Practicality of the OPthree Learning Model Assisted by Google Sites Based on Pancasila Student Profiles to Practice Students' Scientific Literacy Skills

Supartin[1*], Trisnawaty Junus Buhungo[1], Asri Arbie[1], Sukri Katili[2]

[1] Department of Physics, Universitas Negeri Gorontalo, Gorontalo, Indonesia.
[2] Department of Primary School Teacher Education, Universitas Negeri Gorontalo, Gorontalo, Indonesia.

Abstract: The aim of this research is to analyze the level of practicality of the OPthree model teaching module assisted by google site based on Pancasila student profiles to practice students' scientific literacy skills in physics subjects. This research was carried out at SMA Muhammadiyah Batudaa, using class XI-A research samples and simple random sampling. This type of research is included in the Research and Development (R&D) type of research by adopting the ADDIE development model. Test the level of practicality is carried out at the implementation stage. The results of the research show that the average percentage of implementation of learning carried out during three meetings using the OPthree model teaching module assisted by google site reached 100% with very good criteria. Then, (91%) students responded positively to learning that used the OPthree model teaching module with the assist of google site. So, it can be concluded that learning that uses the OPthree model teaching module assisted by google site is based on Pancasila student profiles to practice students' practical scientific literacy skills to be applied in the physics learning process.

Keywords: Google site; OPthree model; Scientific literacy

Introduction

Modern education must equip students with a comprehensive understanding of various scientific concepts, enabling them to effectively anticipate and address emerging issues. All elements that educators can utilize in learning activities to achieve set goals are considered educational resources, essential for the effective implementation of teaching and learning. Therefore, to cultivate an outstanding generation, it is essential to have a well-structured and systematic educational framework (Theelen & Breukelen, 2022; Velychko et al., 2021).

Education is an academic process that has the aim of improving moral, social, cultural and religious values. Education is a structured form of communication to foster learning activities for learners or students (Munir, 2012; Nisa & Hanifah, 2022). One of the subjects taught at high school level is physics.

Physics is a natural science discipline that goes beyond simply memorizing theories and formulas. It requires a deep understanding of concepts and emphasizes the process of generating knowledge through discovery and data analysis. Physics is a science that isn't just about memorizing speculation and equations. It necessitates a deep understanding of concepts, focusing on generating knowledge through the revelation and introduction of information (Banimustafa & Hardy, 2020; Mahardika et al., 2021; Sneed, 2012).

Essentially, physics education should be tailored to the methods used by past physicists to gain their

knowledge. Therefore, physics learning must be directed towards finding out and doing so that it can help students to gain deeper mastery of concepts (Kurniawati, 2018). The goal of physics education aligns with 21st-century standards, which require students to develop creativity, collaboration, communication, critical thinking, and problem-solving skills (Ibrahim et al., 2020).

Generally, physics education in schools employs tools to facilitate the delivery of materials to achieve specific goals (Wahyuni, 2014). Therefore, a learning model is necessary to facilitate materials delivery and achieve the established goals.

To achieve analytical and problem-solving skills in physics learning, it is important to have scientific literacy skills. According to Narut et al. (2019) scientific literacy, as defined by the AAAS (American Association for the Advancement of Science) "Project 2061," refers to the capability to utilize scientific knowledge, ask questions, and derive conclusions from evidence to comprehend and contribute to decisions regarding the natural world and human interactions with it.

Scientific literacy comprises three main components: the ability to think critically and creatively, solve problems, and act and live in the world. The action components of scientific literacy encompass communication, data, technology, collaboration, and human literacy. Meanwhile, the elements related to living in society include initiative, self-direction, global understanding, and social responsibility. Meanwhile, in assessing scientific literacy, three aspects of the scientific process are determined based on PISA, specifically formulating scientific questions, providing scientific explanations for phenomena, and using scientific evidence (Ismail, 2016; Sakti & Swistoro, 2021).

Scientific literacy can be measured using one of the international programs, namely PISA. The Program for International Student Assessment (PISA) is a global evaluation program that measures how well students have gained the crucial knowledge and skills needed for active participation in society. It assesses students' abilities in reading, mathematics, science, innovative domains, and well-being (OECD, 2019).

