Scientific Approach Learning Tools Science Content Theme 9 Subtheme 1

I Kadek Ira Widiana[1*], Ni Ketut Suarni[2], I Made Citra Wibawa[3] (iD)

[1,2,3] Pendidikan Guru Sekolah Dasar, Universitas Pendidikan Ganesha, Singaraja, Indonesia

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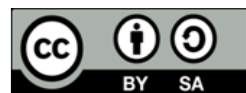
ABSTRAK

Banyak guru tidak membuat persiapan ketika akan melakukan pembelajaran, sehingga guru mengajar tanpa persiapan. Selain itu, terkait dengan penyusunan perangkat pembelajaran khususnya RPP guru kesulitan menentukan alokasi waktu pembelajaran. Tujuan penelitian ini yaitu mengembangkan perangkat pembelajaran pendekatan saintifik muatan IPA Tema 9 Subtema 1. Jenis penelitian ini yaitu penelitian pengembangan. Model yang digunakan dalam mengembangkan perangkat pembelajaran yaitu 4-D yang meliputi Define, Design, Develop, dan Disseminate. Subjek penelitian yaitu 1 ahli materi pembelajaran. Subjek uji coba prorangan melibatkan 2 guru. Metode yang digunakan untuk mengumpulkan data yaitu kuesioner. Instrument yang digunakan dalam pengumpulan data yaitu lembar kuesioner. Teknik yang digunakan untuk menganalisis data yaitu yaitu analisis deskriptif kualitatif dan analisis deskriptif kuantitatif. Hasil penelitian yaitu hasil penilaian yang diberikan oleh ahli materi pembelajaran mendapatkan nilai 88%, sehingga mendapatkan kualifikasi baik. Hasil uji coba perorangan media untuk guru mendapatkan nilai 97% sehingga mendapatkan kualifikasi sangat baik dan tidak perlu direvisi. Disimpulkan maka rencana pelaksanaan pembelajaran (RPP) muatan IPA pada Tema 9 Subtema 1 layak digunakan dalam pembelajaran.

ABSTRACT

Many teachers need to make preparations when teaching, so teachers teach without preparation. Apart from that, related to the preparation of learning tools, especially RPPs, teachers need help determining the allocation of learning time. This research aims to develop scientific approach learning tools for science content Theme 9 Subtheme 1. This type of research is development research. The model used in developing learning tools is 4-D, which includes Defining, Design, Developing, and Disseminate. The research subject is 1 learning material expert. The individual trial subjects involved 2 teachers. The method used to collect data is a questionnaire. The instrument used in data collection was a questionnaire sheet. The techniques used to analyze the data are qualitative descriptive analysis and quantitative descriptive analysis. The results of the research, namely the results of the assessment given by learning material experts, received a score of 88%, resulting in good qualifications. The results of the individual media trials for teachers received a score of 97%, so they received excellent qualifications and did not need to be revised. The learning implementation plan (RPP) with science content in Theme 9 Subtheme 1 is suitable for learning.

1. INTRODUCTION

Education is an important way to learn that helps a person adapt to the conditions of society and the environment. The learning process is driven by interactions between teachers and students (Puspitarini & Hanif, 2019; Sari et al., 2023). The aim of education is for students to acquire the knowledge and skills necessary in real life. Education in general is a human effort to build and develop their personality so that they can adapt to the principles of society and culture around them. (Lewis & Ponzio, 2016; Xiong et al., 2020). Education can be concluded as one of humans' efforts to develop their best potential for society and adapt to their environment. School education plays an important role in helping children develop their best potential (Ingkavara et al., 2022; Padmadewi et al., 2018). School education is closely related to the interaction between teachers and students. Teaching is carried out by teachers as educators, while learning is carried out by students. As educators, teachers have a responsibility to make human resources reliable

Corresponding author
*E-mail addresses: irawidiana891@gmail.com (I Kadek Ira Widiana)

and high quality (Nugraheni et al., 2021; Steinberg & Kraft, 2017). By creating effective learning, teachers can achieve learning goals.

