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The Effectiveness of Quantum Teaching Based on Digital Media on Self-Efficacy

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Abstract :

This study aims to describe the effectiveness of digital media-based quantum teaching on students' self-efficacy in the learning process in terms of gender. This research is based on the lack of use of learning models and media, causing low self-efficacy owned by students. The purpose of this study was to determine the effectiveness quantum teaching of digital media-based. This study uses a quasi-experimental with a quantitative approach. The research design used was a pretest-posttest control group design. The population in this study amounted to 180 students, with a sample of 60 students including 30 female students and 30 male students. Sampling in this study using purposive sampling technique. data analysis technique used a nonparametric test (Run Test). The results of data analysis show a sig value of 0.000, this value represents that there is an influence of the digital media-based quantum teaching model on students' self-efficacy.

INTRODUCTION

The progress of a nation's life is largely determined by the teacher. A well-organized teacher can create a quality, intelligent, adaptive and moral generation. Teachers are also an important component in learning activities. Learning is a systematic process where each component has a very important meaning for successful learning of several teaching components that are integrated with each other in achieving goals (Rahardiana, 2015). The complex teaching and learning process does not only involve the teacher but also involves a number of components consisting of objectives, materials, media, teaching systems, learning resources, interaction management, evaluation and the students themselves (Mahaningtyas, 2021; Abizar, 2017). Basically the student learning process is strongly influenced by

emotions. If students feel compelled to take part in a lesson, they will find it difficult to accept the lessons or subject matter provided by the teacher. Therefore, teachers must be able to create a conducive atmosphere and make learning effective and fun. Therefore, teachers need to learn a learning model that can be applied in teaching and learning activities, with the intention of students or teachers simultaneously having a reciprocal relationship (Asmaningrum, 2019; Shoimin, 2016). One of the problems with students today is that students' self-efficacy is low, so an effective learning model is needed. Along with the times, technology is also developing rapidly. However, it is unfortunate that this technology is still minimally utilized in the learning process. The application of effective learning models and media can increase students' self-efficacy. For this reason, through this research, quantum teaching based on digital media is expected to improve and overcome these problems so that students' self-efficacy can increase.

Quantum teaching is a very fun way of learning by utilizing all existing facilities and can be used in learning activities. The quantum teaching model can provide assistance for the creation of an efficient and effective learning environment by using various elements found in students, including curiosity and a learning environment through various interactions in the classroom. Not only that, this learning model can form a good emotional bond. When carrying out learning, quantum teaching can help provide teaching by utilizing the right and left hemispheres of the brain according to their respective functions (Leasa and Ernawati., 2013). While digital media is a device that utilizes digital technology. (Andani, 2018; Prisgunanto, 2015). Through the use of digital media in the learning process using the quantum teaching model will make teaching and learning activities more effective. Effective learning is able to increase students' self-efficacy so that they are able to understand the material being taught easily and their learning outcomes will also be better (Rasiman and Pramasyahsari, 2014).

Literature review

1. Quantum Teaching Learning.

The quantum teaching was first practiced in a school called Super Camp. The idea of this quantum teaching is from an American born named Bobbi DePorter. The term quantum according to DePorter means "interaction that converts energy into

light" and the term quantum can be interpreted as "interaction that converts energy into light because all life is energy". DePorter applies this in learning activities. He stated that as a student, learning aims to achieve as much enlightenment, interaction, connection, and inspiration as possible. The Quantum Teaching learning model is a lively learning style change with all its nuances with the main principle "bring their world into our world, and bring our world into theirs". Quantum Teaching contains the principles of an effective, efficient, and progressive teaching design system along with the method of presentation to get amazing learning outcomes in less time (Shoimin, 2016). learning model Quantum Teaching can provide assistance for the creation of an efficient and effective learning environment by using various elements found in students, including curiosity and a learning environment through various interactions in the classroom. Not only that, this learning model can form a good emotional bond. When carrying out learning, Quantum Teaching can help provide teaching by utilizing the right and left hemispheres of the brain according to their respective functions (Leasa and Ernawati., 2013).

