Elementary Education Journal, 4(1), 2024, 31-38
Available at: https://journal.nurscienceinstitute.id/index.php/eej
EISSN: 2809-4689

The Implementation of Indonesia's 2013 Curriculum Using a Scientific Approach at State Elementary School

Gita Fertikasari
Selokarto 03 Public Primary School, Batang, Indonesia
*Email: sdn.selokarto03@yahoo.co.id

Submitted: 2024-08-04
Accepted: 2024-11-22
Published: 2024-12-29
DOI: 10.53088/eej.v4i1.1756

Keywords:

Scientific method
Curriculum
Thematic
Inquiry

Abstract

Background: *The aims of this study is 1) to know the implementation of 2013 Curriculum by using scientific method in SD Negeri 01 Pretek Batang, 2) to know the difficulties faced by the teacher in arranging teaching learning material curriculum 2013 in SD Negeri 01 Pretek Batang, 3) to know the teacher's solution to face the difficulties in arranging teaching learning material curriculum 2013 in SD Negeri 01 Pretek Batang.*

Method: *The kind of this research was qualitatif research. Collecting data technique was interview, documentation, and observation. The data analysis was interactive, the validity data was used triangulation which consists of source triangulation and technique triangulation.*

Result: *The result of this study shows that 1) the the implementation of 2013 Curriculum by using scientific method in SD Negeri 01 Pretek Batang related to the observing, questioning, consuming, brainstorming and communicating concept. In the concept there are PAIKEM and discussion. 2) the difficulties faced by the teacher in arranging teaching learning material curriculum 2013 in SD Negeri 01 Pretek Batang was not existed, because the teacher get used to with it and they have experience by the method that was used*

Implication: *The implications of this study show that teachers have strong competencies in implementing the 2013 Curriculum, with minimal obstacles encountered during the learning process. Furthermore, the use of a humanistic and contextual approach enhanced emotional connection with students and increased the relevance of the learning material.*

Novelty: *This study highlights the implementation of the scientific approach across multiple grade levels in a single primary school and demonstrates teachers' ability to independently adapt nationally standardized materials to local contexts.*

INTRODUCTION

Education has undergone many changes along with various curriculum reforms and the systems used to implement them. Regardless of the nature of the curriculum change, the ultimate goal remains the same: to develop students' competencies. The issue lies not only in the curriculum itself but also in how teachers, as educators, must realize the curriculum into more operational activities—namely, in the learning process. Teachers must understand curriculum demands and translate them into lesson plans that serve as practical instructional guidelines.

It is essential that teachers possess the ability to implement the curriculum correctly through well-structured lesson planning. Since the learning process requires a synergy between the curriculum and the teacher, there is a need to elaborate, enrich, and develop the curriculum. When designing lesson plans, teachers must not only follow the curriculum mandates but also consider the specific conditions, situations, and potentials of their respective schools. Naturally, this affects the learning models developed by each teacher, which are adapted to the real conditions of each school (Nana & Sukirman, 2008: 78).

The learning model within the 2013 Curriculum emerged as a response to future educational demands. It emphasizes competencies such as communication skills, critical and clear thinking, moral reasoning, responsible citizenship, the ability to understand and tolerate differing perspectives, readiness to live in a global society, broad interests in life, employability, and the development of intelligence aligned with students' talents and interests, along with environmental responsibility (Kemendikbud, 2014: 3).

The 2013 Curriculum's learning process is based on the '5M' steps: observing, questioning, reasoning, experimenting, and communicating. In essence, this curriculum aims to produce Indonesian citizens who are productive, creative, innovative, and affective, through the strengthening of integrated attitudes, skills, and knowledge.

In primary schools, the 2013 Curriculum emphasizes integrated learning, as primary school teachers often teach multiple subjects and manage multiple classes. Through integrated learning, teachers can connect various subjects under one meaningful learning theme. This curriculum typically employs a thematic-integrative model, a scientific approach, and authentic assessment. Thematic-integrative learning involves the integration of multiple subjects under a common theme. The scientific approach involves steps such as questioning, experimenting, and reasoning (as stated in the 2013 Curriculum), while authentic assessment measures all three domains—attitude, skills, and knowledge—based on both process and outcomes.

SD Negeri 01 Pretek Batang is one of the primary schools that implements the thematic-integrative approach. Teachers at this school teach subjects based on themes, such as those related to nature and human life. The goal of this thematic approach is to integrate learning objectives across the domains of attitude, skills, and knowledge during instruction. This way, students do not learn basic concepts in isolation but rather in a holistic and meaningful context as reflected in the given theme (Suyanto & Jihad, 2013: 11). At SD Negeri 01 Pretek, teachers typically use themes derived from students' surroundings. According to the teachers, this is a simple yet essential strategy, as students learn best from what is familiar. Consequently, teachers must prepare their learning materials thoroughly and have a deep understanding of the local context.

