



PRELIMINARY STUDY: THE IMPACT OF USING GUIDED INQUIRY-BASED TEACHING MATERIALS ON STUDENT LEARNING INDEPENDENCE

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Article Info

Received: 30 Mar 2023

Revised: 15 Apr 2023

Accepted: 24 Apr 2023

OnlineVersion: 25 Apr 2023

Abstract :

This research is a literature review. The purpose of this study is to determine the impact of the use of guided inquiry teaching materials on student learning independence, especially in Physics material. The data in this study are secondary data, namely data obtained from books, journals, articles, and proceedings. Through the review of the information carried out, it was found that guided inquiry teaching materials can encourage students to learn independence in physics material. Teachers are expected to be able to develop guided inquiry teaching materials to train students to learn independence.

Keywords: Independent Learning; Guided Inquiry; Teaching Materials

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INTRODUCTION

Learning aims to teach students, meaning learning is said to be successful if there is a learning process. Learning is an activity or effort carried out to produce changes in behavior that are relatively long-lasting and bring changes in a positive direction (Setiawan, 2017; Sahidin, 2013). Changes in behavior obtained from the results of this learning activity can be in psychomotor, affective, and cognitive aspects. This behavior change is obtained through physical activities or one's experience of learning resources and the environment (Suyono & Hariyanto, 2014; Suardi, 2018). From the definitions presented, it can be said that a person can be said to have learned only if he experiences a change in behavior for the better, lasts a long time, and the positive behavior change comes from the actions a person takes to gain a learning experience. From this definition, it is appropriate that learning in schools encourages students to carry out activities that provide meaningful experiences. One of the things that teachers need to pay attention to create meaningful learning is adapting the learning process to the characteristics of students (Dewi, 2021; Safitri, Rusmiati, Faujiah & Prihatini, 2022). Meaningful learning can occur if the teacher can optimize all learning components properly.

Talking about learning, there are at least three main things: teachers, students, and learning support components. To create quality education, these three things must mutually support one another. The teacher must be able to design a good lesson so that the learning process occurs. Meanwhile, students must have perseverance and independence in learning because teachers have limited time to assist students in learning. "Learning independence can be interpreted as the nature and ability of students to carry out active learning activities, which are driven by motives to master a competency that

they already have" (Aini & Taman, 2012; Harahap, Harahap & Simarmata, 2021). A person can be categorized as having the nature of learning independence if he has the will to carry out active learning activities without having to be forced but because of his own curiosity to master the material. Advances in technology support students to get the information needed. However, previous studies' results showed that students' learning independence was categorized as lacking. The low independence of student learning results from teachers who have not been able to design student-oriented learning active in finding knowledge and teaching teachers who are not quite right (Woi & Prihatni, 2019; Jusmaisyaroh, Napitupulu & Hasratuddin, 2015). Other research writes that the low independence of student learning is caused by a lack of students' ability to overcome a problem; this causes students to distrust themselves and become dependent (Ansori & Herdiman, 2019). Seeing the causal factors of this learning independence, the teacher should be able to design learning that can encourage students to work actively in discovering concepts and facilitate independent learning.

The effort that can be done by the teacher in helping to achieve student learning independence is to maximize the learning components. One component of learning that is no less important than other learning components is teaching materials. Teaching materials are everything that is used by teachers in the learning process to achieve the specified basic competencies (Kosasih, 2021; Magdalena et al., 2020). Teaching materials are all used by teachers in the classroom to help students understand the material presented. There are various teaching materials models that teachers can design, one of which is the guided inquiry model of teaching materials. The guided inquiry model emphasizes the involvement of students to play an active role in discovering, such as formulating problems, making hypotheses, designing and conducting experiments, collecting data, conducting data analysis, and making conclusions (Nurmayani, Doyan, & Verawati, 2018; Ayuningtyas, Soegimin & Supardi, 2015).