2. Digital Learning

Media Digital media is a digital media is a content format that can be accessed by digital devices. This digital media can be in the form of websites, blogs, social media, digital images and videos, digital audio, and others. Digital media is also defined as a content format that can be accessed by digital devices. This digital media can be in the form of websites, blogs, social media, digital images and videos, digital audio, and others. The use of digital media as learning has undergone significant development. The presence of digital media provides a variety of educational innovations, where conventional rigid and monotonous learning will be replaced by learning using digital media which is considered more practical, flexible, not limited by space and time. Digital learning media is one of the media that can attract students' attention because this digital learning media does not make students bored, even the classroom atmosphere can be fun (Garini, 2020).

3. Self- Efficacy

Self-efficacy is a person's belief in his ability to organize and take the necessary actions in achieving a certain level of performance. In the learning process, self-efficacy is a very important factor in determining whether students excel or not. Self-

efficacy is useful for deciding whether certain behaviors will be formed or not, a person not only considers information and beliefs about possible losses or gains, but also considers the extent to which individuals can regulate these behaviors. Self-efficacy is not an absolute innate factor. Self-efficacy can be changed, formed, increased or decreased based on one or a combination of four sources that affect self-efficacy, namely mastery experience, vicarious experience, verbal persuasion, physiological and emotional states. (Yasmin, 2020)

METHOD

This research is an experimental study using a quasi-experimental through a quantitative approach. The research design used was pretest posttest control group design. The population in this study amounted to 180 students, with a sample of 60 students including 30 female students and 30 male students. Sampling in this study using purposive sampling technique. data analysis technique used a nonparametric test (Run Test) which had previously been carried out with the Shapiro-Wilk normality test.

FINDINGS AND DISCUSSION

Quantum Teaching is a teaching system that adopts new ways or schemes to facilitate teaching and learning activities by combining artistic elements with targeted achievements. Thus, Quantum Teaching can include specific directions to support effective and efficient teaching, create a pleasant learning environment, deliver curriculum, and facilitate the learning process. Based on this, there are five principles of Quantum Teaching in learning, including 1) everything talks means that everything that is in the classroom environment, inanimate objects or media that we use in the learning process has an implied meaning, 2) everything aims means that all teacher actions has a goal for student progress, 3) experience before naming means if students have received or know an information they will learn this will be easier and optimal in the learning process. 4) admit every effort, which means that learning is an activity to delay pleasure for a moment to seek knowledge in order to get true pleasure, so that if students have tried their best to learn, the teacher must give appreciation to them in order to gain skills and confidence (self-efficacy), 5) if it is worth learning then it is worth celebrating,

meaning that celebrations can provide feedback on the progress of student achievement, with a celebration students will be more motivated to do other extraordinary things. In this case the model Quantum Teaching learning in its implementation in the -based learning process Digital media has a relatively large impact on students' self-efficacy. Digital media itself is a tool that has a big role especially in improve student self-efficacy.

Table 1. normality test

		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	Df	Sig.
Self Efficacy Results		.234	35	.000	.859	35	.000

Lilliefors Significance Correction

Based on the results of the Shapiro-wilk normality test, the value of sig is 0.000, because the value of sig <0.05, the data is not normally distributed. so with this, to test the hypothesis, it is continued with a nonparametric test, namely the Runs Test.

Table 2. Nonparametric Runs Test

Self Efficacy Results

Test Value ^a	89.03
Cases < Test Value	21
Cases >= Test Value	14
Total Cases	35
Number of Runs	6
Z	-4.044
Asymp. Sig. (2-tailed)	.000

Mean

The test results show a sig value of 0.000, because the sign value <0.05 then Ha is accepted, based on the results of data analysis shows that the implementation of the digital media-based Quantum teaching learning model has an influence on students' self-efficacy. This is also in line with the results of research conducted by Rahmawati, namely the application of android learning media can increase students'

self-efficacy on acid and base material. (Rahmawati, 2019; Mahananingtyas, 2016; Baroroh, 2017)

In-text Citations

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CONCLUSION

Based on the results of the study, it can be concluded that the implementation of the digital media-based Quantum teaching learning model has an influence on students' self-efficacy. The results of data analysis using nonparametric tests showed a sig value of 0.000.

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