Several studies have explored the implementation of the 2013 Curriculum using a scientific approach at the primary level. For example, Sutrisno (2016) found that the scientific approach positively affects students' engagement and academic outcomes. Teachers who successfully incorporate the five scientific stages—observing, questioning, reasoning, experimenting, and communicating—tend to create more meaningful learning environments. However, challenges include time constraints and a lack of contextually relevant teaching materials.

Haryanto (2015) revealed that some teachers still struggle with implementing the 2013 Curriculum, especially with the scientific approach. The main issues cited were the lack of continuous training and insufficient learning resources tailored to the characteristics of primary students. Sari & Nurhayati (2017) stated that thematic-integrative learning effectively enhances students' understanding because the material is aligned with real-life themes, making it easier for teachers to connect content across subjects. Yuliani (2018) demonstrated that the scientific approach can enhance critical thinking skills in elementary students and highlighted the importance of teacher creativity in designing engaging and contextual learning activities. Widodo (2020) emphasized that the successful implementation of the curriculum is greatly influenced by teachers' ability to design lesson plans (RPP) aligned with the scientific approach and adapted to actual school conditions.

Based on the above issues, I am interested in examining the implementation of the 2013 Curriculum using a scientific approach at SD Negeri 01 Pretek Batang for several reasons: first, the school still applies the 2013 Curriculum; second, the teacher experiences no difficulty in applying the scientific approach, even when teaching more than two classes; and third, the teacher is capable of developing new learning materials to adapt the nationally standardized scientific teaching materials to the students' local environment.

METHOD

Type and Design

This type of research uses a qualitative method. The place of this research is at SD Negeri 01 Pretek Batang. Overall, all activities were carried out for approximately 1 month, namely from the beginning of June 2018 to the end of June 2018.

Data and Data Sources

The data in this study is the implementation of learning planning in the 2013 curriculum at SD Negeri 01 Pretek Batang. The data sources in this study consist of primary data sources, namely resource persons (teachers, principals and students), secondary data sources consist of archives or documents related to learning, such as lesson plans, syllabus, photographs, observation fieldnotes.

Data Collection Techniques

The data collection techniques used are interviews, documentation and observation.

Eabsahan Data

The technique of checking the validity of the data is carried out by triangulation of data sources, and triangulation techniques.

Data Analysis

Data is analyzed through interactive analysis.

RESULTS

Aspects contained in the learning plan

The aspects contained in the learning design refer to concepts, observing, questioning, reasoning, trying, and communicating. The preparation of learning steps is related to this concept, the teacher refers to the thematic method, which is related to "getting to know the surrounding world".

In its application, teachers ask students to be able to focus on the teaching materials or teaching aids that have been provided. Then ask students to be able to talk about the teaching material. Each class has a different level of difficulty according to their respective class. In the aspect of trying and communicating, the teachers of each class are more likely to implement a group and discussion system.

Learning steps

Based on the results of observations of grades 2, 3, 4, and 5 on October 11-16, 2018, during class hours, the steps taken based on the learning aspects of the 2013 curriculum are as follows.

Class 2

Observe

Teachers have prepared teaching materials from various subject areas in order according to the schedule to be taught such as Indonesian, Mathematics, cultural arts and crafts, physical education, sports and health.

Ask

In the process of asking questions, the teacher prepares material that will require students to dare to ask questions, With teaching materials in the form of teaching aids, students will become interested in what they have observed and the teacher guides students to be able to ask questions about what they observe.

Reasoning

In the reasoning aspect, teachers prepare learning in group learning and invite students to be able to oracle in groups.

Try

Regarding the reasoning process, students are invited to be able to try directly according to what the teacher ordered. In essence, teachers continue to use teaching materials that have been prepared to be able to invite students in their practice in class.

Communicate

In the aspect of communicating, teachers are more about making students able to think independently.

Class 3

Observe

In the aspect of observing grade 3 which is taught by class teacher Bp Siswoko in the planning process of teaching materials (materials) cannot be separated from KD (basic competencies).

Ask

In this aspect of asking questions, teachers will make students become active students with teaching materials that can inspire students and make students skilled. Factual teaching materials (props) are made accompanied by the Paikem learning method (Active, Innovative, Creative, Effective, and Fun Learning).

Reasoning

In the reasoning process, teachers use the same teaching materials and interesting methods, because the target is grade III elementary school children. Especially in the discussion process. In addition, in the reasoning process, students will be directed to be more active in practice.

Try

In the trial process, teachers prepare teaching materials (materials) to train them in practice. The purpose of trying this is that teachers can better cultivate students' abilities in attitudes, skills and knowledge.

