



Innovative approach: Teachers' perceptions of implementation Merdeka Belajar Curriculum in physics education

Alfina Yunita Puteri, Afaurina Indriana Safitri, Yeni Sherliyanti, Innita Fashihatul Qiro'ah, Vinka Amalia Mustafaroh, Setyo Admoko*, Suliyanah, Imam Sucahyo

Universitas Negeri Surabaya, Ketintang, St., Surabaya, East Java, 60231, Indonesia

e-mail: setyoadmoko@unesa.ac.id

* Corresponding Author.

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Abstract: These various perceptions emerged both positive and negative perceptions regarding the implementation of the latest curriculum, namely the Merdeka Belajar curriculum. The purpose of writing this scientific article is to explore various teachers' perceptions regarding the implementation of the Merdeka Belajar curriculum in physics subjects. The research was conducted at one of the state high schools in the Surabaya area. The approach used in this research is a qualitative approach with a case study method. The data collection technique was carried out using purposive sampling and data triangulation as an analysis technique. This research includes the perceptions of physics teachers regarding the implementation of the Merdeka curriculum. There were positive and negative responses conveyed by the teachers. The shortcomings of the Merdeka curriculum implemented in schools are that teachers are still unable to adapt to the relatively new Merdeka curriculum and there is still a lack of information and references regarding the Merdeka curriculum teaching modules. The solution that can be applied to overcome this problem is that schools must pay more attention to teachers by holding more frequent training activities in preparing learning devices, providing access to training in using technology-based learning support media, and restructuring schedules for implementing P5 activities to be more optimal. The implementation of the Merdeka curriculum in this school has resulted in many teachers' perceptions of creating learning tools that are in accordance with this new curriculum. Apart from that, P5 activities with 12 more hours than other subjects make students take these activities more lightly.

Keywords: Merdeka Belajar curriculum; physics learning; physics teacher perceptions

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Introduction

Education is basically an effort to improve the capabilities of human resources so that they can become independent human beings and can contribute to society and the nation (Malik, 2018). Education is an important part of life so its quality must always be improved (Biesta, 2017; Margot & Kettler, 2019; Rusilowati & Wahyudi, 2020). One way to improve the quality of education is through improvements to the existing curriculum system (Fernandez, 2017).

In simple terms, the curriculum is a guideline used by educational units in the process of organizing learning activities to facilitate the process of achieving educational goals (Barus & Simanjuntak, 2020; Komalasari et al., 2020; Renzulli, 2023; Wijngaards-de Meij & Merx, 2018; Wrigley & Straker, 2017). The curriculum used by education units in Indonesia in recent years has undergone

many changes, such as the competency-based curriculum (KBK) 2004, the Education Unit Level Curriculum (KTSP) 2006, the 2013 Curriculum (K-13), and the Merdeka Belajar curriculum (Leasa & Batlolona, 2023; Rohman et al., 2023). Over the last two years, universities in Indonesia have designed curricula that provide the widest possible opportunities for students to master the various types of knowledge needed. This curriculum is based on one of the policies of the Minister of Education and Culture, known as Merdeka Belajar - Kampus Merdeka (MBKM) (Fuadi & Irdalisa, 2021; Purwanti, 2021). With changes to the curriculum in the education sector, this will of course have an impact on the perceptions of various parties. The wrong perception of curriculum change with the aim of actual curriculum change will have an impact on the emergence of transition obstacles to this change.

This connection with the surrounding environment is manifested as an understanding of information obtained by related people. The understanding obtained by someone will of course be different from one another. This is because each person has differences in the process of interpreting the information they get (the information process that occurs between one person and another is different). This knowledge includes an understanding of the curriculum used in schools. Teachers' knowledge and understanding give rise to good perceptions that enable them to develop and implement the curriculum appropriately (Ab Kadir, 2017; Margot & Kettler, 2019; Webb et al., 2017; You, 2017). One of the differences in perception appears in the latest curriculum implemented, namely the Merdeka Belajar curriculum.

