



EFFECTIVENESS OF QUANTUM TEACHING MODEL USING HANDPHONE ANDROID MEDIA TOWARD STUDENT ACHIEVEMENT MOTIVATION ON INDONESIAN LANGUAGE LEARNING IN THE INDUSTRIAL REVOLUTION 4.0

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Abstract: The purpose of this study is to examine the effectiveness of a quantum teaching model with an android handphone on student achievement motivation in learning Indonesian in the industrial revolution era 4.0. This type of research uses quasy experiment. The data analysis test uses the Independent-Samples-t Test with SPSS. The results showed the sign value obtained was smaller than $\alpha = 0.05$ ($0,000 < 0.05$) and the average score of the student achievement motivation questionnaire in the class that was taught with a quantum teaching model with an android handphone was 53.23 and the class taught the quantum teaching model without using android handphones has an average score of 50.16, so the achievement motivation of students in Indonesian lectures in classes taught with the quantum teaching model with an android handphone is more effective than classes taught with a quantum teaching model without using an android handphone . The quantum teaching model using the android handphone is effectively used on Indonesian language learning in the era of the industrial revolution 4.0.

Key words: quantum teaching models, android handphone, achievement motivation, Indonesian language learning, the era of the industrial revolution 4.0

Introduction

Indonesian has an important role in the tertiary curriculum. Indonesian is one of the common basic courses in the higher education curriculum that must be followed by all students. Indonesian as a source of values and materials in organizing study programs to deliver students to strengthen their personality as a whole Indonesian nation (Sari, 2019), and develop students' ability to speak Indonesian properly and correctly. (Dirjen Dikti, 2013). Indonesian is also a key to the success of achieving other learning objectives. With the Indonesian language, students will be able to express their ideas, exchange ideas, and understand ideas in each learning activity, so that the objectives of lectures are reached to the maximum (Noermanzah, 2015).

Learning is an effort to teach students to learn (Degeng, 2013). Learning Indonesian means an effort to teach Indonesian language skills to students. In essence, learning Indonesian is learning to develop communicative competence in students



(Diana, et.al, 2019). Indonesian learning aims to develop students' abilities in organizing ideas or concepts to be communicated to other parties, so that there is continuous interaction between ideas and resulting in an effective process of knowledge transfer and management (Dirjen Dikti, 2013).

Indonesian language learning in Higher Education still does not show learning outcomes as expected. Some research results state that mastery of Indonesian language by students in tertiary institutions is still lacking (Rahayu, 2007), students' ability to speak spoken language properly and correctly, speak politely, and write scientific papers that are still low (Kuntarto, 2017), and Indonesian language grades at the university level (Higher Education) are still low (Hudaa, 2018). That is, due to the students' negative assumptions about Indonesian in the form of (1) Indonesian naturally exists, (2) Indonesian is easy, and (3) Indonesian is lower than foreign languages (Rahayu, 2007). In addition, students generally tend not to be serious, and seem to underestimate Indonesian language courses (Kuntarto, 2017), and low interest in learning Indonesian (Hudaa, 2018). Another obstacle, the use of learning models that are not appropriate in the learning process (Siki, 2019), and teaching methods are still teacher centered by using more lecture methods (Kuntarto, 2017).

When viewed from learning technology, Mustaji (2015) in Suhartono, et.al

(2019) states, that learning activities in educational institutions including tertiary institutions are considered not to be maximally caused by lecturers and students. Lecturers are less able to organize the learning process, mistakenly perceive the learning process, and use learning concepts that are not relevant to the development of learning technology. Meanwhile, students are less motivated to think activities, so students only listen to lecturers and do not really understand the concept of the course seriously.

The Indonesian learning process must involve the activeness of students in creating effective learning (Setyosari, 2014). so students have knowledge and experience after studying a learning material. Tulbure (2012) in Suhartono, et. al (2019), effective learning has indicators including flexibility, creativity, and responsibility to provide a learning environment that can meet the individual needs of students. Degeng & Darmawan (2017) in Suhartono, et. al (2019) that the learning process must be interactive, inspiring, fun, challenging, and motivating.

