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## Biology Teachers' Perspective on Change of Curriculum Policy: A Case for Implementation of "Independent" Curriculum

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## Biology Teachers' Perspective on Change of Curriculum Policy: A Case for Implementation of "Independent" Curriculum

### Abstract

Curriculum change is one way of adapting education in the face of various scientific and technological developments. These changes lead to different views from numerous educational actors, one of which is teachers. This study aims to explore biology teachers' perspectives on curriculum change in Indonesia. A qualitative phenomenological study with semi-structured interviews explored the biology teachers' perspectives. The interview results were analyzed using the thematic analysis method with ATLAS.ti 22 software to determine themes. The results showed four themes from biology teachers' perspectives on curriculum change, which are (1) the factors affecting independent curriculum implementation; (2) the teachers' concerns; (3) the teachers' efforts; (4) the support systems needed by teachers. Biology teachers' perspectives show that teachers experience various problems and concerns but still strive to implement learning according to the curriculum. Synergistic support from schools, colleagues, government, educational colleges, and parents of students is needed for the successful implementation of an independent curriculum.

### Keywords

teacher's perspective, independent curriculum, phenomenology, thematic analysis

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## **Biology Teachers' Perspective on Change of Curriculum Policy: A Case for Implementation of "Independent" Curriculum**

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Curriculum change is one way of adapting education in the face of various scientific and technological developments. These changes lead to different views from numerous educational actors, one of which is teachers. This study aims to explore biology teachers' perspectives on curriculum change in Indonesia. A qualitative phenomenological study with semi-structured interviews explored the biology teachers' perspectives. The interview results were analyzed using the thematic analysis method with ATLAS.ti 22 software to determine themes. The results showed four themes from biology teachers' perspectives on curriculum change, which are (1) the factors affecting independent curriculum implementation; (2) the teachers' concerns; (3) the teachers' efforts; (4) the support systems needed by teachers. Biology teachers' perspectives show that teachers experience various problems and concerns but still strive to implement learning according to the curriculum. Synergistic support from schools, colleagues, government, educational colleges, and parents of students is needed for the successful implementation of an independent curriculum.

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### **Introduction**

Just as living things adapt to environmental changes, the curriculum as a product of human thought in education, must also adapt to the dynamics of life changes. Curriculum changes are commonplace in the education system along with the development of science, technology, socio-culture, and economic development (Alsubaie, 2016; Lin et al., 2017). Especially in the era of the 21<sup>st</sup> century, the curriculum must be able to direct students to achieve 21<sup>st</sup>-century skills. The young generation must be prepared to solve problems, think creatively and innovatively, and have High Order Thinking Skills (Barcelona, 2014). An adaptive curriculum helps students as the young generation to be ready for life after graduation.

The formation of a quality generation that is ready to face global challenges is certainly pursued by every country. It can be seen from the dynamics of curriculum changes carried out by both developed countries such as the United States and China, and developing countries such as Zimbabwe, South Africa, Cyprus, and Siberia. (Chimbunde & Kgari-Masondo, 2020, 2021; Govender, 2018; Jippes et al., 2013; Stanišić & Maksić, 2014; Wang et al., 2014; Xenofontos, 2019). Various countries carry out national curriculum changes to achieve the goals targeted by each country.

Indonesia is one of the countries that has made several curriculum changes over the past three years (2019-2021). This curriculum change was triggered by the COVID-19

Pandemic which caused learning loss. Learning loss is a situation where students miss out knowledge and skills due to certain conditions that decrease mastery of competence (Cerelia et al., 2021). Before the COVID-19 pandemic, primary and secondary education in Indonesia used the 2013 Curriculum (K13). At the beginning of the COVID-19 pandemic, an emergency curriculum was released for elementary and middle school levels (Ministry of Education and Culture of the Republic of Indonesia, 2020). Then in mid-2021, the Indonesian government released a curriculum prototype, and in 2022 the curriculum prototype was declared the Merdeka Curriculum (Department of Standards Curriculum and Educational Assessment, 2021).