The Merdeka curriculum provides flexibility for teachers in creating a quality learning process by adapting to the conditions of the school and its students (Hadi et al., 2023; Irawati et al., 2022). The Merdeka Curriculum has several distinctive characteristics, namely the development of soft skills and character which is realized through a project to strengthen the Pancasila (P5) student profile, a focus on essential material, and a flexible learning process (Fajri & Yarmi, 2023; Putri & Nurdin, 2022). The Merdeka Curriculum was created when Indonesia experienced the Covid 19 pandemic in 2020. At that time education in Indonesia took place online, resulting in significant changes to the education system. Teachers and students also have to adapt to existing conditions. So that the tool can become a learning intermediary between teachers and students, it is hoped that students will be able to create their own competencies in accordance with the interpretation of the curriculum (Sebastian, R et. al., 2023). Online learning requires facilities and infrastructure such as laptops, cellphones and internet networks. Meanwhile, these facilities and infrastructure are not always available to all students, especially those who live in remote areas. Due to these conditions, the government finally created a new curriculum, namely the Merdeka curriculum. In this curriculum, educators can create a learning process according to school conditions and students. So it is hoped that students can better understand the material discussed. The Merdeka curriculum is the curriculum used in sekolah penggerak curriculum.

The sekolah penggerak curriculum supports progression to one or two levels further for private schools in all school conditions. The program will be implemented in stages and all schools in Indonesia will be integrated into the ecosystem until it becomes the sekolah penggerak program (Muji, et al., 2021). The sekolah penggerak Program has become the Ministry of Education and Culture's flagship program which is currently valid nationally (Nursalam, et al., 2023). Teachers in sekolah penggerak can also be referred to as guru penggerak. Guru penggerak is a learning leader who applies Merdeka Belajar and mobilizing the entire learning ecosystem to make it happen student-centered education (Suwartiningsih, 2021). Application of Merdeka curriculum is an optional policy of each school. Some schools admitted that they were not adept at implementing Merdeka curriculum (Effendi, et al., 2023). The existence of various characteristics that make up the body of the Merdeka curriculum is what triggers the emergence of perceptions from various parties.

The process of implementing Merdeka curriculum should be analyzed from the perspective and performance of teachers during implementation. This perspective was analyzed to determine teacher responses to the Merdeka curriculum policy (Effendi, et al., 2023). This curriculum development requires teachers to develop their pedagogical competencies in order to implement the independent curriculum optimally (Hamdi, S. et. al., 2022). Thus, the aim of writing this scientific article is to explore various teachers' perceptions of one of the essential subjects in the Merdeka curriculum, namely physics, regarding the implementation of the Merdeka Belajar curriculum. The process of extracting

detailed information about the Independent Curriculum like this can provide benefits for future researchers, namely that it can be used as a reference in similar research to support the process of improving the quality of education in the future.

Method

This research was conducted at one of the state high schools in Surabaya. The approach used in this research is a qualitative approach with a case study method. The instrument used in this research was in-depth interviews with four physics teachers from one of the Surabaya State High Schools regarding the implementation of the new curriculum, namely the Independent Learning Curriculum. The data collection technique was carried out using the Purposive Sampling technique.

Purposive sampling is a form of non-probability sampling in which decisions regarding the individuals to be included in the sample are made by the researcher (Etikan et al., 2016; Oribhabor & Anyanwu, 2019; Pace, 2021; Vehovar et al., 2016). This technique has several advantages, such as shorter research time, saving research costs, making it easier for researchers to determine the right sample and a more flexible research sampling process (Bakkalbasioglu, 2020; Bhardwaj, 2019; Leighton et al., 2021; Mujere, 2016). In simple terms, the flow of this research is shown in Figure 1 as follows.