Based on the national assessment released by the Ministry of Education, Culture, Research and Technology (Kemendikbudristek) in November 2021 via the official website raporpendidikan.kemdikbud.go.id, especially at the high school level with scores ranging from 1 to 3, it seems that literacy skills students achieved a score of 1.72. This score is below the national average of 1.82, indicating that less than half of students achieve the minimum level of competency in literacy. Likewise, numeracy ability only achieved a score of 1.59, which is also below the national average of 1.65, indicating that less than half of students achieved the minimum competency in numeracy.

However, in terms of the character survey, which is one of the evaluation tools in the National Assessment (AN) with the aim of overcoming moral decline and cultivating the spirit of the Pancasila Student Profile, it was found that students achieved a score of 2. This score is below the national average of 2.08, shows that achievements in this regard still require improvement. The Pancasila Student Profile itself reflects the ideal character of students in Indonesia which is expected to be realized through six main elements, including critical thinking, creativity, independence, faith, obedience to God Almighty, noble character, participation in mutual cooperation, and respect for global diversity (Afian, 2023; Wumu et al., 2023; Zuchron, 2021). In the current era of globalization and technological development, the role of values and character in education is becoming increasingly important to achieve a balance between technological progress and human development (Faiz et al., 2022).

One learning approach that has the potential to support the development of students' scientific literacy is the OPthree learning model. This learning model is the result of a combination of the POE (Predict-Observe-Explain) and TTW (Think-Talk-Write) learning models. With a constructivist approach, the OPthree learning model allows students to start the learning process by understanding existing phenomena. Next, students are actively involved in group discussions and finally express their understanding using their own language regarding the learning outcomes (Cantamessa et al., 2020; Kolikant & Ben-Ari, 2008).

In using the OPthree model, the teacher's role is to guide students to search or investigate and test the validity of the concepts needed to solve problems. During this process, students are trained to think critically, work together, communicate, and formulate conclusions based on the discussions or investigations they carry out (Mursalin et al., 2022). The syntax of the OPthree learning model includes orientation, observation, exposure, and reporting.

The advantages of using the OPthree model Mursalin et al. (2022) include: can be implemented both online and offline, encourage students to increase creativity, especially in the aspect of predicting, the learning process becomes more interesting because students not only listen, but also observe events through experiments, through observing phenomena via platforms such as YouTube, students can respond to the stimuli provided, and after carrying out experiments, students have the opportunity to produce scientific work based on the experiments they conducted.

Apart from its advantages, the OPthree learning model has several weaknesses (Mursalin et al., 2022) as

follows: problems with the tools when conducting experiments can hinder the learning process, requires more time for planning and implementing the OPthree learning model because students are not yet familiar with the steps and also because of limitations in the online learning mode, and requires more thorough preparation, especially in presenting physics learning problems. In carrying out experiments, teachers need to have special abilities and skills, which results in higher professionalism demands for teachers.

According to the results of research conducted by Mursalin et al. (2022), it was revealed that the implementing the OPthree learning model can enhance student achievement across multiple dimensions, including cognitive, affective and psychomotor aspects, as well as students' science process skills. This increase can be explained by the fact that the steps contained in the OPthree learning model include elements related to the development of science process skills.

To overcome the challenges described previously, especially in the context of physics learning, innovative efforts are needed to improve the quality of the learning process. One strategy that can be adopted is the development of learning modules based on the OPthree model. Therefore, to resolve the issues described previously, it is important to introduce innovation in physics learning. One concrete step to overcome this problem is through the development of learning modules that adopt the OPthree model. The effectiveness of the learning process really depends on the quality of the learning modules, so it is important to continue to develop appropriate modules. A learning module is a learning device or plan that is prepared based on the curriculum, aimed at achieving predetermined competency standards (Nesri & Kristanto, 2020). The central role of learning modules is very significant in helping teachers design the learning process (Nurdyansyah, 2018).

In an effort to support this, appropriate learning media is needed to support learning activities. As information technology advances, technology can be increasingly utilized to support learning. One of the technologies used is google sites. Google sites are one of

various types of webs that can be used in learning. This application is modified to help the learning process. Google Sites is an online application developed by Google to create websites for classrooms, schools, or other purposes. With Google Sites, users can consolidate various information in one location, including videos, presentations, attachments, and text, which can be shared as needed. Google Sites is free and available to all users with a Google account. The use of smartphones by students is another factor that supports google sites media in the learning process (Taufik & Doyan, 2022).

