

## **ANALYSIS OF THE IMPLEMENTATION OF THE INDEPENDENT CURRICULUM ON ELEMENTARY SCHOOL FRACTION MATERIAL**

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### **ABSTRACT**

The Independent Curriculum is a learning framework designed to provide teachers with the flexibility to design the teaching and learning process based on students' needs, interests, and potential. The independent curriculum is an independent program that emphasizes context-based learning, character building through the Pancasila Student Profile, and a differentiation approach that allows students to learn at a pace and method that suits their abilities. Through an adaptive and flexible approach, the Independent Curriculum aims to create a more relevant, meaningful, and contextual learning experience for students. Fractions are one of the important materials in basic mathematics because they provide a foundation for understanding more complex concepts such as decimals, percentages, and algebra. In the independent curriculum, this separate material aims to improve conceptual understanding, critical thinking skills, and application skills through a context-based approach and strengthen the Pancasila student profile. This article analyzes the implementation of the Independent program in distributed learning in elementary schools, including planning, implementing, and assessing learning. The results of the analysis show that the independent curriculum provides teachers with the flexibility to develop innovative learning strategies, such as Real-World Mathematics (RME) and project-based learning, so that students can connect fractions to everyday situations. However, the challenge is the lack of teacher understanding of the new approach and limited learning resources are still obstacles in its implementation. This article recommends teacher training and the development of contextual learning materials to support the successful implementation of the Merdeka Curriculum in fraction learning.

***Keywords:*** *Independent Curriculum, Fraction Material, Elementary School*

## INTRODUCTION

The curriculum is a basic guideline in the teaching and learning process in the world of education. The curriculum is also a very important support for the success of education. Education also views the curriculum as a program that can be changed at any time based on educational needs. The education program in Indonesia has a very long history from year to year. The journey undertaken in developing this program aims to improve education in Indonesia and develop it rapidly. So along the way, several research programs were launched. The curriculum changes that occur in Indonesia are greatly influenced by human needs that are always changing due to external influences. In general, a program cannot stand alone but is influenced by changes in climate, economy, politics and culture. Therefore, the changes that occur, especially in Indonesia, are very natural and must go through the world of education. (SHELEMO, 2023)

The Independent Curriculum is an education policy that aims to create flexible, contextual learning that is in accordance with the needs of students. At the Elementary School (SD) level, the Independent Curriculum provides space for teachers to use innovative methods, such as project-based learning, rme, to strengthen students' understanding of important concepts, including fractions. Fraction material is an essential part of mathematics learning because it is the basis for understanding advanced concepts such as decimals, percentages, and comparisons.

The Independent Curriculum is an educational policy designed to provide flexibility to schools, teachers, and students in implementing relevant, adaptive, and needs-based teaching and learning processes. This curriculum emphasizes project-based learning, differentiated learning, Realistic Mathematics Education (RME) and character building through the Pancasila Student Profile. Through the Independent Curriculum, teachers have an important role as facilitators who support students to understand concepts in depth, develop critical thinking skills, and apply knowledge in everyday life. This approach is designed to answer the challenges of modern education by providing a wider space for innovation, ensuring that learning is not only theoretical but also contextual and meaningful and can be directed into everyday life. (Damayanti et al., 2023)

Fraction material in mathematics is a concept that describes a part of a whole or unit that is divided into several equal parts. Fractions are usually expressed in the form  $\frac{a}{b}$  where  $a$  is the numerator indicating the number of parts taken, and  $b$  is the denominator indicating the number of parts in the whole. Fraction material covers various concepts such as types of fractions (proper fractions, mixed fractions, and decimal fractions), arithmetic operations with fractions (addition, subtraction, multiplication, and division), and the application of fractions in everyday life. Understanding fractions is

very important because it is the basis for understanding more complex mathematical concepts, such as comparison, percentages, and decimal numbers. (Education, 2023)

Fraction material is one of the basic concepts in mathematics taught in elementary school. In simple terms, fractions describe parts of a whole or unit that are divided into several equal parts. Fractions are usually expressed in the form  $\frac{a}{b}$  where a (numerator) indicates the number of parts taken, and b (denominator) indicates the number of parts in the whole. The concept of fractions includes various types, such as improper fractions, mixed fractions, and decimal fractions.

