



The Application of Learning Model (Google and Google Form) Based Android toward Students' Activities and Research Methodology Learning Outcomes

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Abstract: Technology is an instrument that has been affected in every line of life including learning process, one technology that can be utilized in the learning process namely an android smartphone. Android can be made to make easy for students in find theory of methodology research, can be used in evaluation of learning outcomes and others. This study aimed to know the effectiveness of learning models based android on activities and methodology research learning outcomes of students, to know Response Description of Student In using Learning Model based Android. Research design used a pretest-posttest-group with taking sample, used a random sampling of 250, the instrument used test about description and non test in the form of questionnaire response of students and analyzed with stats inferential namely T test. Research results show that t test on learning outcomes with obtained t-count = 4. 677 is bigger than t table = 1.66 reinforced with N-gain value of experimental class of 0.71 compared control class was equal to 0.54 then the average Mark experimental class was better compared with control class, the use of learning media based on android app has influence of 60.16% on learning outcomes and learning media based android app got positive response for student with results questionnaire of 80.05%.

Keywords: activities, android, google and google forms, learning outcomes

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INTRODUCTION

Development of knowledge is milestone base development of technology information and communication (ICT) namely mobile technology (Setyawan et al., 2019) Media developments such as cell phone or android as a supporting media activity of human in skeleton embodiment level of effectiveness and efficiency including achievement on maximum results (Joehanno, 2013). Nowadays, the use of cell phone more used various layer community that has open opportunity use technology device to the world of education. Use cell phone among students already are strange again because students have use cell phone especially android (Tandon et al., 2020).

Many studies show that restrictions of use cell phone for student starting at senior high school (Tandon et al., 2020) especially when they do their task at home, of course they using android/ mobile, only use cell phone need involve parents (Koo & Kim, 2015). The development of communication and information media is a priority icon progress of education moment (Nurhikmah et al., 2021; Sukmawati, 2020). What drives use cell phone in the learning process is more increased too (Ahmad, 2020). Ordinary cell phone known smartphone as a medium of communication that will help various effort that can make it easy for human. Mobile presented as form demands in a social world that is increasingly pluralist without existence balance in change increasingly pluralist that Smartphone is a medium of communication that has various applications that can utilized in the learning process teach in frame help student to understand lesson more easy and fast, with smartphone participant students and teachers/ lecturers could get easy various and variations information. Development of android mobile phones create new pedagogic in the learning process as style study adaptive, collaborative and hybrid used in skeleton enhancement experience study of students (Ahmad, 2020). Mobile phones that are accompanied and equipped with various advanced features and applications that greatly contribute to helping users to obtain information. Applications that can be obtained on android/IOS mobile phones such as Whatsapp, Woowap, Facebook, Yahoo, Google, Twitter, BBM, and other. Now use cell phone could not inevitable again (Fernandez, 2018).

The use of smartphone/android in education is something step to realize education modernization. Innovation and creativity in learning is very important thing carried out by every educational institution, because Innovation and creativity in learning could motivate and stimulate activity study even take effect to psychological

students (Akhiruddin et al., 2020, 2021; Gavali et al., 2017; Sujarwo et al., 2020) This thing in accordance with expression Arshad (2011) who says that development knowledge and technology encourage the learning process Becomes more applicable and interesting as effort for enhancement Education quality, device of smartphone /android can utilized in study (Setyawan et al., 2019). At the beginning of the learning process is still relatively simple with the indicator to use of receptive media and methods simple and learning process at first in progress one direction and centered on the teacher. Development of knowledge and technology specifically in the field of Education provides influence learning process. Learning process is no again focused on the teacher and has using modern media because of that, concept of study approached with use paradigm constructivism, where to learn is results construction alone (student) as results of the interaction to environment of learning (Daryanto, 2010; Hairuddin, 2021; Sujarwo et al., 2021).

Based on observation, in every learning process show that moment now, it is still many teachers/ lecturers using a relatively simple and impressive learning model is unupdating or learning model is still conventional normal used in the learning process in general which makes passive student in learning, lack intensity interaction, no awakening groups cooperation and teachers will give mark far from objectivity. According to Wijaya (2008) effect application of Learning of conventional is: 1. no effective for student learning, 2. Students are no feel motivated 3. students are not enough or even no understand material given by the teacher. Learning of conventional must be innovated so that the target of success learning is achieved. The use of android in the learning process will help student to study and students could be motivated, by using android in the learning process could be Upgrade activity of student in study. The use of android in the learning process make learning could be implemented effectively, efficiently, and attractively. Use of android/ smartphone is the right instrument in advance of education like a country that is growing (Gavali et al., 2017).

