

**THE INFLUENCE OF INTEGRATED GUID INQUIRY LEARNING MODEL
TECHNOLOGICAL PEDAGOGICAL CONTENT KNOWLEDGE CONCEPT
ORGANIZATIONAL SYSTEMS OF LIVING THINGS ON METACOGNITIVE SKILLS AND
CRITICAL THINKING ABILITY OF STUDENTS JUNIOR HIGH SCHOOL (SMP) BURU
DISTRICT, MALUKU PROVINCE**

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ABSTRACT

The guided inquiry learning model integrated with Technological Pedagogical Content Knowledge is a combination of learning models and approaches that utilize technology in the learning process. This study aims to improve students metacognitive skills and critical thinking skills. The material taught in this study is the system of living organizations (cells). This research was conducted in February 2021 in Buru District, Maluku Province. This research was conducted in three schools namely SMP Negeri 5 Buru, SMP Negeri 9 Buru and SMP Negeri 16 Buru, by using a quasi-experimental design type. The populations of this study were VII.a and VII.b at SMP Negeri 5 Buru, SMP Negeri 9 Buru and SMP Negeri 16 Buru, each with a total of 66 students. Data analysis used the Non-Parametric test with the Chi-Square test. The results of this study indicate that, in the metacognitive study there was no effect on SMP Negeri 5 Buru experimental and control classes and experimental class SMP Negeri 9 Buru with a $\text{sig} > 0.05$, while in the control class SMP Negeri 9 Buru and experimental and control classes at SMP Negeri 16 Buru the $\text{sig} < 0.05$ it can be concluded that it has an effect. On critical thinking skills at SMP Negeri 5 Buru, SMP Negeri 9 Buru and at SMP Negeri 16 Buru in the experimental and control class the value is $\text{sig} < 0.05$. Based on these data, it can be concluded that there is an influence of the guided inquiry learning model integrated with Technological Pedagogical Content Knowledge on students' critical thinking skills.

Keywords: *inquiry, Pedagogical, metacognitive, thinking, critical.*

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INTRODUCTION

Education is one of the foundations in advancing a nation, the better the quality of education, the better the quality of a nation. Factors of low or high quality education are supported by the education management sector, gaps in educational facilities and infrastructure in urban and rural areas, support from the government, low quality of teachers, and weak learning evaluation standards (Fitri, 2021). One of the most influential factors is the low quality of teachers or teachers. Teachers have a very important role in determining the quality and quality of education. Teachers are required to be superior and creative in providing and conveying learning to students. One way that can be done is by using the learning methods needed in the learning process in the classroom. Teachers must be able to apply learning models and methods that are appropriate to the subject matter, because the selection of appropriate learning models and methods is an alternative in an effort to improve the quality of knowledge, so that students can easily understand what is being learned.

The guided inquiry learning model has a very important role in educational success. The guided inquiry learning model can improve students' metacognitive skills and thinking abilities. The guided inquiry learning model is a learning model that can help students develop mastery of concepts and students' critical thinking skills so that they become more active and the learning process becomes student-centered. In the guided inquiry learning process, the teacher does not just let go of the activities carried out by students, in other words the teacher must provide direction and guidance to students in carrying out learning activities (Fatmawati, 2020). Teachers besides having the ability to teach in class must also be able to integrate the use of technology in learning. In the 21st century, Technological Pedagogical Content Knowledge (TPACK) is considered a potential framework that can provide new techniques for teachers in Indonesia in solving problems related to the integration of computers and information technology in teaching and learning processes (Bahriah, 2019).

Based on the results of observations in Buru District, Maluku Province at SMP Negeri 5, SMP Negeri 9, and SMP Negeri 16 that students tend to have difficulty understanding or recalling the material on the organizational systems of living things given by the teacher. Teachers in class have tried to use learning methods so that students are more active and easy to remember material, but teachers are still confused about how to implement innovative and creative learning models. So that in the learning process that takes place many students are passive. Students tend to accept what is the information conveyed by the teacher or what is written in the book, students are also passive in answering questions from the problems posed and do not express opinions to make solutions to these problems. As a result, the learning process that takes place does not encourage students to be able to improve students metacognitive skills and critical thinking skills in learning. Less than optimal learning can cause students metacognitive skills and critical thinking skills to be hampered.

METHOD

Type of research is quasi-experiment to determine the effect of the integrated guided inquiry learning model on students metacognitive skills and critical thinking abilities. This research was conducted at 3 schools, namely SMP Negeri 5, SMP Negeri 9, and SMP Negeri 16 in Buru District, Maluku Province. The population in this study were 66 students in class VII at SMPN 5, 66 students at SMPN 9, and 66 students at SMPN 16 in Buru District, Maluku Province. The sampling technique used was purposive sampling. The research instrument uses observation sheets, documentation and tests of metacognitive skills and critical thinking skills.

