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DARI SINI PENCERAHAN BERSEMI

The Effect Of Guided Inquiry Learning Model On Students' Reasoning Ability In Elementary School

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Introduction

1. the low reasoning ability of students of SD Muhammadiyah 5 Porong

2. lack of application of learning models in the process of classroom learning activities for students

Problem Formulation

Is there an effect of guided inquiry learning model on students' reasoning ability?

Objective Study

The Effect of the Guided Inquiry model on the reasoning abilities of elementary school students

Researcher Previously

1. Ranti Nur Fa'idah, Supriyono Koes H, Susriyati Mahanal (2019), "The Effect of Guided Inquiry Learning Model on Science Literacy of Grade V Elementary Students".
2. Ni Ketut Erna Muliastrini, Ni Nyoman Lisna Handayani (2022), "The Effect of Inquiry Model on Science Literacy and Science Learning Outcomes of Grade V Students of SDN 4 Sangsit".
3. Ni Ketut Erna Muliastrini, Dantes Nyoman, Dantes Gede Rasben (2019), "The Effect of Inquiry Learning Model with Scaffolding Techniques on Science Literacy and Science Learning Achievement".

Indicator Literacy Science

As for indicator Literation science _according to TIMSSie

1. Knowledge *(knowing)* consists from the sub- indicators recognize, describe, provide examples.
2. Apply *(Applying)* consists from sub indicators compare, relate, interpret models, interpret information, explain.
3. reasoning *(Reasoning)* consists from sub indicators predict, design, evaluate, draw conclusions, analyze, synthesize, generalize, justify.

PBL models

1. The application of this Guided Inquiry learning model is to improve students' reasoning skills.
2. syntax in *Guided Inquiry* This there are 6 phases among them that is :
   1). orientation
   2). formulate the problem
   3).formulate a hypothesis
   4). collect data
   5). testing the hypothesis
   6). draw conclusions

Draft Study

Pretest	treatment	Posttest
O_1	X	O_2

The research method design using one group pretest- posttest design was chosen because it consists of one group so that there is no comparison with the control group. The independent variable is indicated by the treatment, namely the guided inquiry learning model, while the dependent variable is the students' reasoning ability which can show the difference between the pretest and posttest (O 1
-O 2)

Population And Sample

- Population in study This is fifth grade students SD Muhammadiyah 5 Porong .
- While the saturated sample used in this study was fifth grade students of SD Muhammadiyah 5 Porong with a total of 22 students.
- Researcher use saturated sampling technique Because all amount relatively small population , ie not enough of 30 students .

Technique Data

1. Data collection techniques using Reasoning tests

2. The test that will be given to 5th grade students consists of 2 parts, namely pretest before treatment and posttest after treatment

Instrument Study

learners are tested by giving a written test of reasoning ability with a total of 20 items in the form of multiple choice.

Technique Data

Based on the data that has been obtained, the results of student scores on the pretest and posttest using the paired t test analysis technique assisted by *SPSS*.

Results

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	pretest - postest	-35.45455	6.88495	1.46788	-38.50716	-32.40193	-24.154	21	.000

Table 3. Paired sample t test

Based on table 3 shows that the significance value is 0.00, meaning that the significance value <0.05. with the meaning that there is an influence on the reasoning ability of students after applying the guided inquiry learning model at SD Muhammadiyah 5 porong. it can be concluded that the application of the guided inquiry learning model has a significant effect on the reasoning ability of students.

Discussion

Based on the hypothesis test analysis with the paired t test above, it can be stated that there is a significant difference in reasoning ability in science subjects between students who take part in learning with conventional models. In the results of research conducted by (Fa'idah et al., 2019) also stated that the guided inquiry learning model can improve students' reasoning abilities skills. Judging from the results of the calculation of research data, the group of students who took part in learning with the guided inquiry learning model had higher reasoning skills compared to the conventional learning group. The difference in the science reasoning ability of students who are taught using the guided inquiry model and students who take lessons with conventional models is due to the syntax in the learning process. In contrast to conventional learning, teachers tend to deliver material to students. Therefore, in the implementation of conventional learning models, the role of the teacher as a simulus provider is a very important factor. In the results of research conducted by (Muliastrini, 2019) also stated that in the learning process if the teacher uses the guided incuri learning model students will experience an increase in their learning outcomes.