Development system of android operation start from gadgets, tablet PCs, smartphones and other applications that have system other android operations. Android operating system is very supportive Public specifically participant educate in get information, cause almost all people using the android system in over the world. Only part little ones who take advantage of it for help activity in learning nor profession human. Moment this already many apps offered in one grip so that more make it easy to look for necessary information (Muyaroah & Fajartia, 2017). Android is something system operation for mobile device based linux which includes operations system, middleware and applications. Android is an open platform that allows developer create application. Android distributed with two types. First to get support full from google or Google Mail Service (GMS). Second is the one that doesn't get support direct from google or Open Handset Distribution (OHD) (Syafaat, 2012). Teachers/lecturers can create android-based learning media. Cell phones can help in the learning process because nowadays cellphones are not just a communication tool, but now cellphones can be used in the learning process. One of the android-based media that can be used in learning is the google application or google form. Google is an information search engine that can be used to find materials that are relevant to the topic being studied so that students can get varied material quickly. Meanwhile, the google form can be used for quizzes, assignments, mid-semester and even finals. The google form link can be accessed by students via the class group on the wooapp/whatsapp application

Use of google or google forms, apps social media (wooapp/whatsapp) make learning of student to be interesting, fun, no boring and nuanced very high play. Students will be effective if they are be in a pleasant and happy situation and condition. Vice versa, students will feel afraid, anxious, feeling no comfortable that can make less than optimal when the learning process of student is too forced (Susanto, 2009). Use google or google forms, apps social media (wooapp/whatsapp) on the eyes studying methodology study could help student in look for materials related. Especially eye studying there is many relatively foreign terms for student, so with use learning android student could helped in understand terms and materials with easy and varied. Utilizing google forms in collection task, execution quiz and mid/ final test, will make it easy student in do where course. Google forms will also make it easy lecturer in assess and collect the application of the Android-based learning model has been widely tested in the learning process, especially in the learning process at the higher education level. Such as research by Subari (2017) with the title the effect of applying Android-based learning models on learning outcomes of basic Socio-Cultural Sciences for STIKIP Development students and research results show that there is an effect of applying Android-based learning models to learning outcomes of basic Socio-Cultural Sciences in STIKIP students Development. In line with the research results. Ernawati (2017) with the title the effect of implementing Android-based learning with the classroom application on the learning outcomes of Physics courses for STIKES Mega Buana students. The results show that there is a significant effect of implementing Android-based learning with the classroom application on the learning outcomes of Physics subjects, namely 83% and the value of Sig A = 0.001 and the value of = 0.05. Based on background back above the reseachers are interested in investigating " effectiveness of the use of learning models based android on activities and methodology research on students learning outcomes.

Various studies have been conducted such as Siti Muyaroah and Mega Fajartia (2017) Learning Media Development Based on Android with use Adobe Flash CS 6 Application on Biology Subject. The t-test result

states that there is effectiveness use of learning media Android based with results learn what you can students. (Innovative Journal of Curriculum and Educational Technology IJCET 6 (2) (2017). Cahya Arif Fredyana and Dewanto JPTM. Volume 05 Number 03 Year 2016, 40-46 titles Learning Media Development Android Based on Basic Automotive Technology Subjects for Class X SMK Negeri 3 Buduran – Sidoarjo. Research results are: 1) learning media based on android is declared very feasible, with percentage eligibility 91.89 %; 2) the application of media gets response positive from students and categorized very well with percentage response 86.64%; 3) result study student declared increased and categorized as very complete with percentage results study highest 86.6% based on the value of pretest, posttest I and posttest II. Joko Kuswanto, Ferri Radiansah, Journal of Media Infotama Vol. 14 No. 1, February 2018 title of Learning Media Android Based on System Subject Operation Class XI Network, with results study show that learning media this android based own level eligibility and attractiveness product on criteria ok, thing this proved with results data collection through questionnaire there is an average percentage item instrument in criteria good. Zaus et al. (2018) Static and Dynamic Electricity Learning Media Design Based on Android, Journal of Information Technology and Computer Science (INTECOMS) Volume 1 No 1, March 2018 e - ISSN: 2614-1574. Based on design and manufacture of learning media static and dynamic electricity android based then could conclude that: 1. Learning media static and dynamic electricity android based has developed by good start of the analysis process needs, design, manufacture and testing to the media that have 2. Learning media static and dynamic electricity based on android easy used by teachers and students in the learning process. Purbasari (2013) with title "Development Android application as Learning Media Math on Material Dimension Three for X grade high school students" Research results mentioned that feasibility test results obtained 96.43% for media expert, 89.28% for expert material, 81.52% for practitioner field, and 83.49% for target user. The teaching and learning process is a planned process, which has been structured. There are three shutters that must be transformed in the teaching and learning process, namely the cognitive shutter, the affective shutter and the psychomotor shutter. Cognitive own connection with education in skeleton determination future success (Wai, 2013). In addition, educators are required to be creative in create and grow activity participant educate study in accordance with the plans that have been compiled.