Indicators of effective learning lies in the ability of learners to manage and create a comfortable atmosphere for students in the learning process. Lecturers must be able to create an effective classroom atmosphere, enable students to develop their potential, and perfect the learning process for students (Arends, 2013). An effective classroom



atmosphere will be able to create student enthusiasm in learning, so students will optimally be able to get a real learning experience (Suyitno, 2012). Therefore, lecturers must be right in choosing and implementing learning models that can foster student motivation to achieve the expected achievements.

The quantum teaching model is a lively change of learning with all its nuances, including all the connections, interactions, and also differences that maximize the learning moment (Deporter, et.al., 2010). The quantum teaching model focuses on dynamic relationships in the classroom environment, interactions that provide a foundation and framework for learning (Deporter, et.al., 2010). The quantum teaching model emphasizes communication and interaction between teachers and students, so as to create a conducive and effective learning atmosphere (Yahya, 2017). The learning with the quantum teaching model relies on a concept as its main principle, namely "Bring Their World to Our World, Bring Our World to Their World" (Deporter, et.al., 2010). This means that the first step of a teacher must understand or enter the world of students in the learning process.

The learning design of the quantum teaching model is known as the TANDUR (Grow, Natural, Name, Demonstrate, Repeat and Celebrate). This model is seen as being able to increase student motivation and

learning outcomes (Deporter, et.al., 2010). the quantum teaching model has five principles, including (a) everything is spoken; (b) everything aims; (c) experience before naming; (d) acknowledge every effort; and (e) if it is worth studying, it is also worth celebrating (Deporter, et.al., 2010). The advantages of quantum teaching are (1) increasing motivation, (2) increasing learning achievement, (3) increasing self-confidence, (4) increasing self-esteem, and (5) continuing the use of skills (Deporter, et.al., 2010).

The development of the Industrial Revolution era 4.0 requires learning Indonesian to adjust to the demands of this era. The biggest challenge of the Industrial Revolution era 4.0 is the acceleration of technological change that influences every life, so that maturity is needed strategy, mental strength to be able to compete in global competition and have a breakthrough in various innovations giving birth to a generation of people who are smart, quality, and competitive (Ristekdikti, 2018) . For this reason, learning Indonesian in the Industrial Revolution 4.0 era must improve the quality of learning by utilizing information and communication technology, such as android handphones.

Mobile is an electronic telecommunications device that has the same basic capabilities as a conventional fixed line telephone, but can be carried anywhere and does not need to be connected to a telephone



network using cables (Lestari & Yarmi, 2017). Android is an operating system for Linux-based mobile devices that includes an operating system, middleware and applications (Murtiwiwati & Lauren, 2013). Android handphones have a positive impact as a learning medium that makes the learning process easier with internet facilities (Lestari & Yarmi, 2017).

Utilization of technology in learning will increase student motivation and learning outcomes (Chuang, 2014). Hamalik in Arsyad (2010) suggested that the use of instructional media in the learning process can arouse new desires and interests, generate motivation and stimulation of learning activities, and bring psychological influences on students. The results of research conducted by Parise & Crosina (2012) and Boyinbode & Fasunon (2015) show that media technology is a supplement in classroom learning that has a significant influence on improving collaborative learning and teamwork. Juraman (2014) research results which concluded that the use of android applications by students is very useful in learning and effective enough to access educational information.

Learning motivation is an internal and external impetus for students who are learning (Uno, 2011), and one of the important things for students in the learning process to achieve achievement (Santrock, 2011). Strong learning motivation in students will influence

students to participate in learning optimally. Kristini & Mere (2013) states that motivation determines the level of success or failure of student learning activities. Riconscente (2014) states that learning motivation refers to (1) expectations, where students are able to complete the assignments given, and (2) grades, where students have a strong belief to succeed in learning. Learning motivation is very important in the learning process to achieve the expected results. One type of motivation that has an important role in student learning achievement is achievement motivation.