Guided inquiry teaching materials are teaching materials that are deliberately designed to involve students actively discovering concepts in learning material. This certainly requires willingness, perseverance, and independent learning. Guided inquiry-based teaching materials are teaching materials that encourage students to find solutions to a given problem. Previous research has shown that guided inquiry-based administrative modules can increase student learning independence (Swandhana, Churiyah, & Juariyah, 2016). Syamsudin, Ibrahim, & Widodo (2016) research shows that developing learning tools (LKS, syllabus, lesson plans, and student books) can increase learning independence. The same thing was found in research (Ramadhan, 2022), stating that modules developed based on guided inquiry were able to increase student learning independence. Seeing the important role of teaching materials in encouraging and enhancing student learning independence and the importance of learning independence for each student, the teacher should be able to encourage and facilitate student learning independence by providing guided inquiry-based teaching materials. However, the discussion about this in Physics material is still lacking, so this literature review research aims to determine how guided inquiry teaching materials impact student learning independence, especially for Physics material.

RESEARCH METHOD

This research is a type of literature review. The instrument in this study was the researcher himself. The research procedure carried out by researchers in this study was to collect information from various sources and then examine this information. The data collected is secondary data. Research data were taken from books, journals, proceedings, and scientific articles relevant to this research. Information data taken is the result of research of the last 10 years. Data is collected by documenting relevant information obtained from journals, articles, proceedings and books. The data obtained will be reviewed until the researcher obtains the information needed to answer the purpose of this research.

RESULTS AND DISCUSSION

There are several articles that examine the impact of using guided inquiry teaching materials in learning Physics. This is shown in table 1.

Table 1. Guided Inquiry Teaching Materials in Physics Learning

Research Tittle	Results of Research
"The Effect of Using Guided Inquiry-Based Physics Teaching Materials on Critical Thinking Ability" (Nurbaiti, Ertikanto, & Wahyudi, 2016)	The use of guided inquiry teaching materials has an influence on students' critical thinking skills. It can be seen from the N-gain value of 0.51 in the experimental class, while the N-gain value in the control class is 0.36
"Development of Guided Inquiry-Based Science Teaching Materials to Increase Science Literacy" (Sari, Jupri, & Santoso, 2019)	There is an increase in scientific literacy skills in students who use guided inquiry teaching materials. The average pretest result was 43.38 to 83.82
"Development of Physics Science Teaching Materials Oriented to Generic Science Skills Using the Guided Inquiry Learning Model at SMP Negeri 13" (Amalia, Zainuddin, & Misbah, 2016)	The guided inquiry teaching materials developed are in a good category because they are able to improve students' generic science skills.
"Development of guided inquiry-based learning devices to improve student learning outcomes in science materials in middle school" (Rahayui, et al., 2018)	Development of learning tools in the form of syllabus, worksheets, lesson plans, teaching materials for improving student learning outcomes.

Table 1 is a number of previous research references regarding inquiry learning in general in learning Physics. Article 1, previous researchers reported that the use of guided inquiry teaching materials had an effect on students' ability to think critically. Students' ability to think critically is tested using the Independent Sample T Test. From the results of the discussion written in article 1, it is explained that the hold on the guided inquiry learning model found in teaching materials encourages students to solve and think about solving the problems they face. In article 2, previous researchers said that there was an increase in scientific literacy in students who used guided inquiry teaching materials. This can be seen from the results of the experimental class and control class tests. The N-gain value in the experimental class is included in the high criteria, namely 70.74, while in the control class, the N-gain value of 55.1 is included in the medium criteria. This study notes that the guided inquiry model provides space for students to carry out investigations, formulate hypotheses, collect data or information, and present them to their peers. Article 3, the previous researcher explained that the guided inquiry teaching materials developed were able to improve students' generic science skills. The increase in generic skills can be seen from the results of the students' pretest and posttest which have increased. However, the researcher writes in his article that it is quite difficult to practice generic science skills because students rarely do practical work and another reason is due to study habits. And finally in article 4, it is explained that the development of learning tools such as syllabus, worksheets, lesson plans and teaching materials can improve students' cognitive learning outcomes.