Benefit Study

This guided inquiry learning model has the advantage that it can help students understand concepts, actively involve students in solving a problem and require students to think highly, so that students are more likely to be independent in the learning process, because students can learn independently or in groups. There are several obstacles in applying the guided inquiry learning model, namely students are not accustomed to and do not understand learning through the application of the guided inquiry learning model. Therefore, a process that instills habits and understanding is needed. This is because it requires a longer implementation time compared to conventional learning.

Reference

[1] S. Safrizal, "An Overview of Science Literacy Skills of Elementary School Students in Padang City (Case Study of Students in an A Accredited School)," el-IbtidaiyJournal Prim. Educ., vol. 4, no. 1, p. 55, 2021, doi: 10.24014/ejpe.v4i1.12362.

[2] OECD, PISA 2018 Assessment and Analytical Framework. 2019. [Online]. Available: https://doi.org/10.1787/b25efab8-en

[3] I. Irsan, "Implementation of Science Literacy in Science Learning in Elementary Schools," J. Basicedu, vol. 5, no. 6, pp. 5631-5639, 2021, doi: 10.31004/basicedu.v5i6.1682.

[4] I. V. Mullis, M. O. Martin, and M. von Davier, TIMSS 2023 Assessment Framework. 2021.

[5] L. R. Jones, G. Wheeler, and V. A. S. Centurino, "TIMSS 2015 Science Framework," TIMSS 2015 Assess. Fram., pp. 29-59, 2015.

Reference

[[6] E. Nopiyanti, "Scientific learning of science literacy in elementary schools," Scientific learning of science literacy in schools. Elementary, pp. 43-55, 2017.

[7] Stavinibelia, "The Effect of Project-Based Learning Model on the Reasoning Ability of Learners in Science Learning in Elementary Schools," J. Educ. and Counseling, vol. 4, pp. 1349-1358, 2022.

[8] I. M. A. Dharma, L. Tu, S. Wahyuni, I. W. Suastra, and I. B. Putu, "Causal Factors and Alternative Solutions for Low Reasoning Ability of Elementary School Students," vol. 5, pp. 554-562, 2022.

[9] I. K. Suparya, I Wayan Suastra, and I. B. Putu Arnyana, "Low Science Literacy: Causal Factors and Alternative Solutions," J. Ilm. Educ. Citra Bakti, vol. 9, no. 1, pp. 153-166, 2022, doi: 10.38048/jipcb.v9i1.580.

[10] U. Aiman, N. Dantes, and K. Suma, "The Effect of Problem-Based Learning Model on Science Literacy and Critical Thinking of Elementary School Students," J. Ilm. Educ. Citra Bakti, vol. 6, no. 2, pp. 196-209, 2019, doi: 10.5281/zenodo.3551978.

Reference

[11] F. Hidayati and Julianto, "Application of Science Literacy in Science Learning at Elementary School to Improve Students' Critical Thinking Ability in Problem Solving," National Seminar on Education. pp. 180-184, 2018.

[12] N. P. L. K. Putri, N. Kusmariyatni, and I. N. Murda, "The Effect of Guided Inquiry Learning Model Assisted by Audio-Visual Media on Science Learning Outcomes," Mimb. PGSD Undiksa, vol. 6, no. 3, pp. 153-160, 2018.

[13] N. K. Erna Muliastrini, D. Nyoman, and D. Gede Rasben, "The Effect of Inquiry Learning Model with Scaffolding Techniques on Science Literacy Skills and Science Learning Achievement," J. Ilm. Schol. Basic, vol. 3, no. 3, p. 254, 2019, doi: 10.23887/jisd.v3i3.14116.