Communicate

In the process of communicating, teachers prepare teaching materials so that they can make students active in gathering and discussing. Teachers prepare materials and assignments according to the teaching materials which then give them the opportunity to discuss with their friends.

Grade 4

Observe

The steps taken are to prepare useful materials, namely by preparing teaching materials in accordance with the material, and in preparing materials that challenge students to be interested in teaching materials is by using methods. Based on the lesson plan that has been received by the researcher, the material prepared is a book of materials with the theme of Care for Living Creatures for science lessons and character identification for the Indonesian language.

Ask

In this aspect of asking questions, the main goal is to make students to be active in asking questions through the teacher's guide and the materials used and methods used by the teacher. The steps prepared by teachers are to apply Paikem (Active, Innovative, Creative, Effective, and Fun Learning) lessons.

Reasoning

In this aspect of reasoning, the goal is for students to be able to think and reason realistically about what has been observed through the process of questioning. In essence, the props prepared must be attractive for children at elementary school age.

Try

In this aspect of trying, the teacher will prepare several props that are ready to be planted. So teachers prepare the teaching aids as simple as possible because in essence students can practice directly.

Communicate

In this aspect of communicating, students will be trained and learn how they solve problems in their lessons individually and also in groups. Then the results they get when they discuss in groups are results that must be agreed upon together.

Grade 5

Observe

The planning step carried out by grade V teachers in observing related to the material or teaching materials is that teachers prepare based on the existing material, namely by using the Student Book Theme: Objects in the Surrounding Environment.

Ask

In making the lesson effective so that it gives rise to the desire of students to be active in asking questions, the teacher will try to motivate the students. In essence, teachers use the material or media that will be prepared, while motivating students through the media, trying to provoke students to actively ask questions, whether with the question "why is that?", "what does this mean?", and so on.

Reasoning

In the reasoning process, teachers must prepare teaching materials that can make students think realistically and practically. The process that will be prepared in teaching and learning is by giving questions or assignments and students must face directly with the media provided. With what they see, they will be trained to reason through the process of asking questions beforehand.

Try

In the process of trying more about how students will try to practice directly. This trying process will float students' abilities through several previous processes, such as observing, questioning and reasoning, and with sufficient provisions they will be given the opportunity by the teacher to try. Through the media that has been prepared by the teacher, the teacher will give assignments to students.

Communicate

In the process of communicating, the teacher will guide students to be able to work individually and also in groups, so what the teacher prepares is how to not get bored when completing the tasks given by the teacher individually, the focus remains when they are given the opportunity to discuss.

Difficulties faced by teachers in preparing lesson plans in the 2013 curriculum at SD Negeri 01 Pretek Batang.

Teachers say that what already exists is actually good, therefore teachers continue to use existing teaching methods and materials. According to him, this will affect teachers' ability to teach which is a little less honed in the way they improvise. Teachers do not have problems with existing teaching methods and materials, which according to him has a problem when they first received the 2013 curriculum.

So, the difficulties faced by pretek Batang elementary school teachers in the implementation of the 2013 curriculum are not too big. Because of their habit in teaching elementary school children, they already have a teaching method that they always apply every day they teach.

DISCUSSION

The implementation of the 2013 Curriculum with a scientific approach at SD Negeri 01 Pretek Batang demonstrates a consistent effort by teachers to integrate the five core elements of the scientific approach—observing, questioning, reasoning, trying, and communicating—into their daily teaching practices. These five stages are not only theoretical foundations of the curriculum but have been operationalized in classroom activities across multiple grade levels.

In practice, the learning design aligns with the thematic approach emphasized by the 2013 Curriculum, which seeks to foster meaningful and contextual learning experiences. The choice of themes such as "knowing the surrounding world" reflects an understanding of the importance of environmental and contextual relevance in early education. This supports the findings of Sari & Nurhayati (2017), who stated that thematic-integrative learning helps students better understand materials when themes are drawn from their daily lives.

The observations from grades 2 through 5 indicate that teachers are able to apply the scientific approach with contextual variation appropriate to the students' developmental levels. For example, in the observation phase, materials are prepared using student books, thematic content, and concrete teaching aids. This provides stimuli for inquiry and aligns with Paikem learning principles (Active, Innovative, Creative, Effective, and Fun Learning), as seen especially in grades 3 and 4. These approaches aim to support not just cognitive, but also affective and psychomotor development.

In the questioning phase, the teachers' efforts to provoke student curiosity by using realia, visual aids, and questioning strategies show their understanding of how to stimulate critical thinking. This echoes Yuliani (2018), who emphasized the importance of teacher creativity in fostering students' critical thinking skills. Encouraging students to ask "why" and "how" fosters deeper learning and metacognitive skills, which are essential components of 21st-century education.