At school, teachers must teach a number of learning content to their students. The 2013 curriculum combines several learning contents into integrated learning, which focuses on integrated thematic learning (H. Firdaus et al., 2022; Siregar et al., 2022). Integrated thematic learning is a learning method that allows students to explore and discover academic ideas and principles in a comprehensive, meaningful and authentic manner individually and in groups (Ernawati, 2018; Safitri & Harjono, 2021). Therefore, thematic learning can be implemented in the elementary school curriculum because the curriculum includes several learning contents and focuses on integrated learning, which frees students to learn. One of the advantages of thematic-integrative learning compared to other learning is that it combines multiple intelligences (multiple thinking skills) to improve higher levels of thinking skills. (Amris & Desyandri, 2021; Donas Ahmad Najib & Elhefni, 2016). It is an innovative method to improve the attitudes, skills and knowledge dimensions of learners. Integrated thematic learning must be able to help students become more independent and gain the knowledge needed to improve their competencies (Fauzi et al., 2021; Mawardi et al., 2019). The scientific approach is a learning approach that can help students become more independent.

One of the problems often faced in the field is the difficulty teachers face when compiling learning tools. This includes the problems faced by teachers who do not prepare lesson plans independently. Previous research findings also revealed that some teachers experienced obstacles in developing appropriate learning plans for students (Bertus, 2019; Hernawati, 2016; Wikanengsih et al., 2015). Many teachers do not make preparations when they want to carry out learning, so teachers teach without preparation. Apart from that, related to the preparation of learning tools, especially RPPs, teachers have difficulty determining the allocation of learning time, formulating 6 indicators of competency achievement and determining learning methods in RPPs. The components contained in the RPP are one unit so that they reflect the learning activities that will be carried out by the teacher. This means that teachers do not independently prepare lesson plans.

Based on these problems, to improve the quality of the learning process, appropriate learning tools are needed to improve student learning activities. Learning devices have the advantage of being a means or media used by teachers and students both inside and outside the classroom (Manalu et al., 2022; Padmadewi, 2015). Teachers must also prepare learning devices to be used in classroom learning. Devices used in the learning process include student books, syllabus, lesson plans, THB, and student media (Fathina et al., 2016; Mangelep, 2017). Learning tools are a collection of materials, media, tools and instructions that will be used during learning activities (Dwitantra, 2015; Fahrurrozi et al., 2021). During the process of creating learning tools, teachers must follow the Minister of National Education Regulation Number 22 of 2006 concerning Content Standards. SK-KD mapping, annual program, semester program, syllabus, learning implementation plan (RPP), weekly agenda, remedial program, enrichment, and assessment instruments are all learning tools that must be created by teachers (Anwar et al., 2016; Juliati et al., 2022). It is hoped that optimal learning achievement can be achieved through learning activities if the teacher has the ability to design learning and put it into learning tools.

The 2013 curriculum, especially integrated learning, places greater emphasis on modern pedagogical elements in the learning process. A scientific or scientific approach can be used to improve contemporary education. In a scientific approach, students are asked to observe, ask questions, reason, associate, and communicate about subject matter (Istiqomah & Prastowo, 2022; Miraza et al., 2018). The scientific approach gives students the opportunity to study and understand the subject matter freely. This approach also gives students the opportunity to demonstrate their abilities through learning activities designed by the teacher (Arum & Wahyudi, 2016; Lestari et al., 2018).The presentation emphasized that although teachers face significant challenges in teaching integrated thematic learning in elementary schools. In thematic teaching, teachers must create scientific learning strategies.

This scientific approach must be described as a more specific activity that is included in the learning tool (Puspita et al., 2016; Qondias et al., 2019). Learning tools with a scientific approach are one solution that can be applied in learning. Previous research findings also reveal that lesson plans in the 2013 curriculum must be prepared based on thematic learning concepts (Djaelani, 2019; Suryani et al., 2019). Other findings also emphasize that learning tools must be well developed so that they can support learning activities (Nisaa & Heynoek, 2021; Wani, 2020). There has been no study regarding scientific approach learning tools for science content Theme 9 Sub-theme 1. Based on this, the aim of this research is to develop scientific approach learning tools for science content Theme 9 Sub-theme 1.