[14] F. Nida hidayati, "Increasing Science Learning Activity Through Inquiry Model," 2019.

[15] N. K. Dewi Muliani and I. M. Citra Wibawa, "The Effect of Video-Assisted Guided Inquiry Learning Model on Science Learning Outcomes," J. Ilm. Sekol. Dasar, vol. 3, no. 1, p. 107, 2019, doi: 10.23887/jisd.v3i1.17664.

[16] D. Aribawati, F. Kristin, and I. Anugraheni, "Application of Guided Inquiry Learning Model to Improve Creativity and Learning Outcomes of 3rd Grade Science Students," Justek J. Science and Technol., vol. 1, no. 1, p. 70, 2018, doi: 10.31764/justek.v1i1.407.

Reference

[17] N. L. O. Budiartini, I. N. Arcana, I. G. Margunayasa, and J. Pgsd, "THE EFFECT OF INQUIRI-BELLOWING LEARNING MODEL ON CRITICAL THINKING ABILITY OF SCIENCE STUDENTS CLASS V IN SD 7 DATAH, Ganesha University of Education," Mimb. Pgsd ..., 2013, [Online]. Available: https://ejournal.undiksha.ac.id/index.php/JJPGSD/article/view/891

[18] R. Jundu, P. H. Tuwa, and R. Seliman, "The Influence to Science Learning Results for Elementary School Students in Underdeveloped Regions with the Implementation of Guided Inquiry Model," Sch. J. Educ. and Kebud., vol. 10, no. 2, pp. 103-111, 2020.

[19] K. C. S. Anggraini, "Application of the Lamongan Guided Inquiry Learning Model," At-Thullab J. Educ. Madrasah Ibtidaiyah Teacher Vol., vol. 2, no. 1, pp. 36-47, 2022.

[20] A. Marisya and E. Sukma, "The Concept of the Discovery Learning Model in Integrated Thematic Learning in Elementary Schools According to the Views of Experts," J. Educ. Tambusa, vol. 4, no. 3, p. 2191, 2020.

[21] sastra wijaya, "APPLICATION OF INQUIRI LEARNING MODELS TO INCREASE STUDY RESULTS IN NATURAL SCIENCE LESSONS," Pendas Scientific Journal of Educ. basic, vol. V, pp. 1-23, 2016.

Reference

[22] R. N. Fa'idah, S. Koes H, and S. Mahanal, "The Effect of Guided Inquiry Learning Model on Science Literacy of Fifth Grade Students," J. Educator. Theor. Research, and Development, vol. 4, no. 12, p. 1704, 2019, doi: 10.17977/jptpp.v4i12.13096.

[23] N. K. E. . Ni Nyoman L.H, "The Effect of Inquiri Model on Students' Science Literacy and Science Learning Outcomes of Grade V Students of SDN 4 Sangsit," vol. 13, no. 2, pp. 125-143, 2022.

[24] N. K. E. Muliastrini, "The Effect of Environment-Based Guided Inquiry Learning Model on Science Literacy Ability and Science Learning Achievement of Grade V Elementary Students," Lampuhyang, vol. 10, no. 1, pp. 1-15, 2019, [Online]. Available: http://e-journal.stkip-amlapura.ac.id/index.php/jurnallampuhyang/article/view/173

[25] U. Aiman, D. Meilani, and Uslan, "The Effect of Guided Inquiry Learning Assisted with Student Worksheets on Mastery of Science Literacy in Elementary School Students," J. Ilm. Educ. Citra Bakti, vol. 8, no. 2, pp. 205-214, 2021, doi: 10.38048/jipcb.v8i2.327.

[26] Sugiyono, KUANTITATIVE, QUALITATIVE, AND R&D RESEARCH METHODS CV. ALFABETA. 2017.


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