The reasoning and trying phases are also well-incorporated across classrooms. Teachers use group work, discussion, and hands-on activities, which allow students to practice reasoning through collaborative exploration. This is particularly effective in developing both social and analytical skills and aligns with Sutrisno (2016), who reported that the scientific approach positively influences student engagement and academic outcomes. The preparation of props and experiments that are simple and accessible further demonstrates the teachers' responsiveness to classroom realities and student needs.

In the communicating phase, there is a shift towards independent and group presentations, reporting findings, and summarizing ideas. Teachers guide students to express their understanding through discussions and presentations, enhancing their ability

to convey thoughts clearly. This process not only improves communication skills but also reinforces content mastery and confidence in speaking.

Despite the largely successful implementation, some challenges remain. Teachers noted that their primary difficulty occurred when the 2013 Curriculum was first introduced. However, with time and experience, these challenges diminished. This supports Haryanto's (2015) findings, which revealed that the main issue in implementing the scientific approach often lies in the early stages due to a lack of continuous professional development and suitable learning resources. Teachers at SD Negeri 01 Pretek Batang have largely overcome these barriers through habitual teaching practices and adaptation.

Interestingly, the teachers expressed that while the curriculum and teaching aids are generally adequate, the structure may limit their opportunities to improvise or innovate. This may suggest that while standardization is beneficial for ensuring consistency, it can inadvertently restrict pedagogical flexibility. Such findings align with Widodo (2020), who highlighted the importance of teacher autonomy and creativity in crafting lesson plans that are both curriculum-aligned and contextually responsive.

Overall, the study shows that the implementation of the scientific approach in the 2013 Curriculum has been adapted effectively at SD Negeri 01 Pretek Batang, thanks to the teachers' dedication and contextual understanding. Continued professional development, especially in designing adaptive learning materials and fostering teacher creativity, would further enhance the implementation process and address remaining gaps in flexibility and innovation.

CONCLUSION

Based on the results and discussion, it can be concluded that the implementation of the 2013 Curriculum using a scientific approach at SD Negeri 01 Pretek Batang has been carried out effectively and systematically. Teachers successfully applied the five core stages of the scientific approach—observing, questioning, reasoning, trying, and communicating—within the framework of thematic-integrative learning. The preparation and execution of lesson plans were consistent with curriculum demands while remaining sensitive to students' real-world contexts and developmental needs.

Teachers adapted their strategies according to the learning objectives and the characteristics of each grade level, utilizing teaching materials, props, and thematic content to foster active participation, critical thinking, and collaborative learning among students. The use of PAIKEM (Active, Innovative, Creative, Effective, and Fun Learning) principles further enriched the learning experience, particularly in encouraging students to ask questions and express their reasoning.

Although teachers initially faced challenges during the early implementation of the 2013 Curriculum, such as adapting to new planning formats and scientific processes, these obstacles have been overcome through continuous practice and experience. Teachers at SD Negeri 01 Pretek Batang demonstrated a high level of commitment to curriculum implementation, even when handling multiple classes simultaneously. They also showed the ability to modify and adapt national teaching materials to better suit the local learning environment.

Overall, the study highlights that the success of the 2013 Curriculum implementation heavily depends on teacher preparedness, creativity, and the ability to contextualize learning for students. Further support in professional development and access to more flexible learning resources would strengthen the effectiveness of the scientific approach and integrated learning models in primary education.

REFERENCES

Haryanto. (2015). Kesulitan guru dalam implementasi Kurikulum 2013 di sekolah dasar. Jurnal Pendidikan Dasar, 6(1), 45–53.

Kementerian Pendidikan dan Kebudayaan. (2014). Konsep dan implementasi Kurikulum 2013. Jakarta: Kemendikbud.

Nana, S., & Sukirman, D. (2008). Perencanaan pembelajaran. Bandung: UPI Press.

Sari, M., & Nurhayati, E. (2017). Efektivitas pembelajaran tematik integratif berbasis Kurikulum 2013 di SD Negeri Kota Yogyakarta. Jurnal Pendidikan dan Pembelajaran Dasar, 4(2), 90–99.

Sutrisno. (2016). Implementasi pendekatan saintifik dalam Kurikulum 2013 pada pembelajaran tematik di sekolah dasar. Jurnal Ilmu Pendidikan, 8(1), 12–20.

Suyanto, & Jihad, A. (2013). Menjadi guru profesional: Strategi meningkatkan kualifikasi dan kualitas guru di era global. Jakarta: Erlangga.

Widodo, A. (2020). Analisis perencanaan pembelajaran guru sekolah dasar dalam implementasi Kurikulum 2013. Jurnal Pendidikan dan Kebudayaan, 10(1), 34–41.

Yuliani, D. (2018). Penerapan pendekatan saintifik dalam pembelajaran tematik untuk meningkatkan keterampilan berpikir kritis siswa. Jurnal Pendidikan Sekolah Dasar, 3(3), 77–85.