2. METHOD

This type of research is development research. The model used in developing learning tools is 4-D which includes Define, Design, Develop, and Disseminate (Arywiantari et al., 2015). At stageThe dissemination stage could not be carried out due to several obstacles, namely the Covid-19 situation and limited costs for producing (RPP) in large quantities. At the definition stage, the activities carried out are initial analysis which includes analysis of students, assignment material and learning objectives. At the design stage, learning design planning, format selection and preparation of lesson plans are carried out. At the development stage, science content learning tools and expert tests were developed. The research subject is 1 learning material expert. The individual trial subjects involved 2 teachers. The method used to collect data is a questionnaire. The instrument used in data collection was a questionnaire sheet. The instrument grid is presented in Table 1, and Table 2.

Table 1. RPP Validation Sheet Grid

No.	Rated Aspect
I	**Formulation of Learning Objectives**
	1. Clarity of Core Competencies and Basic Competencies
	2. Correspondence of Core Competencies and Basic Competencies with learning objectives
	3. Accuracy of translating Basic Competencies into indicators
	4. Suitability of indicators to learning objectives
	5. Suitability of indicators to the student's level of development
II	**Contents of the RPP Presented**
	1. Systematics of Preparing RPP
	2. Appropriateness of the sequence of thematic learning activities Theme 9 Subtheme 1
	3. Conformity of descriptions of student and teacher activities for each learning stage
III	**Language**
	1. Use of language in accordance with EYD
	2. The language used is communicative
	3. Simplicity of sentence structure
IV	**Time**
	1. Suitability of the allocation used
	2. Time details for each learning stage

Table2. Practicality Questionnaire Grid

No.	Statement
I	**Lesson Plan**
1	I enjoy carrying out learning activities using this lesson plan
2	This lesson plan makes it easier for me to carry out learning activities
3	The steps for learning activities in this RPP are clear and easy to implement
4	Learning activity steps can support the achievement of learning objectives
5	The steps for learning activities are in accordance with the thematic stages
6	Through this lesson plan, I have an understanding of the steps for innovative learning activities in teaching students
7	RPPs that are created to support the implementation of learning should be made like this RPP.

Instrument validity analysis uses the Gregory formula. The techniques used to analyze the data are qualitative descriptive analysis and quantitative descriptive analysis. Qualitative descriptive analysis is used to collect data in the form of input provided by experts. Quantitative descriptive analysis is used to collect data in the form of scores given by experts.

3. RESULT AND DISCUSSION

Result

This research develops a learning implementation plan (RPP) for science content in Theme 9 Sub-theme 1, using the 4D model. First, definition. The results obtained are that many teachers do not make preparations when they want to carry out learning, so teachers teach without preparation. Apart from that, related to the preparation of learning tools, especially RPPs, teachers have difficulty determining the allocation of learning time, formulating 6 indicators of competency achievement and determining learning

methods in RPPs. The components contained in the RPP are one unit so that they reflect the learning activities that will be carried out by the teacher. This means that teachers do not independently prepare lesson plans.

Second, planning. The activity carried out is developing a design for learning tools in the form of a format that is more efficiently developed as a whole. The first step taken is determining the learning design. This learning design is adapted to science content learning tools which will consistently be integrated into the thematic learning system. Next, the format is selected. The choice of format in developing learning tools in the form of a learning implementation plan (RPP) is intended to be a design or drafting of a thematic learning implementation plan (RPP) format and adapted to the components. Next, the RPP is prepared. Before preparing the actual learning implementation plan (RPP), it is necessary to ensure the feasibility of the initial design that has been carried out at the design stage. The components contained in the learning implementation plan (RPP) consist of the name of the educational unit/school identity, subject identity/theme and sub-theme, class/semester, main material, time allocation, learning objectives, basic competencies and indicators of competency achievement, learning materials. , learning methods, learning media, learning resources, learning steps, assessment of learning outcomes, and legalization.

Third, development. At this stage, a learning implementation plan (RPP) for science content is developed in Theme 9, Subtheme 1. After the RPP is developed, it is then consulted with the supervisor. Next, product improvements are carried out in accordance with input from the supervisor. After completing the product improvements, an expert test is carried out to determine the suitability of the learning media being developed. This expert test is carried out by providing an assessment sheet for science content learning media tools which contains the suitability of the topics and learning media developed to science content material experts and individual trials consisting of two teachers as users who will provide suggestions and comments. The results of the assessment given by learning material experts received a score of 88%, resulting in good qualifications. The results of the individual media trials for teachers received a score of 97% so they received very good qualifications and did not need to be revised. Based on this, the learning implementation plan (RPP) for science content in Theme 9 Sub-theme 1 is suitable for use in learning.

