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Submission date: 18-Jun-2023 01:56PM (UTC+0800)
Submission ID: 2118089353
File name: 3535-Article_Text-17752-1-10-20230427.pdf (573.19K)
Word count: 3368
Character count: 18549

JPPIPA 9(4) (2023)

Jurnal Penelitian Pendidikan IPA

Journal of Research in Science Education

http://jppipa.unram.ac.id/index.php/jppipa/index

Practicality of Guided Inquiry Learning Devices Using Google Sites Media on Static Fluid Materials

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Received: February 15, 2023
Revised: April 24, 2023
Accepted: April 27, 2023
Published: April 30, 2023

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DOI: 10.29303/jppipa.v9i4.3535

Abstract: This study aimed to describe the practicality of physics learning devices with guided inquiry learning models using google site media. This research was conducted at SMAN 1 Tilango, and the study sample was class XI IPA, using a simple random sampling technique. This development study uses research and development research (R&D) using the developed ADDIE development model. It will be implemented in class XI IPA of SMA Negeri 1 Tilango for odd quarters of the 2022/2023 Academic Year in determining research topics using simple sampling methods. The results showed that the guided inquiry learning model with google sites media on static fluid material was very well used in the learning process, with an average percentage of learning implementation of 91.2%, an average student response of 83.6%, and an average response of teachers by 92.03%. Results from the average percentage of teacher and student responses on learning tools are expanded into practical categories that can be applied to the learning process.

Keywords: Google sites; Guided inquiry; Learning device; Static fluid

Introduction

Education is an organized communication designed to develop learning activities for learners or students. In education, a trendy term is known, namely the teaching and learning or learning process. Learning is an attempt to guide the student through the learning process to obtain learning objectives following what is expected (Amali et al., 2023; Djou et al., 2022; Hermanto et al., 2023; Payu et al., 2023).

The education curriculum, especially in Indonesia, is multiplying. The curriculum in Indonesia constantly changes according to the times, science and technology, students' intelligence level, and society's needs. Based on the revised 2013 curriculum, education enables Indonesian people to be loyal, productive, innovative, creative, and effective. Contributing to society, nation, nation and national life. It is intended to prepare you for life as an individual and citizen. A country that contributes to world civilization. For this to be achieved, the 2013 Curriculum Education Program should be a reference for classroom learning implementation. Physics is one of the basic sciences dealing with nature, behavior, and the structure of things (Abdjul et al., 2022; Ntobuo et al., 2023). Physics is a branch of science that requires not only theories and formulas that need to be memorized but also understanding and comprehension of concepts that focus on knowledge formation through the discovery and presentation of data (Mahardika et al., 2012). Quality learning requires learning tools that can support students in understanding and mastering the material well (Bokingo et al., 2022; Gunada et al., 2017).

The teacher arranges learning tools so that the implementation of learning goes well according to what was previously planned. It motivates students to learn and makes understanding the material the teacher presents easier (Pakaya et al., 2022; Saputri et al., 2022). The learning tools usually developed are syllabi, teaching materials, worksheets, learning media, lesson plans, and assessment tests (Buhungo et al., 2023; Sahidu, 2019).

Based on activities about interviews and observations with teachers at SMAN 1 Tilango, especially physics teachers, they have used learning tools guided by the 2013 curriculum, which consists of a syllabus, student worksheets, lesson plans, teaching materials, learning media, and evaluation instruments.

How to Cite:
Supartin, S., Buhungo, T.J., Arbie, A., Sanjaya, F., & Demulawa, M. (2023). Practicality of Guided Inquiry Learning Devices Using Google Sites Media on Static Fluid Materials. *Jurnal Penelitian Pendidikan IPA*, *9*(4), 1835–1839. https://doi.org/10.29303/jppipa.v9i4.3535

Nevertheless, in its application, learning still runs in one direction or is only centered on the teacher's need for more innovative use of learning models. Teachers tend to use the lecture method to make students more likely to be passive. In addition, the need for further innovation in the use of learning media is suboptimal, especially the use of learning media that utilizes technology. This causes a lack of interest in students, and students need to understand the physics concepts being taught. This is evident when looking at the student population who get scores above the minimum completeness criteria of only 30%.

There needs to be innovation in learning physics to improve the learning process in Responding to these problems. One effort to overcome this is to develop learning tools. Learning devices are a collection of tools teachers and students use in the learning process so that the teaching and learning process can run smoothly, efficiently, and effectively (Linggile et al., 2022; Trianto, 2018). The learning process can run effectively and is heavily influenced by learning tools, so it is necessary to develop learning tools. An appropriate learning model is needed to encourage students to learn actively. To support this, one model that emphasizes student activity is the guided inquiry model (Alik et al., 2023; Suhartini et al., 2017).

The guided inquiry learning model is a learning model that shows students to find answers to problems posed by teachers (Annam, 2015). The advantage of the guided inquiry model, according to Sarwi et al. (2016) and Setiawan et al. (2023), namely the observation process can create exciting and fun learning conditions so that students are more motivated to learn. The selection of the guided inquiry learning model is supported by research results Hermansyah et al. (2017) and Supartin et al. (2022), which show that guided inquiry learning affects mastery of concepts. Along with the development of information technology, it is necessary to use technology as a medium that supports the learning process, one of which is the use of Google sites media. Google sites are products made by Google to create personal or group sites equipped with features that can support the learning process (Taufik et al., 2018). Based on the description above, the purpose of this study was to describe the practicality of the physics learning device with the guided inquiry model using Google's sites media. This research has the benefit of providing learning information quickly and can be accessed anywhere and anytime.