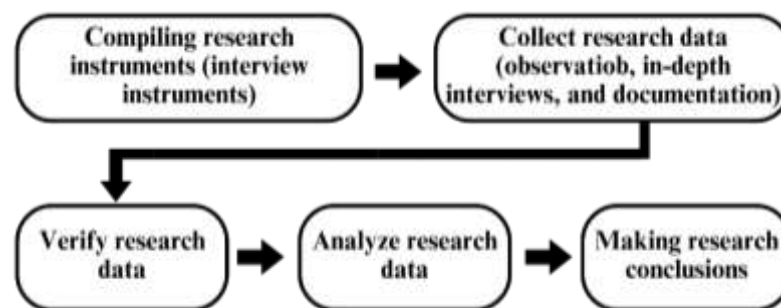


Figure 1. Flow of Research Stages

Based on Figure 1 above, it is known that once the research instrument is ready, the next step is to collect data. The data collection method used during the research process is the data triangulation method by integrates a qualitative descriptive approach it. The triangulation method is a data collection method involving three different data sources (Flick, 2018; Hanson-DeFusco, 2023; Natow, 2020; Santos et al., 2020; Yousif et al., 2018). This method has the benefit that the data obtained has a high level of accuracy because it does not only rely on one source (Heesen et al., 2019; Moon, 2019; Turner et al., 2017). In this research, researchers used observation, in-depth interviews with sources, and documentation as data sources which were carried out simultaneously.

Next, after obtaining data through the triangulation method, the researcher verified the data. The process of verifying temporary conclusions can be carried out by repeating the research steps, namely by tracing back all the research steps that have been carried out, including reviewing data collected from the field by reinforcing the form of literature studies sourced from scientific journals, books, and websites with a level of credibility. high reduction (data reduction) is carried out based on field notes (removing information that is not by research needs) and existing temporary conclusions have been formulated. The final step is to make the conclusion concisely, clearly, and in a straightforward manner so that it is easy to understand.

Results and Discussion

Perception is an important thing because it is evidence that is created as an impact felt by someone about something that has happened (implemented) in the surrounding environment. Perception is a cognitive process that is related to the surrounding environment (De Luca & Botelho, 2021; Mahdavi, 2020; Rodrigues & Pandeirada, 2018; Thompson, 2018). In this context, the perception

that will be analyzed in depth is the physics teacher's perception of the implementation of the Merdeka Belajar curriculum—remembering that the Merdeka Belajar Curriculum is the newest in the education unit in Indonesia which has been implemented in the last year. Thus, the perception of physics teachers as educators who have implemented the curriculum is an important source of data in this research. The following presents various perceptions of physics teachers which are classified into several categories.

Perceptions of Physics Teachers in the Implementation of Physics Learning Based on the Merdeka Belajar Curriculum

The following is presented regarding the responses of physics teachers to the implementation of the Merdeka Belajar curriculum. The responses given have indicators including teacher understanding regarding the Merdeka Belajar curriculum, curriculum reduction (content), and constructivist learning. The following are the results of the description of each of these indicators (Table 1).

Table 1. Physics Teachers' Understanding of the Merdeka Belajar Curriculum

No	Teacher Name	Class Physics Teacher	Teacher Understanding
1	ERS	X and XI	The Merdeka Belajar Curriculum makes it easier for me as a physics teacher, especially in the process of preparing the flow of learning objectives. The flow of learning objectives is created according to the needs of students here. However, with this freedom in the preparation process, I sometimes feel confused because there is no definite format example, considering that the Merdeka Belajar curriculum is new.
2	SDA	X and XI	I am more flexible in the process of preparing learning tools. Apart from that, students during physics learning are more active, creative, and independent. However, what I feel is lacking in the implementation of this curriculum is that there are too many P5 (Pancasila Profile Strengthening Project) schedules, but these schedules are not well optimized in the processing process by students.
3	RH	X and XI	The material presented is more focused so that students will not feel burdened by the physics material being taught. But sometimes some material should be taught in even semesters, which is advanced to be taught in semester 1. Events like this occur because in semester 1 there is a gap in material, such as class 10 material which is very limited, so to overcome this gap, even semester material such as global warming is taught in semester 1.
4	S	X and XI	The Merdeka Belajar gives me the freedom as a physics teacher to maximize the use of digital-based learning tools (learning media). But here, the types of digital media used are still limited (less familiar with using them, such as the PhET Virtual Laboratory).