From the articles in table 1, there are different results from previous studies. It can be seen that each article shows that learning using guided inquiry teaching materials has an impact on learning outcomes, science skills, critical thinking skills and scientific literacy. Inquiry teaching materials can improve learning outcomes, science skills, critical thinking skills and scientific literacy because the steps in inquiry learning as outlined in teaching materials help students to discover concepts through their learning experiences. Meanwhile, the influence of inquiry teaching materials on student independence can be seen in table 2 below.

Table 2. Guided Inquiry Physics Teaching Materials Against Learning Independence

Judul Penelitian	Hasil Penelitian
Use of Guided Inquiry-Based Illustrative Modules on the Subject of Straight Motion Kinematics to Improve Learning Outcomes and Independence of Class VII Students of SMPN 14 Madiun" (Yusro & Sasono, 2016)	"The use of guided inquiry-based illustrative modules effectively improves student learning outcomes. It can be seen from the increase in learning outcomes in cycle 60%, cycle II 80% and cycle III 96%. The use of modules also increases student learning independence.
Effectiveness of Using Inquiry-Based Physics Modules on Learning Outcomes and Student Learning Independence" (Nurhayati, Saputri, & Sari, 2015)	There are differences in learning independence for students who are given inquiry learning modules and students who are not given learning modules. The test results for the effectiveness of using the module on learning independence are classified as moderate, namely 0.31

Based on Table 2 it can be seen that the use of guided inquiry teaching materials has a positive impact on student independence. Both of these articles were tested on straight-motion material. Article 1, explained that the use of guided inquiry teaching materials can provide increased learning outcomes and student learning independence, increased learning outcomes can be seen through pretest and posttest results while learning independence is seen from student enthusiasm and based on interview results, but in the article it does not explain interview results clearly. Research on this matter must continue to be developed by looking at other indicators of independent learning itself. In Article 1, previous researchers only looked at learning independence from student enthusiasm, while Fahrulliah's (2019) learning independence indicators stated that; "There are 6 indicators of student learning independence used for research, namely: (1) responsibility, (2) self-confidence, (3) initiative, and (4) discipline (5) being able to solve problems on their own (6) not relying on others".

In article 2, the previous researcher explained that the use of the guided inquiry learning module had a pretty good impact. This can be seen from the results of the independent learning questionnaire given to students, the gain test results obtained 0.31 in the experimental class. In this study, it was also explained that the increase in learning independence occurred because the inquiry-based module encouraged students to make hypotheses, solve problems, and prove the hypotheses they formulated. The guided inquiry model or approach encourages students to find concepts in a material and the learning that is carried out will be more meaningful because students play an active role in discovering these concepts (Chusni, 2016). From the two articles above, it can be concluded that guided inquiry teaching materials are able to encourage students' physics learning independence. Teaching materials for the guided inquiry model will return to learning Physics in essence, Physics as a process, as a product, and as an attitude (Syarifuddin, & Mujizatin, 2020). Teaching materials designed with an inquiry model will encourage students' independent learning attitudes. However, there is still little research on the effect of guided inquiry teaching materials on self-directed learning, so it needs to be further developed.

CONCLUSION

From the results of this literature review research, it was concluded that teaching materials designed based on guided inquiry can encourage student learning independence. This is because, guided inquiry-based teaching materials can foster students' curiosity to conduct investigations, make hypotheses, desire to find answers to existing problems and find the truth of the hypotheses that have been made. However, research on this matter in learning Physics is still very minimal, so it needs to be continuously developed.

ACKNOWLEDGMENTS

Thanks to all stakeholders who have been involved in the research so that researchers can complete this research to completion.

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