In the process of teaching and learning mathematics at the elementary school level, fractions are important material because they serve as an initial foundation for understanding more complex mathematical concepts, such as decimal numbers, percentages, comparisons, and even algebra. In addition, fraction material has wide applications in everyday life, for example in food distribution, measurement, financial calculations, and various other practical activities.

However, mastering fraction material is often a challenge for students because of its abstract nature. Many students have difficulty understanding the relationship between the numerator and denominator, performing arithmetic operations with fractions, or connecting fractions to real situations. Therefore, a learning approach is needed that not only teaches concepts mechanically, but also fosters deep understanding through concrete and contextual activities.

Through the Independent Curriculum, learning fraction material is directed to strengthen students' conceptual understanding in a relevant and applicable way. Context-based approaches, such as Realistic Mathematics Education (RME) and project-based learning, provide opportunities for students to understand fractions in real and meaningful situations. Thus, fraction material is not only learned as a mathematical concept, but also as an important life skill to be mastered from an early age. (Masfiastutik et al., nd)

Elementary School (SD) is a formal education level that is the initial foundation for the formation of students' academic, social, and character abilities. In Indonesia, Elementary School is part of basic education that lasts for six years, covering grades I to VI, and is intended for children aged 6 to 12 years. At this level, students are introduced to various basic scientific fields, such as mathematics, Indonesian, natural sciences, social sciences, and religious and moral education. (Amir, 2015)

As the most fundamental level of education, Elementary Schools have a strategic role in instilling literacy skills, numeracy, and character values that form the basis for learning at the next level. In addition, elementary schools also function to develop students' potential as a whole in accordance with the goals of national education, namely to create individuals

who are faithful, pious, intelligent, creative, independent, and have noble personalities.

In the context of learning mathematics in Elementary School, basic materials such as fractions, measurement, and arithmetic operations are the main focus for building logical thinking and problem-solving skills. The curriculum implemented in elementary schools, such as the Merdeka Curriculum, is designed to support students' developmental needs by providing flexibility in learning, strengthening conceptual understanding, and integrating the values of the Pancasila Student Profile. Thus, Elementary School becomes a very important initial foundation for forming individuals who are ready to face challenges at the next level of higher education as well as in their application in everyday life.

Based on the background that has been described, it is known that the implementation of the Independent Curriculum in mathematics learning in Elementary Schools is a very important need that aims to improve the quality of education in elementary schools that are the most basic. By reviewing the existing literature, this study is expected to contribute to the development of better and more effective learning practices, as well as support the achievement of national education goals. This study aims to analyze the implementation of the Independent Curriculum on Fraction Material in Elementary Schools through in-depth study of articles or journals. By understanding how this independent curriculum can be applied in the field, it is hoped that effective strategies can be found that can help teachers overcome existing challenges. In addition, this study will also provide insight into how this independent curriculum can contribute to improving students' mathematical abilities and its impact on learning outcomes and can be developed in everyday life.

## **METHODS**

This study is included in the literature study that aims to analyze the implementation of the independent curriculum on fraction material in schools can be implemented as well as possible and in its application can be developed in everyday life. By using learning methods, teachers can implement it to students well. A qualitative approach is also used to provide in-depth insight into the implementation of the independent curriculum in the mathematics teaching and learning process, including the challenges faced, scientific integration, technology, to authentic assessment in the mathematics learning process using the independent curriculum. The article analysis method applied in this study is to examine a number of articles or scientific journals that are considered relevant and have been tested. Through this research, it is hoped that it can contribute to the development of the teaching and learning process and in the interview process, documentation sessions and videos in teaching.

## RESULTS AND DISCUSSION

This study is a study that examines several articles that aim to analyze the implementation of the independent curriculum on fractional material in elementary schools. The research method uses a qualitative research method which is also used to provide in-depth insight into the implementation of the independent curriculum in elementary schools in the mathematics teaching and learning process, including the challenges faced, the evaluation system used and the methods taught in schools. The mathematics learning method using lectures, discussions, questions and answers is applied in this study to examine a number of articles that are considered relevant. Through the analysis of the implementation of the independent curriculum on fractional material in elementary schools, researchers hope to be able to contribute to the development of learning strategies with learning designs in the form of RME and Projects and can apply them in everyday life.