With google sites, we can create a website that we can use for various internet purposes. Google sites have template and design features that are very attractive to use. Of course, google sites provides convenience for its users. Apart from that, we can also store documents and important files on google sites for free and we can share them online. Google Sites can help students access and study the provided teaching materials more conveniently (Hironymus & Hantono, 2020).

Based on the description outlined above, the aim of this research is to see the level of practicality of the OPthree model teaching module assisted by google site based on Pancasila student profiles to practice students' scientific literacy skills in physics subjects.

Method

This research falls under Research and Development (R&D) and utilizes the ADDIE model developed by Reiser and Mollenda (Rayanto & Rusmawan, 2020; Untoroseto & Triayudi, 2023). The quality of the developed products is evaluated based on criteria of validity, practicality, and effectiveness. However, the primary objective of this research is to describe the practicality level of teaching modules that employ the OPthree learning model. This research uses the development of the ADDIE model developed like flow chart of research in Figure 1 by Reiser and Mollenda which consists of analysis, design, development, implementation and evaluation stages.

Figure 1. Flow chart of research

Practicality testing of a teaching module product is conducted during the implementation phase assesses the practical effectiveness of learning achieved with the developed module. This involves evaluating the teaching module's practicality through an assessment sheet on learning implementation and a student response questionnaire. The implementation will take

place in class XI-A at SMA Muhammadiyah Batudaa during the first semester of the 2023/2024 academic year. Research subjects will be selected using simple random sampling techniques.

The practicality of the teaching module is evaluated using an observation sheet that tracks the implementation of learning based on the steps outlined

in the module for each meeting (Kandlhofer et al., 2016). The assessment includes two options: implemented and not implemented. The percentage of activity implementation for all learning aspects is determined using Formula 1.

$$\% \ Implementation = \frac{many \ steps \ have \ been \ taken}{planned \ number \ of \ steps} \ x \ 100\% \qquad (1)$$

Learning implementation is assessed by comparing the overall average score results with the established criteria for learning implementation (Purnomo, 2014), as shown in Table 1.

Table 1. Learning Implementation Criteria

Percentage (%)	Criteria
81 – 100	Very good
61 – 80	Good
41 – 60	Moderate
21 – 40	Less good

A response questionnaire was administered to students to gauge their reactions to the learning experience using the developed teaching modules. In this study, the response questionnaire utilized a Likert scale, where respondents were assigned scores of 1 (strongly disagree), 2 (disagree), 3 (agree), and 4 (strongly agree).

Result and Discussion

The effectiveness of the learning process can be evaluated through the implementation sheet, which follows the steps detailed in the teaching module, or by examining the student response questionnaire sheet.

Implementation of Learning

The application of learning across three sessions, observed by evaluators during the study, can be observed through the sequence of activities detailed in the teaching module, which emphasized rectilinear motion dynamics. The percentage data from the learning implementation assessment sheet is depicted in Figure 2. Figure 2 indicates that the learning implementation achieved the criteria of "very good" over the course of 3 meetings. Figure 2 shows that the learning implementation was exemplary across the first to third meetings, with learning activities being entirely conducted 100%, achieving "very good" criteria based on the established standards (Astiti et al., 2021; Fauzan et al., 2014; Fauziah, 2015; Harimanto et al., 2015; Purnomo, 2014; Usmeldi et al., 2021).

The observed learning implementation includes all the steps of learning activities outlined in the teaching module. The learning activities in this research consisted of three meetings. At the first meeting there were 11

steps of learning activities observed and for the second meeting there were also 11 steps of learning activities observed. Meanwhile, at the third meeting, 11 steps of learning activities were observed. This aligns with the findings of the research by Alik et al. (2023), Buhungo et al. (2021), Supartin et al. (2023), and Wumu et al. (2023).
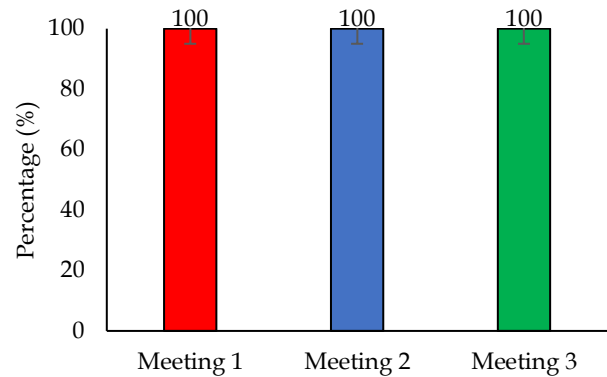