Discussion

The learning implementation plan (RPP) for science content in Theme 9 Subtheme 1 is suitable for use in learning, due to several factors. First, the learning implementation plan (RPP) for science content in Theme 9 Subtheme 1 is suitable for use because it uses a scientific approach. The current design of learning steps requires teachers to use a scientific approach in implementing thematic learning. Thematic learning is learning that integrates ideas from various subjects into one particular theme or topic of discussion with the aim of increasing students' understanding and improving their learning outcomes. (Agustin et al., 2020; Syudirman & Saputra, 2020; Weriyanti et al., 2020). By using a scientific approach, a scientific approach is used to help students understand and understand various topics (FM Firdaus & Badriyah, 2018; Lestariningsih & Suardiman, 2017). Observing, classifying, measuring, predicting, explaining, and concluding are the process skills involved in applying a scientific approach to learning. The scientific approach focuses on students and involves the scientific process of creating concepts, laws or principles (Istiqomah & Prastowo, 2022; Rohmanurmeta & Dewi, 2019). This approach also involves cognitive processes that can increase intellectual development (thinking skills), and can shape the character of students. A learning implementation plan is a face-to-face learning plan for one or more meetings (Mastra, 2019; Wibawa, 2019). Learning devices are tools that enable educators and students to carry out learning activities (Ni Nyoman Padmadewi, 2015; Prayito, 2011). Therefore, learning tools function as a guide for teachers in conducting learning, whether in the classroom, laboratory or outside the classroom. Learning tools are a form of teacher preparation before starting learning.

Second, the learning implementation plan (RPP) for science content in Theme 9 Subtheme 1 is suitable for use because it is very clear so it is easy for teachers to apply it in class. The characteristics of the implementation plan are outlined in the syllabus to direct student learning activities in an effort to achieve KD (Hernawati, 2016; Mursali, 2015). To ensure that learning takes place in an interactive, interesting, challenging and motivating way for students to participate actively, teachers must prepare lesson plans thoroughly and systematically. (Hernawati, 2016; Salim & Cahyaningsih, 2018). RPPs must also provide sufficient space for creativity, initiative and independence in accordance with students' talents, interests and physical and psychological development. In addition, the RPP must require the use of learning media. Learning media is very important for the learning process because it can help teachers explain learning material that is difficult to explain verbally (Munawar & Suryadi, 2019; Prisila et al., 2021). Learning media can make learning easier and provide real and direct experiences to students (Hanafi et al., 2021; Wahid et al., 2020). In addition, the use of media can be interesting and help students improve their understanding

of the material. Student-centered lesson plans, student-centered learning implementation plans, will help students become more creative, independent, and motivated to learn. In this situation, the teacher has the responsibility to monitor the learning process. The emphasis on all components of the learning implementation plan must be connected and integrated so that the students' learning experience is the best and most meaningful (Fahrurrozi et al., 2021; Prayito, 2011).

Previous research findings also reveal that the use of lesson plans is very important in learning because it can make learning activities run well (Anwar et al., 2016; Hidayatulloh et al., 2015; Wani, 2020). Other findings also state that lesson plans are important because they help teachers as a guide to carrying out conducive learning activities (Hernawati, 2016; Nisaa & Heynoek, 2021). It was concluded that utilizing the design of the Science Content Learning Implementation Plan (RPP) in Theme 9 Subtheme 1 can help in delivering teaching materials to students to improve the quality of active and interactive students so that they can support the smooth running of learning activities at school. Thus, students are taught using the Learning Implementation Plan (RPP) with higher science content in Theme 9 Subtheme 1, and are able to create an effective learning process, so that students do not feel bored during the learning process. The implication of this research is that the scientific lesson plans developed in this research can be used by teachers in their learning process. They can also create lesson plans for various subjects. Students can use this learning tool to gain new experiences in learning science content and can help students learn independently by students or without guidance from teachers.

4. CONCLUSION

The results of the assessment provided by learning material experts obtained good qualifications. The results of individual media trials for teachers obtained very good qualifications and did not need to be revised. Based on this, the learning implementation plan (RPP) for science content in Theme 9 Sub-theme 1 is suitable for use in learning. The learning implementation plan (RPP) with science content makes it easier for teachers to carry out learning activities in the classroom.

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