In this study, the researcher used three articles that aim to provide strong direction to understand how to implement the independent curriculum on fraction material in elementary schools with elements of learning design methods both through RME and projects. By understanding this study, it is hoped that it can contribute to the development of more effective and relevant learning strategies on fraction material in elementary schools. In addition, the results of this study can also be a reference for improving the quality of mathematics education in elementary schools, so that they can support students in building logical, critical, and creative thinking skills according to the demands of the current independent curriculum.

Table 1.1 Identification of Articles on Independent Curriculum

Title & Researchers	Conclusion
Andira, CP, Sholeh, K., & Syaflin, SL (2024). Analysis of the Implementation of the Independent Curriculum in Mathematics Learning for Grade IV at SD Negeri 07 Palembang. 3(4), 2413–2419.	The curriculum is developed to improve the quality of education, because the core of education is the curriculum (Liana et al., 2023). Independent curriculum creates active and creative learning. This program does not replace existing programs, but provides improvements to existing systems (Achmad et al., 2022). The National Education System Law Number 20 of 2003 states that in order to achieve national education goals, education providers require a curriculum as a program that contains a set of curricula and is related to the objectives, content, and learning materials. and methods used in the learning process.

Title & Researchers	Conclusion
	The four indicators are Learning planning, Learning implementation, Learning evaluation and Student behavior
Khismawati, HM, Hidayati, S., & Jayanti, DD (2017). Analysis of Students' Difficulties in Understanding Mixed Fraction Material for Grade V Elementary School. 3(3), 148–162.	The implementation of the independent curriculum also makes it difficult for students to understand this fraction material because, first, students have difficulty in using concepts, there are still students who have difficulty in understanding concepts such as not memorizing multiplication, second, students have difficulty in using principles, there are still students who have difficulty in using mathematical principles such as not understanding mathematical formulas, and students have difficulty in solving verbal problems, there are still students who have verbal problems such as drawing conclusions and simplifying the language of mixed fraction story problems.
Resty Panginan, V., & Susianti, S. (2022). The Effect of Implementing the Independent Learning Curriculum on Mathematics Learning Outcomes Reviewed from a Comparison of the Implementation of the 2013 Curriculum. Journal of Elementary School Teacher Education, Lamappapoleonro University, 1(1), 9–16. <a href="https://doi.org/10.57093/jpgsdunipol.v1i1.7">https://doi.org/10.57093/jpgsdunipol.v1i1.7</a>	The independent learning curriculum that has now been implemented has a distinctive program characteristic, namely the driving school program consisting of driving teachers, practitioners, and facilitators. Driving teachers are a program to create mentor teachers for each school to implement the values of the implementation of the independent learning curriculum and as informants (resource persons) in providing the training they receive to their schools of origin to empower other teachers. Driving teachers create visionary, creative, and critical teachers so that they can empower their students in exploring various learning materials.

The results of the analysis of the implementation of the study in three articles on the independent curriculum show that the implementation of the independent curriculum in elementary schools has been very good, but there are still several obstacles encountered by researchers in the process of learning mathematics, especially fractions in class, namely teachers must be

more creative in teaching and can use the RME method or project-based learning methods and can be related to everyday life. The role of parents is also very much needed at home. In facing various challenges, including teacher readiness, book distribution, and difficulties in adapting by students and parents to the fraction material lesson. Teachers are expected to be facilitators who support a scientific approach to developing creative thinking skills in fraction material in mathematics lessons, although teaching practices are still predominantly using traditional methods. Innovations such as interactive multimedia, ethnomathematics, and authentic assessments help create more effective learning, but teachers' limited understanding of technology requires intensive training. Routine evaluation and improvement are needed to ensure the success of the implementation of the independent curriculum in elementary schools.

Basically, students still experience difficulties in working on fraction problems due to several factors, including not being able to carry out the learning process in the classroom, so teachers must make efforts to overcome these difficulties. According to (Khismawati et al., 2017) believes that teacher efforts can be done by encouraging students to be active and proactive in learning. Because at school, teachers are the parents of all students in the school. Because the teaching and learning process takes place when the teacher is delivering the material, the teacher should use an interesting teaching method so that students remain focused on listening and the teacher should manage it by communicating to achieve understanding for students. Teachers need to pay attention to where the difficulties lie and what efforts are needed to overcome the difficulties faced by students in learning fractions, so that the teaching and learning process can be effective and achieve maximum learning outcomes and parental support at home is also very much needed during learning at home and in everyday life. The role of parents is also important to achieve optimal learning outcomes.

