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TECHNOLOGICAL PEDAGOGICAL CONTENT KNOWLEDGE -BASED LEARNING MODEL TO IMPROVE UNDERSTANDING AND MOTIVATION PGSD STUDENTS

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Abstract: TPACK is knowledge about the complex interaction of domains of knowledge principles (content, pedagogy, technology). Learning in modern times demands teacher understanding to be able to collaborate with technology. So not only pedagogic aspects but content and technology aspects are also a consideration in terms of implementing modern and innovative classroom learning. There are 3 kinds of understanding: conversion (translation), giving meaning (interpretation) and making extrapolation (extrapolation). In mathematics, for example, being able to convert (translation) about words into symbols and vice versa, being able to interpret (interpretation) of a similarity, able to estimate (extrapolate) a tendency from an image. This research was conducted on PGSD students in grades A and D in semester 1 of the five classes using the cluster random sampling method. Two sample classes were selected, namely class A as an experimental class taught using a TPACK-based learning mode (Technological Pedagogical Content Knowledge) with a total of 30 students, while for the control class taught by the natural method, class D was chosen with 25 students.Student learning outcomes with the TPACK learning model are better than the natural or ordinary learning model where the average student learning outcome in the experimental class is 90,1 while in the control class is 75. There are differences in learning outcomes between the experimental class and the control class. The results of the understanding and motivation questionnaire in the experimental class were better with the results of 85,9 than the results of the understanding and motivation questionnaires in the control class with the results of 70,3.
Keywords: TPACK-BASED Learning Model, Improve Understanding and Motivation

INTRODUCTION:

The challenges of world development are increasingly oriented to demand the availability of human resources (HR) who master science, technology and art (IPTEKS). The rapidly changing world must be accompanied by educational practices that are relevant to the demands of these changes. Such a phenomenon occurs prominently with respect to the development of information and communication

The development of information technology has changed various aspects of human life, including education (Warsito, 2009). In early 2006 the development of educational technology developed towards solving learning problems. This paradigm is oriented to describe educational technology in order to overcome learning problems in a more directed and controlled manner

(Raiser, 2008). Listening to its development, educational technology can be said as a systematic process in helping to solve problems in learning (Miarso, 2004).

Shulman (1987) mendefinisikan subjek pengetahuan pengajaran konten materi sebagai pengetahuan konten dan pedagogik (PCK). Pengetahuan konten dan pedagogik mengidentifikasi bagian khusus pengetahuan untuk mengajar. PCK merupakan gabungan content and pedagogy in understanding how specific topics and problems or issues are organized, represented and adapted to the interests and abilities of diverse learners, and explained in the form of instruction. Content and pedagogic knowledge are the categories that are easiest to distinguish the understanding of content specialists from educators (Kocoglu, 2009).

TPACK is knowledge about the complex interaction of domains of knowledge principles (content, pedagogy, technology). Learning in modern times demands teacher understanding to be able to collaborate with technology. So not only pedagogic aspects but content and technology aspects are also a consideration in terms of implementing modern and innovative classroom learning. Teachers must have an understanding of the complex interactions between 3 basic components, namely PK, CK, and TK dengan cara mengajarkan materi menggunakan metode pedagogik dan teknologi yang sesuai (Mishra & Koehler, 2006).

In the big Indonesian dictionary what is meant by "understanding" is a deep understanding. While the word "understanding" implies the ability of intelligence to capture the meaning and meaning of the material being studied. So it can be concluded that understanding is the ability of intelligence to capture the meaning and significance of the material studied in depth. Bloom (in Ruseffendi, 1991: 221) states, There are 3 kinds of understanding: conversion (translation), giving meaning (interpretation) and making extrapolation (extrapolation). In mathematics, for example, being able to convert (translation) about words into symbols and vice versa, being able to interpret (interpretation) of a similarity, able to estimate (extrapolate) a tendency from an image.

According to Hosnan (2014: 437) that learning outcomes are determined by two things, namely ability and seriousness of learning. The seriousness of learning is influenced by the student's learning motivation. To get the motivation and enthusiasm of students in learning, one way that can be done is to arrange student-centered learning. That way, students can play an active role in learning.

METHOD

This research was conducted on PGSD students in grades A and D in semester 1 of the five classes using the cluster random sampling method. Two sample classes were selected, namely class A as an experimental class taught using a TPACK-based learning mode (Technological Pedagogical Content Knowledge) with a total of 30 students, while for the control class taught by the natural method, class D was chosen with 25 students.

The variables in this study consisted of two variables, namely the independent variable and the dependent variable. The independent variable in this study is the TPACK (Technological Pedagogical Content Knowledge) model, while the dependent variables in this study are understanding and motivation.

