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The Effect of Mobile Learning on Senior High School (SMA): Case Study at Public Senior High School (SMA Negeri) in Yogyakarta

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²⁴ **Abstract.** This research aims to know the effect of mobile learning in learning activity at Senior High School. This research is a quantitative research with experimental method which can be interpreted as research method used to find the effect of certain treatment toward other in a controlled condition. Study case in SMA Negeri Yogyakarta, with number of 200 students and 2 teachers at Public Senior High School existing in Yogyakarta, namely SMA Negeri 8 Yogyakarta and SMA Negeri 9 Yogyakarta. This research produces the effectiveness of mobile learning. The effectiveness referred to this research is the success of an attempt of a system designed to engage learners actively and independently in learning. The result of t-test stated that there is effectiveness of the use of mobile learning to the learning result obtained. ¹³

1. Introduction

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Learning as a process of study built by teacher to develop creativity in thinking that can improve students' thinking ability, and can improve the ability to construct a new knowledge as an effort to enhance a good subject mastery. As stated in Law of National Educational System no. 20 Year 2003, learning is "the process of interaction of learners with educators and learning resources in a learning environment". The purpose of learning can be seen through students' achievement as well as the positive changes in students behavior. There are various kinds of subjects studied by students in the school one of them is mathematics. Mathematics course is one of the subjects that make the students mostly feel difficult to understand [1]. Hence, it is one of challenging stuffs for teachers to increase student's interest in learning materials using their chosen method.

The development of technology raises a new way of learning and online services that provide the convenience of its users. However, in such an advanced of technology that enters in education sector, it is not maximally used by teachers and students [2]. The use of information technology is only a second alternative to find the source of learning. This is because teachers are still familiar with the previous curriculum which prioritize direct or face-to-face learning. The utilization of mobile phone is not only limited as a communication tool but it can be used as one of the learning media nowadays, considering the higher level of ownership of it. Thus, the newest generation of mobile phone, smart phone, which is nowadays has a role in education [3].



The last few years, quipper school was existed in education, which can be accessed via smartphone. Quipper school is a free online platform for teachers and students, in which link features are used for teachers to manage online classes and see students' progress as well as a smart learning for students [4]. Quipper School Indonesia is not the first educational startup to provide a platform to support the KBM (teaching and learning process) in Indonesia. Currently, it has been served for grade 7 to grade 12 with the subject adapted to the curriculum and materials provided in school. The purpose of this study is to analyze the effectiveness of mobile learning in mathematics learning of second grade of Senior High School of Yogyakarta. Additionally, this study was conducted at SMA 8 and SMA 9 Yogyakarta.

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2. Review Of Related Literature

2.1 Mobile Learning

The use of information and communication technology (ICT) in education continues to evolve in various strategies and patterns, which can basically be grouped into e-Learning system as a form of learning that utilizes electronic devices and digital media, as well as mobile learning (m-learning) as a particular form of learning to utilize mobile communication technology and devices. The extremely high rate of mobile device development, the relatively easy rate of usage, and the increasingly affordable price of devices, rather than personal computer devices, are encouraging factors that expand the opportunity of using or implementing mobile learning as a new trend in learning that shapes the learning paradigm that can be performed wherever and whenever we are.

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Mobile learning is defined by Quinn 2000 [5] as: "The intersection of mobile computing and e-learning: accessible resources wherever you are, strong search capabilities, rich interaction, powerful support for effective learning, and performance-based assessment. E-Learning independent of location in time or space ". Based on these definitions, mobile learning is a learning model that utilizes information and communication technology. In the concept of learning mobile learning brings the benefits of the availability of teaching materials that can any time be accessed and it provides an interesting visualization of material. The term M-Learning or Mobile Learning refers to the use of handheld devices such as PDA, mobile phones, laptops and information technology devices that will be widely used in learning and teaching process, in this case we focus on mobile devices (mobile phones). The purpose of developing mobile learning is a lifelong learning process. Students / university students can be more active in learning process, besides, it saves the time because if it is applied in the learning process then students do not need to be present in the classroom but just to collect the task, by the task is sent through the application through the mobile phone that indirectly will improve the quality of the learning process itself.

