,120
	Positive	,102
	Negative	-,120
Kolmogorov-Smirnov Z		,722
Asymp. Sig. (2-tailed)		,675

a. Test distribution is Normal.
b. Calculated from data.

Based on the table above, the significance value obtained in the experimental class Posttest results produced (Asymp.sig = 0.675) is greater than the alpha value (a = 0.05).

Thus, it can be concluded that the data from the experimental class posttest results are normally distributed.

1) Homogeneity Test

Based on the normality test of the distribution of pretest data and pretest score data for both classes are normally distributed so that the analysis is continued by testing the homogeneity of the two variances between the pretest data for the experimental class and the control class using the Levene test using the SPSS for Windows program. with a significance level of 0.05. After data processing, the output display can be seen in the table below:

Table 2.8 Homogeneity Values

Test of Homogeneity of Variance

		Levene Statistics	df1	df2	Sig.
Pre-Test	Based on Mean	,102	1	68	,750
	Based on Median	,099	1	68	,754
	Based on Median and with adjusted df	,099	1	67,950	,754
	Based on trimmed mean	,101	1	68	,751
Post-Test	Based on Mean	,551	1	68	,460
	Based on Median	,481	1	68	,490
	Based on Median and with adjusted df	,481	1	62,955	,491
d on trimmed mean		,577	1	68	,450

Based on the output results of the homogeneity of variance test using the Levene test in the table above, the pretest significance value is 0.750 and the posttest value is 0.460. Because the significance value is more than 0.05, it can be concluded that students in the control class and experimental class come from populations that have the same variance, or both classes are homogeneous.

1. The Influence of Android-Based Learning Media on PAI Learning Outcomes

a. Descriptive Statistical Test

Descriptive statistics are statistics used to describe data into clearer and easier-to-understand information that provides an overview of the research in the form of average (mean), minimum, maximum and standard deviation values. This study applies descriptive and comparative methods. Descriptively

using descriptive statistics to describe and analyze students' emotions in Biology learning. Furthermore, comparing the emotional conditions of students between two different schools using a comparative test, namely the independent samples t-test or Mann-Whitney U-Test (Putri, & Novinovrit, 2024). The results of the descriptive statistical analysis research using the IBM SPSS for Windows application can be seen in the table below:

Table 2.9 Descriptive Values of Analysis

Descriptive Statistics

	N	nge	imum	imum	um	Mean		Std. Deviation	iance
	istics	istics	istics	istics	istics	istics	Error	atistics	istics
Pre-Test Experiment	34	45	30	75	1725	50.74	2,004	11,686	6,564
Post-Test Experiment	34	75	25	100	2625	77.21	2,587	15,085	7,562
Pre-Test Control	36	45	30	75	1830	50.83	1,895	11,370	9,286
Post-Test Dick	36	55	30	85	1955	54.31	2,081	12,487	5,933
Valid N (listwise)	34								

Based on the table above, it shows that N or the number of valid data from the experimental class is 34, the minimum value is 30, the maximum value is 75, from the results (pretest) the mean value is 50.74, and the standard deviation value is 11.686..

a. Hypothesis Testing Using T-Test

Hypothesis testing is used to determine the effect of each independent variable on the dependent variable. Hypothesis testing of the t-test uses the assistance of the IBM SPSS for Windows program, namely by comparing the calculated significance of each independent variable against the dependent variable with a significance level of 5% One-sample T-test, a very effective statistical method for testing hypotheses about the average value of the population (Juliansyah, Hannie & Hendriadi, 2024). Decision making using the IBM SPSS for Windows application can be done by comparing the results in the Sig. columns. (2-tailed) with the research Alpha. The basis for making Paired Samples Test decisions is as follows:

1) If the Sig. (2-tailed) value < Research Alpha (0.05), then H0 is rejected and HI is accepted.
2) If the Sig. (2-tailed) value > Research Alpha (0.05), then H0 is accepted and HI is rejected.

As a reminder, the hypothesis of this study is as follows:

1) HI: There is an Influence of the Use of Android-Based Learning Media on PAI Learning Outcomes at SMA Negeri 07 Padang.
2) Ho: There is no Influence of the Use of Android-Based Learning Media on PAI Learning Outcomes at SMA Negeri 07 Padang.

To determine the hypothesis, it can be done by comparing the results in the Sig. Value column (2-tailed) in the Paired Samples Test table as in the following table:

Table 3.0 Independent Sample T Test Value

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	f	g. (2-tailed)	Mean Difference	Error Difference	95% Confidence Interval of the Difference	
									ower	Upper
Experiment	Equal variances assumed	,445	,507	3,089	66	,000	6,47059	2.27255	1,00445	-19.93672
	Equal variances not assumed			3,089	2,120	,000	6,47059	2.27255	1,01208	-19,92910
Control	Equal variances assumed	,255	,615	-,770	66	,444	-2,20588	2.86545	7.92693	3.51517
	Equal variances not assumed			-,770	5,969	,444	-2,20588	2.86545	7.92698	3.51522

In the table above, the posttest value Sig. (2-tailed) = 0.000. While the research alpha = 5% or 0.05. This means that the Sig. (2-tailed) value is smaller than the alpha value (0.000 <0.05) then it can be concluded that this study H0 is rejected and Hi is accepted. So it can be concluded that there is an Effect of Using Android-based Learning Media on PAI Learning Outcomes at SMA Negeri 07 Padang. And this is indicated by the difference between the experimental class f value of 0.445 while the control class f value is 0.255, besides the average acquisition of the experimental class is 77.21 then the average acquisition of the control class is 54.31.

CONCLUSION

In the results of the study of the influence of android-based learning media on PAI learning outcomes at SMA Negeri 07 Padang, the researcher concluded that there is an influence of android-based learning media on PAI learning outcomes at SMA Negeri 07 Padang, namely: 1) There is a significant influence in the description of android-based learning media on PAI learning outcomes at SMA Negeri 07 Padang.

In the analysis of research data, the pretest scores of the experimental and control classes. So it can be concluded that the conditions of students in the experimental and control classes have the same value. After being given treatment to the experimental class that was given treatment and the control class that was not given treatment, then the two classes were given a posttest, there was a difference in learning outcomes between the experimental class and the control class. The experimental class experienced an increase with a value of 77.20 (posttest), while the control class only experienced an increase with a value of 50.74 (pretest) so that from the table it can be concluded that there is a significant influence of the use of android-based learning media on Islamic Religion subjects. 2) There is a significant influence in android-based learning media on PAI learning outcomes at SMA Negeri 07 Padang. In the analysis of research data, the posttest score Sig. (2-tailed) = 0.000. While the research alpha = 5% or 0.05. This means that the Sig. (2-tailed) value is smaller than the alpha value (0.000 < 0.05) so it can be concluded that this research H0 is rejected and Hi is accepted.

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