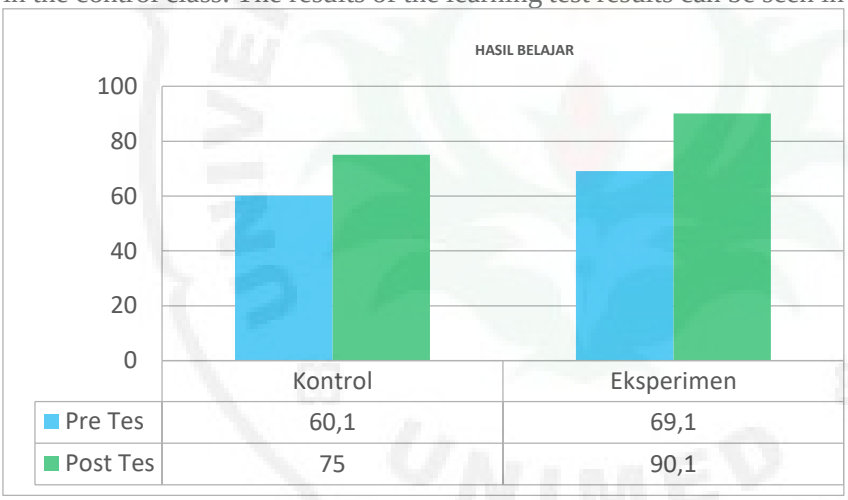
This Cluster Random research method is a type of research that includes quasi-experimental research, which aims to determine whether there is a result of "something" imposed on students. This study involved two classes of samples that were given different treatments. The experimental class was given a treatment, namely the TPACK (Technological Pedagogical Content Knowledge) model, while the control class was given a "natural" treatment which is usually done with a direct instruction model. The design of this research is in the form of Two Group Pre-Test Post-Test Design. At the end of the treatment both groups were tested with the same measuring instrument and became research data. Accordingly, the design of this study can be presented with a 2 x 2 factorial design with a 2-way analysis of variance (ANOVA) technique.

To obtain the data needed in this study, the researcher used two data collection instruments. The test research instrument in this study was a learning outcome test in the form of student answers in the form of a test that had been tested for validity, reliability, level of difficulty and discriminatory power. The second instrument is the result of a questionnaire on the understanding and motivation of the team that has been validated by experts and has been tested and used by several previous studies.

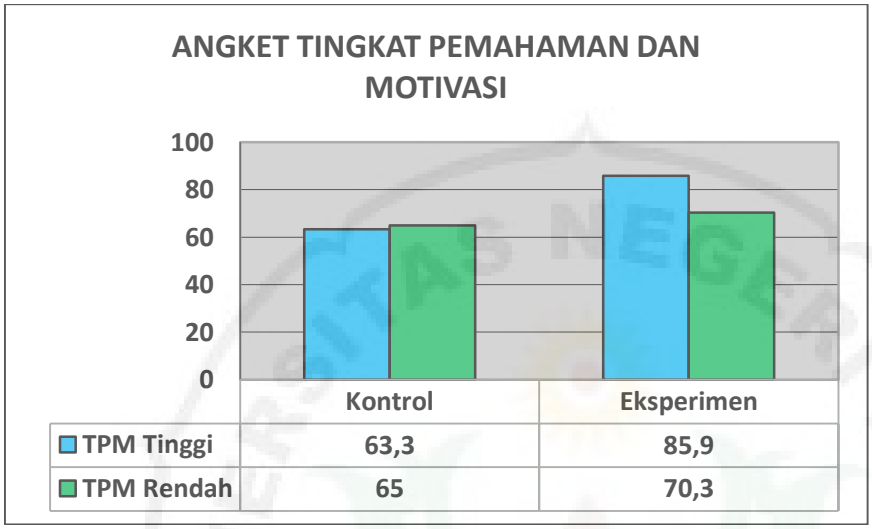
RESULTS AND DISCUSSION

Result

The description of the data presented in the results of this study consists of the results of the learning outcomes test and a questionnaire sheet using the TPACK (Technological Pedagogical Content Knowledge) model in the experimental class and the direct instruction model in the control class. The results of the learning test results can be seen in Figure 1. The following.



The results of the analysis obtained the significance value of the learning model of 0.000. Because the value of sig. 0.000 <0.05, so the results of hypothesis testing reject H0 or accept Ha at the 5% alpha level, meaning that there are differences in student learning outcomes who are taught with the TPACK model in social studies courses. In other words, from the results of this hypothesis test, it can be concluded that students who are taught by the TPACK model get an average score of better learning outcomes than students who are taught by natural or ordinary methods. The significance value of teamwork skills is 0.050. Because the value of sig. 0.050 <0.05, so the results of hypothesis testing reject H0 or accept Ha at the 5% alpha level, meaning that there are differences in the social studies learning outcomes of students who have understanding and motivation in class A and class D (can be seen in Figure 2 below).



Discussion

Based on the data analysis, it can be explained that the learning outcomes of students who are taught with the TPACK learning model give different results in the class of students who are taught with the natural or ordinary model. This can be seen from the learning outcomes obtained by students who have a level of understanding and motivation above the average, the results are better or higher than students who do not have a level of understanding and motivation below the average.

Student learning outcomes with the TPACK learning model are better than the natural or ordinary learning model where the average student learning outcome in the experimental class is 90,1 while in the control class is 75. There are differences in learning outcomes between the experimental class and the control class. The results of the understanding and motivation questionnaire in the experimental class were better with the results of 85,9 than the results of the understanding and motivation questionnaires in the control class with the results of 70,3.

CONCLUSIONS AND SUGGESTIONS

There are differences in learning outcomes with students' TPACK learning model in influencing student learning outcomes. The ability to understand and the level of motivation affect student learning outcomes in the experimental class with the application of the TPACK learning model, while the ability to understand and increase motivation do not affect student learning outcomes in the control class. Try to be thorough and authentic in conclusions. If your hypothesis is similar to a previous paper, you should establish why your research and results are original.

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