### **Obstacles in Implementing the Independent Curriculum**

One of the main obstacles in implementing the Independent Curriculum in fraction learning in Elementary Schools, there are a number of obstacles that are often faced by teachers and students, including:

1. **Limited Understanding of Independent Curriculum by Teachers**  
Basically, there are still many teachers who do not fully understand the principles and innovative approaches offered by the Merdeka Curriculum, such as project-based learning and strengthening the Pancasila Student Profile. This can affect the effectiveness of planning and implementing fraction learning.
2. **Time Limitations for Contextual Learning**  
Fraction material often takes longer to be taught contextually using props or projects. However, limited time allocation in the daily schedule makes it difficult for teachers to implement this method optimally, because

fraction material is one of the complex materials and must be taught in detail and more effectively, so that students can understand the meaning of the fraction itself and can be developed in everyday life.

3. **Lack of Resources and Learning Media**

Learning resources and media are really needed in mathematics lessons. Contextual learning media, such as manipulatives or digital tools, are often not available in schools and teachers also lack creativity in creating teaching aids. In fact, this media is very important to help students understand abstract concepts such as fractions.

4. **Student Difficulty Level in Understanding Fractions**

Fraction material is one of the materials that is considered difficult by students, especially if it is taught mechanically without involving concrete activities or relevance to everyday life. This can reduce student interest and motivation, therefore teachers are required to provide motivation in teaching so that students understand the material better.

5. **Limitations of Teacher Training**

The lack of training that equips teachers with the ability to implement the Independent Curriculum, especially in the context of fractional material, is still limited. Teachers need more in-depth advanced training related to learning strategies and innovations so that fractional material can be taught to students so easily to understand.

6. **Challenges in Authentic Evaluation**

The project-based or portfolio-based evaluation or assessment system recommended in the Independent Curriculum requires more time and energy, thus becoming an obstacle for teachers who have to handle many students in one class.

The importance of an independent curriculum in schools should be that students are not forced to study subjects that they are less interested in, the teaching and learning process feels fun because the independent curriculum prioritizes learning that is appropriate to the child's understanding phase which is more free according to the student's needs, encourages students to be more active, creative, innovative, independent in learning, creative, and in the independent curriculum students are not forced to master all subjects. In addition, the importance of an independent curriculum for teachers is to use time and space for teachers to be creative and innovative when designing learning that is appropriate to the context and needs of students, teachers can simplify teaching materials should be more emphasized in crucial and relevant concepts. Teachers can also be closer to students through non-cognitive diagnostic assessments. After the implementation of the independent curriculum, there are no more students who are afraid to learn mathematics. In the independent curriculum, students are not required to know how to make mathematics learning more enjoyable. One way to realize enjoyable mathematics learning in the independent curriculum is to apply

multifaceted learning in problem solving according to the abilities or skills of the students themselves. (Andira et al., 2024)

The independent learning curriculum that has now been implemented has special characteristics, namely the driving school program consisting of driving teachers, practitioners, and facilitators. Driving teachers are an event to build mentor teachers for each school to implement values according to the implementation of the independent learning curriculum and become informants (resource persons) during the coaching they receive at school to empower other teachers. Driving teachers build visionary, creative, and critical teachers who should be able to empower their students to explore various learning materials. (Resty Panginan & Susianti, 2022).

### **The Role of Teachers in Independent Curriculum Analysis on Fraction Material**

The role of teachers is highly prioritized in the independent curriculum program because teachers as facilitators are one of the main keys in implementing the independent curriculum. A teacher has a very central role in the implementation of the Independent Curriculum, especially in the teaching and learning process of fractions in Elementary Schools. Because as a facilitator, teachers must be able to design learning that is contextual, creative, and relevant to students' daily lives. This includes the use of teaching aids, technology, or project-based activities to explain fraction concepts concretely. Teachers also need to accommodate the diverse learning needs of students through a differentiated learning approach, so that each student has the opportunity to understand the material according to their abilities.

A teacher also acts as a motivator who encourages students' curiosity about mathematics through interactive and fun strategies. In the context of fraction material, teachers can relate learning to real activities, such as dividing cakes or measuring ingredients in cooking that are related to everyday life. Another role that is no less important is as an evaluator, where teachers must be able to develop authentic assessment methods that not only measure cognitive learning outcomes, but also students' understanding of concepts and application abilities.