Based on Table 1 regarding Physics Teachers' Understanding of the Merdeka Belajar Curriculum, the existence of the Merdeka Belajar curriculum can make it easier for teachers in the learning planning process. However, this curriculum also has shortcomings in that teachers still don't understand how to format examples that are appropriate to Merdeka Belajar Curriculum, which is still relatively new. Apart from that, the implementation of P5 is less than optimal and there is very little material in class 10. In this curriculum, teachers can freely choose digital-based media, but teachers' insight is still limited regarding appropriate digital media.

Based on Table 2 regarding content aspects of Merdeka Belajar curriculum. The Merdeka Belajar curriculum provides the freedom to formulate learning objectives concisely and meaningfully. Teachers are able to create learning tools that are tailored to students' needs so that they are more effective in facilitating learning activities. This curriculum is designed to be short, clear and focused on essential

material to help students develop competencies according to their phase. This also allows for more flexibility in deepening the material, leading to more complex levels of understanding. Schools have the authority to organize the curriculum based on students' backgrounds and needs, making it easier to achieve learning goals. Additionally, students have the opportunity to explore their interests and talents by choosing a major in their second year of high school.

Table 2. Physics Teachers' Responses to the Content Aspects of the Merdeka Belajar Curriculum

No	Teacher Name	Class Physics Teacher	Teacher Understanding
1	ERS	X and XI	In connection with the previous response related to the freedom to arrange the flow of learning objectives, in this aspect the Merdeka Belajar curriculum is a type of curriculum with a concise but meaningful presentation model. Concise in the sense that teachers do not need to make thick learning tools, but teachers only need to make learning tools by adapting them to the needs of students. In this way, the tools created will be more meaningful because they can be fully implemented in learning activities.
2	SDA	X and XI	The Merdeka Belajar Curriculum is a type of curriculum that is short, concise, and clear. This is because the aspects it contains already represent the needs of students.
3	RH	X and XI	The material presented is essential so that students' competencies will develop according to their phase. Apart from that, students' level of understanding will be more complex because in terms of the time given it is more flexible so that opportunities in the process of deepening the material are wider.
4	S	X and XI	Schools are given their authority to organize the curriculum so that it can facilitate the process of achieving learning goals because it is adapted to the school's background and its students. Apart from that, this curriculum provides equal knowledge in the first year of high school and then they are given freedom according to their interests and talents in determining their major in the second year of high school.

Based on Table 3 regarding the implementation of Merdeka Belajar curriculum. The Merdeka Belajar curriculum helps students understand physics material in depth and comprehensively, encouraging critical thinking and active learning. Practical activities on specific topics allow students to hone problem-solving skills and gain a deeper understanding of concepts. Through this process, students develop the experience necessary to understand the meaning behind complex problems in physics.

Table 3. Constructivist Physics Learning in the Implementation of the Merdeka Belajar Curriculum

No	Teacher Name	Class Physics Teacher	Teacher Understanding
1	ERS	X and XI	The physics learning process is not only limited to delivering material to students but also includes group activities. Group activities are carried out to train the spirit of collaboration between students, the learning process in finding a solution to a given problem, as well as in-depth experience in gaining this knowledge.
2	SDA	X and XI	The assessment model provided, namely formative and summative assessment, is one of the features of constructivism.
3	RH	X and XI	The Merdeka Belajar curriculum helps every student to understand the physics material taught in-depth and comprehensively. In this way, students will have a variety of questions that they get during the process of studying the material.

No	Teacher Name	Class Physics Teacher	Teacher Understanding
4	S	X and XI	The questions they get are then conveyed to the teacher as a form of constructivist learning, namely that students become active in critical thinking. Practical activities on certain physics topics will hone each student to find solutions to the problems presented by these activities. It is in the process of finding a solution to a problem that students will have experience so that they will understand the meaning given by the problem (deep understanding of the concept).

Obstacles to Implementing the Merdeka Belajar Curriculum in The Physics Learning Process

Teachers must have sufficient competence and ability to implement the independent curriculum well (Mujab, et. al., 2023). Based on observation activities, in-depth interviews as shown in Table 2 above, and documentation, it can be seen that the process of implementing the Merdeka Belajar curriculum in physics learning has not gone completely perfectly. This is caused by several factors, such as teachers who are not ready for the process of developing learning tools because the Merdeka Belajar curriculum is a new curriculum (an adaptation process is still needed to understand this type of curriculum) as well as inadequate school facilities. and infrastructure in the process of implementing the Merdeka Belajar Curriculum. The following is a detailed description of several obstacles in the process of implementing the Merdeka Belajar curriculum.