Figure 2. Learning implementation percentage diagram

Student Response Questionnaire

Administering student response questionnaires after three learning sessions aimed to assess student feedback on the teaching modules used in the study. The student response questionnaire sheet contains five indicators, including: student responses regarding OPthree learning model learning assisted by google site; the impression that students get while taking part in the lesson; students' feelings following the OPthree learning model assisted by google site; students' responses to learning outcomes in the form of scientific literacy after following the OPthree learning model assisted by google site, and; effectiveness of using Student Worksheets. The five indicators are presented as 25 statements, both positive and negative, each scored using a letter scale. The student response data is illustrated in Figure 3.

In Figure 3, the student response questionnaire results indicate that most students (91%) provided positive feedback regarding learning with the developed teaching modules. 61% of students' responses indicated agreement, while 30% of reactions strongly agreed. Therefore, 91% of most students indicated that using teaching modules like the OPthree model assisted by Google Sites could enhance student enthusiasm for teaching and learning activities.

Based on positive student responses, the use of teaching modules meets practical criteria for implementation in classroom learning, consistent with research findings by Buhungo et al. (2023), Djou et al. (2022), and Revita (2019) obtained a positive student responses to the developed learning tool indicate that it meets practical criteria for implementation in teaching and learning activities. Therefore, based on student feedback on the learning process, it fulfills practical

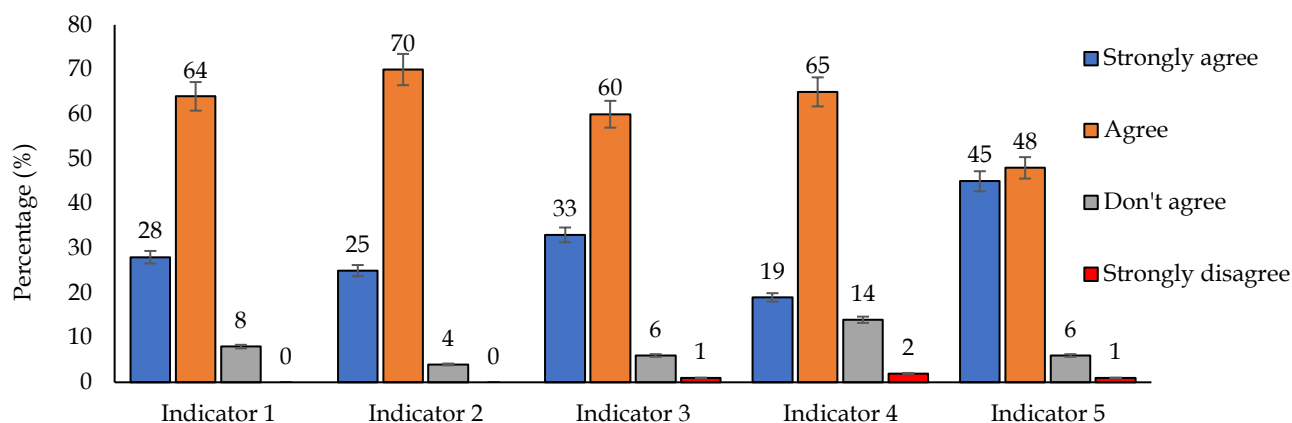requirements for integration into teaching and learning activities.

Figure 3. Percentage diagram of student responses to learning using the opthree model

Conclusion

Based on the results of the analysis and description of data on the practicality of teaching modules using the OPthree learning model assisted by google site based on Pancasila student profiles which refer to research problems and objectives, it can be concluded that the teaching module developed is categorized as practical because seen from the implementation of learning it has very good criteria because students really enjoy doing it. observations, collecting data, and group discussions. Then for student responses in the good category, especially on indicators of students' impressions of the learning carried out, they gave very good responses.

Author Contributions
Supartin: Conceptualization, methodology, writing−original draft preparation; Trisnawaty Junus Buhungo: Methodology, formal analysis, validation; Asri Arbie: Validation, methodology; Sukri Katili: Curation, writing−review and editing.

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