In 2013-2020 Indonesia used K13 for learning in schools. The education system in K13 aims to develop students' cognitive, affective, and psychomotor skills. The government has set learning outcome standards for knowledge achievement in the form of core and basic competencies. However, in the pandemic era, it turns out that the minimum competencies that must be achieved are too heavy for all students to master with a distance learning system. Therefore, the Indonesian government developed an independent curriculum that was implemented limited to activator schools starting in mid-2021, facilitated and guided by the government.

This independent curriculum only provides concise competency outcomes, not as many as in the 2013 curriculum. Teachers can develop these outcomes. The knowledge outcomes of biology learning in the first year of senior high school focus on the diversity of living things, viruses and their roles, biological technology innovation, ecosystem components, and interactions between components and environmental change. This scope is more concise than the previous curriculum, which included the concept of biosafety, the scope of biology, viruses, bacteria, protists, fungi, ecosystems, types of diversity and efforts to preserve biodiversity in Indonesia, plantae, animalia, energy flow, and biogeochemical cycles, as well as waste and its processing (Ministry of Education and Culture, 2016). This is in accordance with the objectives of the independent curriculum, which is to recover from the educational crisis caused by the COVID-19 Pandemic by focusing on essential concepts for students to master to solve problems in life (Cantika, 2022).

Learning in the independent curriculum applies the principle of differentiated learning. Learning is carried out according to different student conditions. In biology learning, the skills developed are science process skills. Learning is done with an inquiry approach, so students have scientific process skills. Besides developing knowledge and skills, the independent curriculum also accommodates character development. Student character development is carried out by the activities of the Pancasila Learner Profile Strengthening Project, which aims to develop student character in accordance with the precepts of Pancasila as the basis of the state. These characters are (1) Faithful, devoted to God Almighty, and noble; (2) Global diversity; (3) Mutual cooperation; (4) Independent; (5) Critical reasoning, and (6) Creative. Meanwhile, skills are developed depending on each subject that students follow (Department of Standards Curriculum and Educational Assessment, 2022).

The curriculum change impacts learning implementation, including in Biology learning. In K13, Biology subjects at the high school level are separated from science subjects starting from the first year of high school. However, in the Merdeka Curriculum, Biology has been integrated into the science field since the first year of high school. The government regulates the implementation mechanism of science learning that schools can choose, science is taught in an integrated manner, or science is taught separately (Biology, Chemistry, and Physics are taught in separate subjects) but ends with an integrated project. Biology subject has its learning outcomes that are targeted to be achieved at each phase of education in senior high school. These learning outcomes are different from the learning outcomes in K13.

Curriculum changes will bring up the perspectives or viewpoints of each of the parties involved. Research on curriculum change has been conducted to find out the perspectives of teachers (Chimbunde & Kgari-Masondo, 2021; Govender, 2018; Velthuis et al., 2021; Wang et al., 2014; Xenofontos, 2019), students (Ngussa & Makewa, 2014; Yengo-Kahn et al., 2017), parents (Murchan & Johnston, 2021), academic staff (Barth & Rieckmann, 2012), and headmaster (Loh & Hu, 2021). It is important to explore the perspectives of the new curriculum implementation to see the important things that all parties feel and want to express.

Based on the literature search, it was found that several studies on biology teachers' perceptions of curriculum changes have been conducted in various countries, such as Australia (Kruger et al., 2013), Namibia (Hamunyela et al., 2022), Nigeria (Loh & Hu, 2021), and even Indonesia (Patekur et al., 2022). Patekur et al. investigated the perceptions of 40 biology teachers in the Lamongan district by filling out a Likert scale questionnaire that leads to perceptions and attitudes when preparation, implementation, and assessment in learning. The research was conducted in June-July 2021. The perceptions measured were perceptions of the change of K13 to an emergency curriculum because the new independent curriculum was implemented starting July 2021. Therefore, it is important to see the experiences and views of biology teachers in implementing the independent curriculum. This experience needs to be explored based on the perspectives of teachers who have experienced directly implementing biology learning based on the independent curriculum. This teacher perspective can be a source of information for the government in implementing the best strategies in continuing the implementation of the independent curriculum, for teachers to implement the good strategies found, and for other parties directly related to learning to support teachers.