Teacher Unpreparedness in The Process of Preparing Physics Learning Tools

Most teachers feel they are not ready to implement Curriculum x because they do not understand the nature of the Curriculum. This unpreparedness is due to a lack of teacher understanding due to training (Dewi & Eni, 2022). Learning tools are very important in supporting the process of implementing the Merdeka Belajar curriculum. The learning tools used include teaching modules (learning implementation plans), appropriate teaching materials, and learning media. The main weakness of teachers in the process of implementing the Merdeka Belajar curriculum is the process of preparing teaching modules in the learning implementation plan section. Because the Merdeka Belajar curriculum is a type of curriculum that gives teachers freedom in the process of preparing teaching modules, this is the source of teacher misunderstanding (because there is no definite format example in the preparation process).

Apart from that, the process of setting the schedule for P5 activities (Strengthening Pancasila Student Profile Project) is too dominant in learning activities. In a week, P5 activities are carried out for three days, with details per day being carried out for three hours of learning (in a week P5 is carried out for nine hours of learning). In reality, this kind of thing is less than optimal, because the time that is too free is not utilized properly (because students do not need too much time in the process). Thus, it is better to compress the implementation time for P5 so that the remaining time can be used for other learning activities.

Inadequate Facilities and Infrastructure

Merdeka Belajar curriculum requires adequate facilities and infrastructure, such as spacious and comfortable classrooms, adequate learning equipment and media, and adequate internet access. If adequate facilities and infrastructure can support the implementation of Merdeka Belajar curriculum (Mujab, et. al., 2023). The facilities and infrastructure used in the process of implementing the Merdeka Belajar curriculum are limited. One of these limitations is reflected in the use of the type of learning media. The learning media used during the process of implementing the Merdeka Belajar curriculum is inadequate. This is because teachers in this context are only focused on learning physics by using whiteboards and power points. This kind of limitation will tend to trigger an atmosphere of boredom

in learning activities. Thus, new, more innovative types of learning media are needed so that students will not feel bored so that the process of achieving learning goals in the education unit is more easily realized.

Conclusion

Based on in-depth interviews, observations, and documentation studies at one of the public high schools in Surabaya regarding physics teachers' responses regarding the process of implementing the Merdeka Belajar curriculum, it shows that the majority of physics teachers gave positive responses. These positive responses, such as the physics teacher's understanding of the Merdeka curriculum, can be categorized as being at the upper middle level (a middle level which is always developing to obtain the latest knowledge about the curriculum), his response to the contents of the Merdeka curriculum which is classified as positive, and the constructivist learning process in the curriculum. This provides great benefits for students. Apart from that, the negative response given by the physics teacher was that the process of implementing this curriculum seemed sudden, so the teacher had to be extra adaptive in the process of preparing appropriate learning tool models, the learning media was relatively limited so it required innovation. in the type of digital-based learning support media, as well as the process of setting the P5 implementation schedule is less than optimal, so it requires further study in the process of preparing the schedule.

The solution that can be implemented to overcome this problem is that schools must pay more attention to teachers by holding more frequent training activities in preparing learning devices, providing access to training in using technology-based learning support media, and rearranging the implementation schedule for P5 activities to make the most of them. The implementation of the Merdeka curriculum in this school has led many teacher's create learning resources that correspond to this new curriculum. Additionally, P5 activities are longer than other subjects for 12 hours, so students can easily engage in these activities. This research has the novelty of discussing physics teachers' responses in depth regarding the implementation of the independent learning curriculum which has not been widely discussed by previous research. This is because the independent curriculum will only be implemented in 2022, so research that focuses on the implementation of the independent curriculum is relatively limited. However, this research has limitations, namely that the respondents used in the research are still limited, namely only within the scope of one agency. Thus, the information obtained is less extensive.

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