Development of science and technology (IPTEK) provides challenge alone for graduate of knowledge education for create media/model learning that can be upgrade better quality in education. Progress knowledge and technology expected to make it easy educator (teacher/lecturer) create media/model learning for eye needed lessons, high cost, because progress of technology and pedagogy position participant educate as co-producer knowledge (Greenhow & Lewin, 2016). The use of an Android cellphone is a step to make it easier for educators to create learning media/models that do not require high costs (Syamsuni, 2018) Learning media used in the learning process teach is components that are not inseparable with method learn to use. This 4.0 era, with utilise development technology in the field of education is a learning medium android based. Which is a learning media that can developed moment this namely learning media based Android. Easy learning media accessed by who just and done where just Becomes factor pusher the development of Android learning media. Use smartphone as an educational instrument is great thing important and have get confession by scientific (Gavali et al., 2017).

According to Satyaputra and Aritonang in Kuswanto and Radiansah (2018) android is a system operation for smartphones and tablets. System operation could illustrated as a 'bridge' between device (device) and its users, so that user could interact with device and run applications available on the device. According to Purwanto et al. (2013) said that "Android is something *software* (device software) used on mobile devices (devices) walking which includes system operations, middleware and core applications". The android learning model is a learning model that is used in the active student learning process with a strict pattern of relevant materials through the google application using an android mobile phone. one shape utilization smartphone /android is in access information educational (Juraman, 2014). Android learning is called to be an active student learning model, because students who have android cellphones are actively looking for material, students actively convey it to their friends in turn. according to Listyorini (2013) say that with Android learning. Learning process teach could done where only and when only, and no make student Fed up if compared with learning model compensation (Widiansyah et al., 2018). This android-based learning model can also be used with a group pattern with the following steps: Educators prepare material via power point using an android cell phone, Students make small groups of 3-4 people, Each group divides their respective tasks, namely 2 people filtering the material given through powerpoints, 1 person recording all the results of their group's survey results and 1 person in charge of reading the conclusions, Every conclusion read out will be explained and concluded by the teacher/lecturer, Each group screened different materials (Syamsuni, 2018).

Moreover, the Android learning model has enormous benefits including: Complete the material in a relatively fast time, Learners are more active, Students will receive a variety of materials or theories, The nuances of playing so that it is not boring, Android is system safe operation and many provide useful tools build software and make opportunity for developers application Android is open (*Open Source Platform*): Android

based linux that is open or *open source* so could with easy for developed and Cultivating cooperation and working according to their respective duties (Syamsuni, 2018). Android is system operation designed by one of the largest website owner in the world. Along running time, Android has evolve becomes awesome system ordinary and a lot in demand by smartphone users because have many advantages. However, behind the popularity of the so- called Android platform as technology advanced this sure own shortage.

METHODS

Research design used a true experimental research (pretest-posttest). A true experiment is a type of experimental design and is thought to be the most accurate type of experimental research. This is because a true experiment supports or refutes a hypothesis using statistical analysis. A true experiment is also thought to be the only experimental design that can establish cause and effect relationships. Reason used true experiment is sampling technique is a random technique Syamsuni (2016) who became target in study is Megarezky University students with taking sample using random sampling technique. Random sampling is a part of the sampling technique in which each sample has an equal probability of being chosen. A sample chosen randomly is meant to be an unbiased representation of the total population. If for some reasons, the sample does not represent the population, the variation is called a sampling error. The level of 95% confidence or margin error 0.05 with assumption that, 98% of students had used handphone (mobile phone) based on Android/IOS. Research data used questionnaire response of students and pretest and posttest questions for student learning outcomes. Data collection was analyzed by using quantitative method, it was good for describing response of student to use learning based on android or analyze student learning outcomes of pre and post with using hypothesis test parametric T test (paired sample T test) because data collected in the form of ratio data.