DISCUSSION RESULT

The results of the integrated guided inquiry learning model integration of technological pedagogical content knowledge on the metacognitive skills of class VII students of SMP Negeri 5 Buru, SMP Negeri 9 Buru and SMP Negeri 16 Buru shows that the metacognitive skills have the highest mean value at SMP Negeri 9 Buru which is taught by integrating guided inquiry learning models in the experimental class with a mean value of 84.24. Whereas in the control class it has a mean value of 79.84. In SMP Negeri 5, the experimental class has a mean value of 83.48, while the control class has a mean value of 78.03. In SMP Negeri 16 Buru the experimental class had a mean value of 83.03, while in the control class it had a mean value of 77.87.

The difference in mean values between the experimental class and the control class is caused by the experimental group using the guided inquiry learning model, where in the learning process the teacher is only a guide and students are directly involved so that they are motivated to learn besides that students also tend to be more active and enthusiastic in learning, and students are also given the opportunity to participate in the learning process. This is in line with the notion of guided inquiry, guided inquiry learning strategies are a series of learning activities that emphasize critical and analytical thinking processes to seek and find answers to a problem in question (Elzira, 2018). So that in practice, during guided inquiry learning activities students are not only required to master the subject matter but how they can use their potential to develop their thinking abilities optimally. This is reinforced by Elzira (2018) stating that inquiry is an approach, in which the teacher involves students' critical thinking skills to analyze and solve problems systematically through identifying problems, making hypotheses, collecting data, analyzing data and drawing conclusions. Through these steps students can find a principle, law or theory.

Apart from using the guided inquiry method, it is also integrated with technological pedagogical content knowledge (TPACK) which makes students more enthusiastic in the learning process so they are not passive. Technological pedagogical content knowledge (TPACK) is a framework regarding the knowledge needed by teachers to integrate technology in learning effectively (Ibnu, 2019). From the final data analysis the hypothesis testing of students metacognitive skills in the experimental class uses the TPACK integrated guided inquiry learning model and the control class uses conventional learning models (lectures) with

hypothesis testing using non-parametric tests each of which has a value that satisfies significance. Class VII.a and VII.b SMP Negeri 5 Buru, SMP Negeri 9 Buru and SMP Negeri 16 Buru have different significance values

The results of the TPACK Integrated Inquiry Model test with Metacognitive Skills, in the experimental and control classes at SMP Negeri 5 Buru, as well as the experimental class at SMP Negeri 9 Buru, the sig value was > 0.05 . This means that there is no effect of the guided inquiry learning model integrated with Technological Pedagogical Content Knowledge (TPACK) material for organizational systems of living things on metacognitive skills in the control class and the experimental class for students of SMP Negeri 5 Buru and the experimental class for SMP Negeri 9 Buru. There is no influence of the learning model because of the high value obtained so that it is classified as maximum data. According to Azwar (2005) the factors causing the occurrence of insignificant values are due to high values so that the distribution of data is not normal. The high score obtained is caused by several factors, namely the material that has been previously taught by the teacher, as well as the readiness of students in learning. Readiness for student learning is very influential on the learning process that is carried out. According to Slameto (2010) readiness is the overall condition of a person who makes him ready to respond or answer in a certain way to certain situations. The conditions in question are physical and psychological conditions.

Wahyuni (2005) states that the condition of students who are ready to receive learning from the teacher, students will try to respond to questions posed by the teacher and with learning readiness students are motivated to optimize their learning outcomes. This is also in line with Sinta's research (2017) which concluded that learning readiness greatly influences student learning outcomes. Whereas in the control class SMP Negeri 9 Buru and SMP Negeri 16 Buru the experimental and control classes had a sig value < 0.05 which means that there was an influence of the integrated guided inquiry learning model of technological pedagogical content knowledge (TPACK) on organizational systems material for living things life on the metacognitive skills of control class students at SMP Negeri 9 Buru and SMP Negeri 16 Buru experimental and control classes. This influence relationship can be explained by the research of Sahbani and Nurmalinah, (2009) that the existence of metacognitive awareness in students can make students have the ability to regulate how to learn. Rosyidah, (2016) revealed that metacognitive skills can be empowered in learning which provides learning experiences for thinking, organizing ideas and thoughts, and managing time and ways of learning. Ningrum (2021) explains that through metacognitive skills, students become independent learners, students can also manage time and plan learning process projects. In line with this, independent learning, is responsible for the progress of their own learning and their own efforts, is able to monitor and evaluate student learning activities before and after learning activities.

CONCLUSION

The guided inquiry learning model integrated with technological pedagogical content knowledge (TPACK) had an effect on increasing the metacognitive skills of the control class at SMP Negeri 9 Buru and SMP Negeri 16 Buru for the experimental and control classes, but at SMP Negeri 5 Buru for the experiment and control class and for SMP Negeri 9 Buru the experiment has no effect because of several factors, namely the teacher has taught the material and the readiness factor of students when learning. Meanwhile, this learning model influences the critical thinking skills of experimental and control class students.

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