Ultimately, to carry out these roles effectively, teachers need adequate training support and resources to make it easier for teachers to continue the teaching and learning process in schools. Teachers must understand the principles of the Independent Curriculum, such as strengthening the Pancasila Student Profile, and have skills in using technology and learning media. By carrying out this role optimally, teachers can ensure that the implementation of the Independent Curriculum on fraction material runs well, so that students are able to understand and apply the concept in their lives.

The Independent Curriculum is an education policy that aims to create flexible, contextual learning that is in accordance with the needs of students. At the Elementary School (SD) level, the Independent Curriculum provides

space for teachers to use innovative methods, such as project-based learning, to strengthen students' understanding of important concepts, including fractions. Fraction material is an essential part of mathematics learning because it is the basis for understanding advanced concepts such as decimals, percentages, and comparisons.

### **Advantages of the Independent Curriculum in Learning Fractions**

The implementation of the Independent Curriculum brings several advantages in learning fractions. One of them is the flexibility that allows teachers to design context-based learning. With this approach, students can understand fractions through activities that are relevant to students' daily lives, such as dividing food or measuring length. In addition, strengthening the Pancasila Student Profile allows students not only to understand concepts cognitively, but also to develop character values, such as cooperation and responsibility in group projects involving fractions.

### **Obstacles in Implementation**

Despite its many advantages, the implementation of the Independent Curriculum also faces challenges. One of the main obstacles is the limited understanding of teachers regarding the recommended innovative approach. Many teachers have not fully mastered the project-based learning method or the use of teaching aids to teach fractions. In addition, time constraints are also an obstacle to the implementation of in-depth learning, especially for materials that require a concrete approach. Another challenge is the lack of learning resources, such as manipulative media or digital devices, that can help students understand fractions visually and contextually. This obstacle should be able to be assisted by the school to be able to provide solutions by providing training for teachers aimed at improving the teaching capacity of teachers by using the latest methods and media / teaching aids where teachers must also be more creative when carrying out the teaching and learning process. The training in question is several training programs in the use of teaching aids, technology and in group discussions, there are also separate techniques that are funded by the government in order to achieve better learning achievements in the future.

### **Strategies for Overcoming Obstacles**

To overcome these obstacles, intensive training is needed for teachers related to the learning approach in the Independent Curriculum. Teachers need to be equipped with innovative strategies, such as Realistic Mathematics Education (RME), which can help students understand fractions through real situations. In addition, schools also need to provide supporting resources, such as teaching aids or digital media, to support learning. More flexible scheduling and collaboration between teachers in designing learning projects can also increase the effectiveness of fraction learning.

## CONCLUSION

Based on the results of the research and discussion, the following conclusions can be outlined regarding the Analysis of the Independent Curriculum on elementary school fraction material, namely:

1. The main obstacle lies in the lack of teachers' ability to create teaching aids or learning tools based on RME and projects so that the teaching and learning process is not optimal, especially for fraction material.
2. Its implementation is faced with several obstacles, such as teachers' lack of understanding of the principles of the Independent Curriculum, limited learning resources, and challenges in managing time and the diversity of student abilities. In addition, the need for ongoing training and the provision of adequate facilities are important factors that need to be considered.
3. This independent curriculum provides a great opportunity to improve the quality of mathematics learning through a flexible, contextual, and student-needs-based approach.
4. By providing opportunities for teachers to use innovative methods, such as project-based learning and authentic assessment, the Independent Curriculum RME is able to support a deep and applicable understanding of fraction concepts.
5. The successful implementation of the Independent Curriculum in fraction learning requires close cooperation between the government, schools, and teachers. Intensive training, provision of supporting learning media, and more adaptive planning can help optimize the implementation of this curriculum, so that the main goal of creating relevant, meaningful, and positively impactful learning for students can be achieved.

This curriculum provides opportunities for more flexible and contextual learning. However, its success requires teacher readiness, resource support, and an adaptive approach. With the cooperation of various parties, fraction learning can be more relevant and effective for students. Cooperation between parents of students and teachers can also have a very positive influence on students in understanding the subject matter not only for fractions, but for all subject matter. The role of the government is very much needed here in order to provide very contextual training so that good evaluation achievements can be achieved and all student materials can be understood which are contained in the independent curriculum, students are not forced to be able to understand all subjects, but more to the student's preferences and can be developed well in everyday life.

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