## **Literature Review**

### **The Mechanism for Implementing Curriculum Changes**

Curriculum changes are implemented differently in each country. Some implement it top-down, which is regulated by the government and goes down to schools, as well as bottom-up, which is proposed by schools and determined by the government (van den Hende et al., 2022; Xenofontos, 2019). Curriculum implementation can be carried out freely (according to needs) and structured (following strict protocols; Velthuis et al., 2021). Free implementation of the new curriculum will allow teachers to innovate thereby increasing motivation, but there is also an assumption that the new curriculum is coercive like a king's order that must be obeyed, making it increasingly busy and overloaded, some teachers even feel that it is not compatible with the new curriculum (Velthuis et al., 2021; Wang et al., 2014). The new curriculum, which is perceived differently, causes different impacts in its implementation. The new curriculum causes changes in the assessment system, changes in learning directions, changes in learning approaches, and even variations in the output of graduates (Barcelona, 2014; Chimbunde & Kgari-Masondo, 2021; Kandiko Howson & Kingsbury, 2021; Sklar, 2018; Velthuis et al., 2021; Xenofontos, 2019).

The implementation of the new curriculum raises problems for its implementers. Students as the main executors of the new curriculum often feel that the existence of the new curriculum causes the need for new habits in learning, decreased interest in activities outside of the main studies because they have to adapt, cannot follow in the successful footsteps of seniors because seniors implement the old curriculum, sometimes even the curriculum does not match with student life for example, the social science curriculum in Zimbabwe contains a lot of European content and is not suitable for conditions in Africa (Chimbunde & Kgari-Masondo, 2021; Yengo-Kahn et al., 2017). Teachers as learning managers also experience challenges due to the lack of support from school principals, the cost of implementing expensive innovations,

government neglect, lack of information and planning related to curriculum implementation (Chimbunde & Kgari-Masondo, 2020, 2021; Ostovar-Namaghi, 2017; Sklar, 2018), so teachers' motivation in implementation is low, some even do not respond to changes in the curriculum (Velthuis et al., 2021).

Problems in curriculum implementation will be overcome with the support obtained by the teacher. This support comes from within and from outside the teacher. The teacher's enthusiasm for adapting to change, the orientation that curriculum changes are for the benefit of students, the assumption that the previous curriculum needs improvement, willingness to keep up with technological developments, the willingness to collaborate with other teachers, and cooperative training are supporters of successful curriculum implementation that come from within themselves (Meeran & Amin, 2021; Suyanto, 2016; Xenofontos, 2019). Government support can also ease curriculum implementation challenges, such as organizing teacher training or professional development workshops, providing material support for teachers, providing clear implementation guidelines, and regular monitoring from the government team (Govender, 2018; van den Hende et al., 2022). Another important support comes from academic institutions such as universities and support from students' parents or committees that contribute to the success of reducing the challenges of implementing the new curriculum (Kandiko Howson & Kingsbury, 2021; Xenofontos, 2019).

Based on these challenges and supporters, both the government and education units need to prepare appropriate curriculum development strategies, including dialogue and collaboration between elements of stakeholders, it is necessary to involve teachers and students in curriculum development, and preparation of technical guidelines for teachers, students, and schools, as well as regulate the governance of the implementation process (Chimbunde & Kgari-Masondo, 2020; Mambolo, 2021; Yengo-Kahn et al., 2017; van den van den Hende et al., 2022). Through this strategy, it is hoped that major problems in implementing the new curriculum will not be encountered.

### **Curriculum Change Experience Based on Previous Research Based on Previous Research**

The methods used by researchers to look at teachers' and students' perspectives on curriculum change are quite diverse. There are researchers who apply quantitative and qualitative methods. Either way, researchers aim to capture the perspectives of different parties to see how they respond to curriculum change.

Teachers' perspectives on curriculum change in China were investigated quantitatively with the Teaching Perspective Inventory and it was found that teaching experience, gender, and education level were associated with influencing teaching perspectives (Wang et al., 2014). Many researchers have studied teachers' perspectives in a qualitative way. Studies in South Africa have found that teachers experience challenges with this curriculum change (Govender, 2018; Mambolo, 2021; Meeran & Amin, 2021). Teachers lack sufficient development programs, support, and monitoring in implementing the changes.

In the curriculum development process, it is necessary to hear the voices of teachers (Chimbunde & Kgari-Masondo, 2021) and students (Ngussa & Makewa, 2014). This means that involving them in curriculum development is important. By involving teachers and students in curriculum development, it will support the formation of an appropriate and useful curriculum.