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According to Desmon Keegan [6] The definition of mobile learning is one of the supporting elements in education and training process, using mobile media, such as PDA, Smart Phones and Mobile Phone . Keegan said, in mobile learning there is comfort in the utilization of functions and ease of media or tools used (functionality and mobility). One of the characteristics of mobile learning is the ease of tool usage, it can be carried and used anywhere. Moreover, the equipment is user friendly, because it is easy to use. Also, it is cheap and has constancy, even if used while walking, eating, chatting, etc.

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According to Muh. Taminudin, H, M.T, [7] the term mobile learning refers to the use of mobile and mobile information devices, such as PDA, mobile phones, laptops and tablet PC, in teaching and learning. Mobile learning is part of electronic learning (e-learning) so that, it is also part of

distance learning (d-learning). In addition, he also stated that mobile learning is a unique learning because learners can access learning materials, referrals and applications related to learning, whenever and wherever. This will increase attention to learning materials, create a pervasive learning, and can encourage the motivation of learners to lifelong learning. Besides, compared to conventional learning, mobile learning allows more opportunities by ad hoc collaboration and informal interaction among learners.

Meanwhile, Munir [8] explained that mobile learning is often defined as e-learning through mobile computing devices. Mobile learning is the delivery of electronic learning materials on mobile computing tools to be accessible anywhere and anytime. Generally, the mobile device in question is smart phone, mobile phone and PDA.

Another opinion stated by Candra Ahmadi [9], he mentioned that mobile learning is the next generation of e-learning and based on mobile devices. The future mobile learning will be an important instrument for learning all the time.

According to several opinions of the experts above, the researcher concludes that mobile learning is one of the learning model device based, so that learning can be performed anywhere and anytime, independently, besides mobile learning is part of electronic education learning (e-learning) and also part of distance learning.

2.2 Quipper School

Quipper School is a FREE online platform for teachers and students. Quipper School consists of two parts: LINK for teachers, and LEARN for students.

Quipper School Link is a platform the teachers can manage online classes and view students' progress. These following things teachers can do while using Quipper School Link:

1. Sending assignments and exams - Exploit thousands of materials and questions that correspond to the curriculum, to serve as assignments for all your students or several student groups in a classroom.
2. Create educational contents - If anything is incompleted or missing, teachers can change the available content or create new materials and problems from the beginning.
3. Viewing and downloading analyses – Development of students is directly connected to LEARN and LINK, so teachers can access the information center regarding the level of progress, achievement, strengths and weaknesses of students.
4. Working personally or in group - LINK is designed to make it easier for teachers to manage their own classes, or to collaborate with the other teacher (two or more), in the same class or school.

Quipper School Learn is where students learn. The platform is filled with features that make learning always feel safe and fun:

1. General assignments and lessons - Students can work on specific topics recommended by teachers, or learn any material from the curriculum independently.
2. Message feature - Students and teachers can continually communicate using our messaging service, which makes it easier for students to address specific issues or topics they find difficult and need an assistance.

3. Games feature - *LEARN* rewards students with exchangeable coins that can be changed for themes, so students can customize the learning environment according to their want. Students can also see how their classmates progress in *Kronologi*.

3. Research Methodology

This research used true-experimental research design, it is used for revealing the cause-effect relationship that include either control group and experimental group. Moreover, random sampling method was used to determine the group [10]. The population is the students of XI MIPA SMA Negeri 8 and SMA Negeri 9 Yogyakarta consist of 200 students. Furthermore, convensie sampling was used to obtain samples stated as follow:

Table 1. Research sample

Class	Sampel
Control	100
Experiment	100
Total	200

Data collection technique used in this study is by applying a test. There are 40 questions in the form of multiple choice with five answer options namely a, b, c, d, and e. Thus, it is developed to obtain students' learning result data. Prior to hypothesis testing, the questions were created through 2 phases of test, validity and reliability test [11]. Moreover, it is performed in order to know the validity and the sharpness of the items. This study aims to determine the learning outcomes and it is quantitative. Then, the data analysis technique used in this study was statistical t-test technique [12]. It is used to compare the treatment classes of the experimental class and the control class. So, it will be found an improvement of learning outcomes by mobile learning called Quipper School.