RESULT AND DISCUSSION

The data obtained in this study was the value of the learning outcomes of the research methodology material of Megarezky Makassar University students consisting of 250 students. The implementation of learning was adjusted to the lesson plan which is divided into 5 meetings. At the initial meeting, students were given pretest questions that had been tested and their validity was calculated. After learning the research methodology using an android/IOS-based learning model (google and google form), a post test was carried out. The research results are as follows:

Activities study of student in learning based Android

The results of the study indicate that learning by using an android cell phone encourages students to be active in the teaching and learning process, enabling students to obtain more complex material. The following are the results of research on student activities in the application of the Android-based learning model as follows. Student activity in android learning shows an increase from before and after the implementation of android learning. Of the 6 points of achievement indicators that have been set, each of them shows an increase after the implementation of android learning. The first indicator increased by 93.6% with a student frequency of 234 students, the second indicator by 83.6% (209 students), the third indicator increased by 80.4% (201 students), while in the fourth indicator there were still no students who did any activity, the fifth indicator increased to 79.6% (199 students), and while the sixth indicator was the same as the fourth indicator, none of the students did any activity. While in the first cycle, only 97.2% (243 students) in the first indicator, the second indicator 75.6% (189 students), while the third indicator is only 60% (150 students), and the fourth indicator there are no students doing any activities at all. Whatever, and while the fifth indicator is only 40.8% (102 students), and the sixth indicator is the same as the fourth indicator there are also no students who did any activities.

Student learning outcomes in learning based Android

The use of android mobiles in statistical learning and research methodologies that can motivate students to learn the material given quickly, can work together in completing their assignments. The use of the Android learning model provided convenience in the teaching and learning process, both for the convenience of students in receiving material and doing assignments, as well as making it easier for educators to assign grades or scores to the results of students' work. The use of android cellphones, educates students in independence in spelling flexible tasks, which means that they can be done inside school and can also be done outside of school.

Learning with android-based learning made students happier in learning because it is packed with games, and students can learn anytime and anywhere. With the high interest and learning motivation possessed by students, the learning outcomes obtained by students also increase. Android cellphone is one of the media that can be used in learning that can be a source of knowledge/subject matter (Saputra et al., 2018). Data collection on student learning outcomes was carried out, both in the control class and in the experimental class. In the experimental class, the treatment is in the form of applying an Android-based learning model and in the control class, the treatment is in the form of conventional learning. With the average calculation and t-test

calculation can be seen in [table 1](#).

Table 1. Calculation of mean and t-test

Learning outcomes	mean	SD	P value sig (2- tailed)	t value	n
Pretest	85.55	8,337	0.000	4.677	250
Posttest	72.55	8,445			

Questionnaires and observations that we gave to both classes were to find out the description of student responses to the use of learning model based on android. The questionnaire given was a questionnaire with a Linkert scale which contains five assessment classifications. The student response questionnaire was student feedback on the media used which contains statements related to the results of the entire learning process ([Ismawati et al., 2013](#)). The results of research are as follows.

Table 2. Response result student to the learning model based on Android

Assessed Aspect	Score	Relatively	category
Media of presentation makes me interested to read it	176	75.89	good
I feel like if learning using this medium	177	76.91	Good
Scope existing material in clear and coherent media so that it is easy to understand	179	80.23	Good
I can get various materials	180	85.56	Very good
Use of media in activity learning is easier for me to understand lesson	179	80.23	Good
I don't Fed up in the learning process with using the Android learning model	176	75.89	Good
Using the android learning model to make me active in the process of learning	177	76.91	Good
this medium encourage desire me to know material and activity in study	180	85.56	Very good
Practice questions interactive media contained in making me interested for do it	182	86.66	Very good
Language used in communicative media and easy to understand	179	80.23	Good

From result of study show that response of megarezky university students were very high, the indicator was height percentage from results distribution questionnaire for knowing response of student in the use of the android learning model. The application of the android-based learning model is very effective in increasing student motivation in learning. This is in accordance with the opinion of [Prasetyo et al. \(2015\)](#) that the use of ICT-based learning media in the form of an android application can increase students' learning motivation and make learning more active and interesting so as to foster students' willingness to learn which has an impact on increasing student learning outcomes. The results of the study [Ahmar and Rahman \(2017\)](#) which said that learning by using android on average 90.32% of students understood the material faster and 100% of students were very ready to accept the subject matter.

CONCLUSION

The use of learning models on based android toward activities and methodology research learning outcomes on students is effective and indicators of the learning process that using learning model based android has better if compared conventional learning with using calculation as following: $t_{count} = 4.677$ is bigger from $t_{table} = 1.66$ reinforced with N -gain value. Student's response in Using Learning Model based Android indicates that it very high category, indicator is height percentage from results distribution questionnaire for knowing response of student in using android learning model.

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