Achievement motivation is an encouragement or driving force in a person (student) with his own ability to achieve success (Djaali 2008). Achievement motivation is a very strong impetus by trying and working hard to achieve success and excellence, and trying to avoid failure (Fahli & Mujab, 2015). Achievement motivation can be interpreted as a person's desire to do something as well as possible in order to obtain results according to the expected goals.

The level of high and low achievement motivation in students greatly influences the expected learning achievement. Indications of low student achievement motivation, including laziness, lack of enthusiasm in learning, ignorance, less like challenging assignments, and prefer tasks that are easy and do not require much thought. Meanwhile, students who have high achievement



motivation tend to be diligent, passionate about learning, active, and like challenging tasks (Maja, 2013). This is in line with the results of research Lee & Liu (2009) states, that there are differences in achievement motivation of each individual (learners) which will also differ in the acquisition of learning outcomes and performance, so the higher the achievement motivation in individuals (students) will show the achievement of results learning and performance also tends to be higher. The results of research by Gupta, et.al (2012) and Suhartono, et.al (2019) show that students who have high achievement motivation show superior performance than students with low achievement motivation in achieving learning outcomes. Some of the results of these studies, prove that the higher the level of student achievement motivation, the higher the learning outcomes achieved.

Indonesian lectures at IAI Pangeran Diponegoro Nganjuk, students have used the Android mobile media in completing lecture assignments and have an influence on student achievement motivation in learning. The higher the level of student achievement motivation, the higher the learning outcomes. For this reason, the quantum teaching model using the android handphone needs to be tested in Indonesian language lectures, so students have the motivation to excel in learning Indonesian.

Research Methods

This research uses quasi experimental research. Sampling with purposive sampling technique, because it has a specific purpose. The research sample is the Islamic Religious Education (PAI) study program semester 1 of the academic year 2019/2020, with 62 students consisting of class 1 A (experimental class) totaling 30 students and class 1 B (control class) totaling 32 students. In this study there are two variables including the independent variable, the quantum teaching model with android mobile media and the dependent variable, namely student achievement motivation.

The research instrument used was a questionnaire to measure student achievement motivation. After being tested for validity and reliability, then a normality and homogeneity test was performed with a significance value greater than the significance level of 0.05 ($\text{Sig} > 0.05$).

In hypothesis testing using the Independent-Samples Test t-test assisted by SPSS. The alternative research hypothesis is accepted, if the significance value is smaller than the significance level of 0.05 ($\text{Sig} < 0.05$), and if the significance value is greater than α ($\text{Sig} > 0.05$), then the alternative research hypothesis is rejected.

Findings and Discussions

In this study aims to test the effectiveness of the Quantum teaching model with android mobile media on student



achievement motivation in Indonesian lectures in the industrial revolution era 4.0. The experimental class was taught with Quantum teaching using an android handphone (QM) and the control class was taught with a quantum teaching model without using an android handphone (QT).

After testing the reliability and validity of the instruments used in this study, it can be analyzed that the results of observations of the learning feasibility of the quantum teaching model using the android handphone and the quantum teaching model without using the android handphone show an average score of 100 or very good category. in accordance with the stages of learning.

Test of Homogeneity of Variances			
Motivasi Berprestasi			
Levene Statistic	df1	df2	Sig.
.357	1	59	.552

Furthermore, the results of observations of student learning activities in the experimental class obtained an average score of 3.86 better than the average score in the control class of 3.71. This shows that the quantum teaching model using the android handphone is effective against student achievement motivation.

The results of the normality and homogeneity tests of student achievement motivation questionnaires in both classes of research samples, as the following table:

Table 1. Normality Test Questionnaire Student Achievement Motivation Score

Tests of Normality

	Model Pembelajaran	Kolmogorov-Smirnov ^a		
		Statistic	df	Sig.
Motivasi	QM	.142	30	.123
Berprestasi	QT	.144	31	.102

a. Lilliefors Significance Correction

Based on table 1, the significance values in both classes show significance values above the significance level α 0.05. The experimental class (quantum teaching model using an android handphone) is sig. 0.123 and the control class (quantum teaching model without using an android handphone) is sig. 0.102, so the value of sig. $0.123 > 0.05$ and sig. $0.102 > 0.05$, then the level of achievement motivation of students from both classes is normally distributed.