4. Results And Discussion

Data collection of students' learning outcomes was performed both in control class and experimental class. In experimental class, *mobile learning* was applied and contrarily, *lecture learning* was applied in control class. It is used average calculation and t-test calculation as follows:

Table 2. T-Test results difference in posttest value

Class	N	T-count	Dk	T-table
Control	100	4.390	198	1.972
experiment	100			

¹³ Based on the results of data management and data analysis, there is an effectiveness of mathematics learning outcomes by using mobile learning. Such effectiveness as an indicator of the learning process using mobile learning has higher learning outcomes than the prior learning method. The treatment of the experimental class and control class in the test obtained that there is a positive impact of learning by using mobile learning. The positive impact is evidenced by the results of hypothesis testing with the value of t-count is 4.390. Moreover, when it is compared to

the price of t table with 5% of significance level is obtained 1.972, because t-count < t-table then H_0 is rejected and H_a is accepted and it means there is improvement of effectiveness and learning outcomes by using mobile learning.

It is occurred because learning used mobile learning can make students interested to learn the material given quickly, also, it can stimulate students to complete the task together. Mobile learning made students more eager in learning because it can access anytime and anywhere because the media used in this learning is a device they own. Consequently, it can increase students' learning interest. Because of the high interest and motivation to learn owned by learners then also increase their learning outcomes. Students who are usually afraid and silent in the learning process become more courageous to interact with other friends so as learning process becomes very conducive and fun.

5. Conclusion

Based on the research result using mobile learning, it can be concluded there is effectiveness of students' learning outcomes using mobile learning compared to using lecture learning. It is because learning by using mobile learning can make learners happy so that learners can understand the material well. By a good understanding of the students then affects on increasing learning outcomes. Based on the conclusions, the suggestions can be stated that, if it will be widely used for learning, this learning media need to be developed and equipped.

6. Reference

- [1] Afifuddin 2013, *Pengembangan Aplikasi Mobile-Learning Pada Smartphone Berbasis Android* p 68
- [2] H Hamidi and A Chavoshi, 2017 *Analysis of the essential factors for the adoption of mobile learning in higher education: A case study of students of the University of Technology* (Telemat informatics)
- [3] I Jahnke, P Bergström, E Mårell-Olsson, L Häll and S Kumar 2017 *Digital Didactical Designs as research framework: iPad integration in Nordic schools* (Comput. Educ) vol 113 pp 1–15
- [4] PT Quipper Edukasi Indonesia 2017 *Panduan Penggunaan Quipper School untuk Guru 2017*
- [5] Clark and Quinn 2000 *mLearning: Mobile, Wireless, In-Your-Pocket Learning* [Online] Available: <http://www.linezine.com/2.1/features/cqmmwiyp.htm>.
- [6] Desmond and Keegan 2015 *the Incorporation of Mobile Learning Into Mainstream Education and Training* (PhD Propos) vol 1 pp 1–17
- [7] P Matematika 2013 *Pengenalan Media Pembelajaran Berbasis Mobile (Mobile Learning)*
- [8] Y Mehdipour and H Zerehkafi 2013 *Mobile Learning for Education: Benefits and Challenges* (Int. J. Comput) Vol 3 no 6 p 93–101 (251–259)
- [9] S Hanief 2015 *Pengukuran Efektivitas Pembelajaran Jarak Jauh Menggunakan Framework Cobit 4.1 Dengan Pola Sinkronus* pp 9–10
- [10] P D Sugiono 2013 *cara mudah menyusun: skripsi, tesis dan desertasi*
- [11] Alzaza 2011 *Students' Awareness and Requirements of Mobile Learning Services in the Higher Education Environment* (Am. J. Econ. Bus. Adm) vol 3 no 1 pp 95–100
- [12] P D Sugiono 2015 *Statistik untuk penelitian*

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Publication

27 Submitted to Universitas Muhammadiyah Makassar

Student Paper

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Publication

29 epdf.pub

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30 dongengjogja.blogspot.com

Internet Source

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