Method

This research is included in research and development type research and development (R&D) research, that is, development type research that focuses on describing the degree of practical application of physics learning devices using the guided inquiry model using Google sites media. This study uses the ADDIE model development, which consists of the analysis, design, development, implementation, and evaluation stages.

Conduct practicality tests of learning tools at the implementation stage to confirm the practicality of learning with the developed learning tools. It will be implemented in class XI IPA of SMA Negeri 1 Tilango for odd quarters of the 2022/2023 Academic Year in determining research topics using simple sampling methods. The usefulness of the learning device is reflected in the observation of learning performance and teacher and student reactions to the developed learning materials. The data collection tool is an observation sheet of the lesson plan-based learning implementation at each meeting. The assessment on the learning implementation sheet consists of two options: implemented and not implemented. Assessment of learning performance is done by testing the average total score results given in Table 1 (Purnomo, 2017).

Table 1. Learning Implementation Criteria

Value (%)	Criteria
81 - 100	Very good
61 - 80	Good
41 – 60	Enough
21 - 40	Not good

The practicality of learning is also seen by giving questionnaires to the responses of teachers and students to learn using the developed tools. In this study, the response questionnaire instrument used a Likert scale, and respondents gave a score of 1 (strongly disagree), 2 (disagree), 3 (doubtful), 4 (agree), and 5 (strongly agree).

Result and Discussion

The practicality of the developed learning tools can be seen from the learning activity guidelines and step-by-step implementation sheets included in the lesson plan and from the responses to questionnaires from teachers and students. The activity of learning model implementation can be seen in Figure 1.

Figure 1. The activity of learning model implementation

Results

The practicality of the developed learning tool can be confirmed from the implementation sheet that traces the steps of the learning activities included in the three lesson plans. The percentage of learning practice sheets shows in Table 2.

Table 2. Results of Implementation of Learning

Meeting	Percentage of Implementation (%)	Criteria
1.	91.6	Very good
2.	100	Very good
3.	100	Very good
Average	91.2	Very good

Table 2 shows the learning implementation percentage for the three meetings reached very good criteria. It can be seen that the learning implementation from the first to the third meeting has an overall average score of 91.2% and obtains very good criteria according to (Purnomo, 2017).

The practicality of the developed learning tools was also evident from questionnaires given by teachers and students. A teacher response questionnaire was issued after the three sessions of the learning process to check teachers' responses to the learning tools used. The teacher response questionnaire can be seen in Table 3.

Table 3. Results of the Teacher Response Questionnaire

Indicator	Strongly agree	Agree	Doubtful	Disagree	Strongly Disagree
Syllabus	50	50	0	0	0
Lesson plan	37.14	62.86	0	0	0
Student worksheets	71.42	28.57	0	0	0
Teaching materials	58.33	41.67	0	0	0
Media	63.64	36.36	0	0	0
Learning outcomes test	52.63	47.37	0	0	0
Average	55.52	44.48	0	0	0

Table 4. Student Response Questionnaire Results

Indicator	Strongly agree	Agree	Doubtful	Disagree	Strongly Disagree
Syllabus	20.8	68.8	10.4	0	0
Lesson plan	21.33	70.66	8	0	0
Student worksheets	26.66	64	9.33	0	0
Teaching materials	29.33	54.66	16	0	0
Media	22.66	57.33	20	0	0
Learning outcomes test	51.2	68.8	10.4	0	0
Average	25.04	64.04	12.35	0	0

Based on Table 3, the results of the teacher response questionnaire showed that the teachers' responses to the six learning device assessment indicators reached 55.52% strongly agree, and 44.48% agreed on all components of the learning device developed. This indicates that the physics teacher's response to the developed learning tool met the appropriate criteria for its use in learning.

After the learning process, student response questionnaire sheets were given for three meetings to see student responses to the learning tools developed. The results of student response data are presented in Table 4.

Table 4 shows that the developed learning tools meet the requirements for use in the learning process, with an average response of students reaching 25.04% strongly agree, 64.04%, and 12.35% respond hesitantly.

Discussion

The learning tool practicality can be seen in the learning implementation, teacher and student response questionnaires. Observers observed the implementation of learning in three sessions. Based on observer observations of teacher-implemented learning, the learning delivery follows the learning stages set out in the lesson plan of the first meeting, namely 91.6%, this was because the teacher did not carry out the two steps of the activities listed in the lesson plan. At the second meeting, it was 100% implemented, and in the third meeting was 100%, so the average percentage of learning implementation was 91.2%, thus obtaining a very good and practical title to be implemented in the learning process. This is consistent with research conducted by Benda et al. (2022), which states that the implementation of learning by conformity with the steps contained in lesson plans obtains an average percentage of learning implementation for three meetings of 98.33%. Get the title of very good and practical to be implemented in learning.

The learning devices practicality is also reviewed from the response of teachers and students. The teacher's response questionnaire consisting of 6 indicators consisting of 116 statements showed that, on average, teachers agreed to implement the guided inquiry learning model using Google sites media. At the same time, the student questionnaire showed that most students agreed to implement the guided inquiry learning model using Google sites media. Thus, results from the average percentage of teacher and student

responses on learning tools are expanded into practical categories that can be applied to the learning process. This aligns with research conducted (Chairunnisa et al., 2022) that practical learning tools can help teachers implement the learning process. This research is also supported by Shabrina et al. (2019), which shows that using google sites-based learning media is an innovative and interactive learning media creation in learning.

Conclusion

Based on the research and discussion results, the guided inquiry learning device using google sites media on static fluid material is practical to implement in physics learning. Results from the average percentage of teacher and student responses on learning tools are expanded into practical categories that can be applied to the learning process. Some things that can be used in suggestions for further improvement, namely for future researchers to develop learning tools in other physics materials.

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