Table 2. Homogeneity Test Questionnaire Achievement Motivation Student

Homogeneity test results of student achievement motivation in table 2 show the significance value is 0.552. This value, above the significance level of 0.05 ($0.552 > 0.05$), means that the student achievement motivation score data from both classes has the same (homogeneous) variance value.

After the data analysis prerequisite test, the Independent Samples Test was continued with the help of SPSS to find out the difference in effectiveness between the classes taught with the quantum teaching model using an android handphone and the class taught with a quantum teaching model

without using an android handphone against student achievement motivation. The results of the test are presented in the following table:

Table 4. Independent Samples Test

		Independent Samples Test				
		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	Df	Sig. (2-tailed)
Motivasi Berprestasi	Equal variances assumed	.357	.552	5.612	59	.000
	Equal variances not assumed			5.603	58.041	.000

The results of the Independent Samples Test in Table 4 show that there are differences in student achievement motivation between classes taught by the quantum teaching model using the android handphone and the classes taught by the quantum teaching model without using the android handphone. This is known from the sign value obtained is smaller than $\alpha = 0.05$ ($0,000 < 0.05$). The results of this test are reinforced by the average achievement motivation questionnaire scores from the two treatment classes presented in the following table:

Table 5. Average Achievement Motivation Questionnaire Scores

Group Statistics					
	Model Pembelajaran	N	Mean	Std. Deviation	Std. Error Mean
Motivasi Berprestasi	QM	30	53.23	2.239	.409
	QT	31	50.16	2.035	.365

Table 5, shows that the average student achievement motivation questionnaire scores in classes that are taught with a quantum teaching model with an android handphone is 53.23 and the class taught with a quantum teaching model without an android mobile has an average score of 50, 16, it means that the quantum teaching model using an android handphone is more effective than the classes taught with the quantum teaching model without using an android handphone.

Learning by applying a quantum teaching model using an android handphone is more effective, because the quantum teaching model is based on constructivism learning theory. This learning theory, students build their own knowledge individually and collectively (Dagar & Yadav, 2016). This gives motivation to students to achieve achievements with the active involvement of students in the lecture process. Setyosari (2014) and Boholano (2017) state that learning that involves student activity can create effective learning. Moreover, the application of the quantum teaching model coupled with the android mobile media as digital media in the era of the industrial revolution 4.0, added motivation for student achievement.

Android handphones have been equipped with various choices of features such as mini computers, thus providing convenience in communicating; search for information about anything, anywhere, and



anytime; make the learning process easier with the internet facilities provided (Lestari & Yarmi, 2017). The results of Chuang's (2014) study state that the use of technology in learning will increase motivation and student learning outcomes. Therefore, in learning (Indonesian language) it is necessary to create an atmosphere of learning that involves student activity and provides an atmosphere that can strengthen student achievement motivation.

Students who have high achievement motivation will tend to succeed in their learning tasks (Slavin, 2017). High achievement motivation in students will make students excel in achievement and graduate on time, thus helping this nation to realize national goals and ideals (Trisno, 2010). Achievement motivation of students in Indonesian lectures needs to get attention by applying learning models and learning media that are in accordance with the development of the current era, such as the quantum teaching model that has an android mobile phone that has been tested for its effectiveness, so it needs to be developed in learning.

Conclusion

Based on the results of research and discussion, it can be concluded that the achievement motivation of students in Indonesian lectures between classes taught by the quantum teaching model using Android mobile phones and classes taught by the

quantum teaching model without using an Android mobile phone showed significant differences. Student achievement motivation in Indonesian lectures in classes taught by the quantum teaching model using an android mobile phone is more effective than classes taught with a quantum teaching model without using an android mobile phone. This is seen from the results of the Independent Samples Test, that the sign value obtained is smaller than $\alpha = 0.05$ ($0,000 < 0.05$) and the average student achievement motivation questionnaire score in classes taught by the quantum teaching model with Android mobile media ie 53.23 and classes taught by the quantum teaching model without using an android mobile phone have an average score of 50.16.

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