There must also be good governance in the implementation process (Velthuis et al., 2021). For example, implementing curriculum changes on a limited basis before widespread implementation (Ostovar-Namaghi, 2017) and investigating teachers' perspectives before conducting teacher training development programs (Xenofontos, 2019). In addition, it is necessary to communicate with students about the reasons for change, respond to the anxiety

students experience, and build student and administrator collaboration (Yengo-Kahn et al., 2017). This regulated implementation mechanism will minimize the negative impact.

Curriculum change is implemented in different ways by each party involved (Kandiko Howson & Kingsbury, 2021). Teachers and students implement changes actively and adaptively, meaning that changes are implemented in concrete actions and followed up with special evaluation plans. However, some teachers and students are quite involved, in the sense that strategic themes and various proposed innovations are embedded in learning, but do not make broad and deep changes. There are also passive implementers who focus on structural issues such as changes to modules and learning frameworks.

Previous research has investigated the importance of looking at the teacher's perspective in implementing the new curriculum. Teachers' perspectives can describe teachers' attitudes towards the curriculum, the challenges experienced, and what teachers expect in implementing the new curriculum. Curriculum changes generate different attitudes and views from each teacher in Indonesia, especially Biology teachers at the high school level. Therefore, this study aims to reveal the perspectives of high school biology teachers in dealing with curriculum changes. The teachers' experiences discussed are expected to provide information about the problems faced by teachers in implementing an independent curriculum. The information obtained can provide direction for future education policies, opportunities for innovation and curriculum implementation strategies, and generate ideas for further research.

## **Method**

### **Study Design**

The teacher's views of the curriculum are important to know as a consideration in formulating future curriculum implementation policies. Qualitative research can be used to study a person's perspective (Denzin & Lincoln, 2018), so qualitative research is used to explore teacher perceptions of curriculum changes. The perspective in this study is the experience presented from the teacher's point of view. The research focus led the researcher to use a phenomenological approach in this qualitative study. Phenomenology is a qualitative approach that aims to explore one's experience of a particular phenomenon (Creswell & Poth, 2017). In this study, teachers revealed experiences based on their perspectives as implementers of the independent curriculum. The experiences of the teachers were analyzed and summarized into general findings describing the phenomenon of implementing the independent curriculum.

### **Participants**

Teachers' experiences and their perceptions of curriculum changes are extracted to obtain informative theme constructions. Five teachers participated in this study (Table 1). They come from schools that have implemented the new curriculum in Indonesia, both experienced as pioneer schools and those that have just implemented the independent curriculum. All participants recruited came from Java, where Java is the most populous island in Indonesia (56.10%) based on the results of the national census (Statistic Indonesia, 2021). All participants were first-year high school biology teachers with more than 10 years of teaching experience.

Research participants were recruited by researchers through the first author's personal social media. Participants who can be involved in this research must meet certain criteria, including teaching biology class X with the new curriculum and working as a permanent teacher for at least 5 years. Participants who meet the criteria are willing to contact the researcher voluntarily then. The researcher then provided an interview consent form which was signed and sent back to the researcher if the participant agreed. Next, the researcher scheduled

an online semi-structured interview with a duration of approximately 40 minutes for each participant. Interviews were conducted online with a virtual meeting platform (Zoom meeting) with a recorded process. Each participant completed the interview at a different time from the other participants. All participants were given credit to purchase an internet package sufficient to conduct online interviews within the timeframe. Before the interview began, the researcher ensured that participants allowed the meeting to be recorded. The researcher also said that in case of publication, the names of the participants would be kept anonymous.

**Table 1**  
*Demographic Conditions of Participants*

<b>Teacher (anonymus)</b>	<b>Age (years)</b>	<b>Length of teaching experience (years)</b>	<b>School location</b>	<b>Educational qualifications</b>	<b>Year of implementation of the curriculum</b>
Wiwik	56	28	Special Region of Yogyakarta	Master of Biology Education	First year
Aras	54	27	Special Region of Yogyakarta	Master of Biology	First year
Nika	45	14	Special Region of Yogyakarta	Master of Education	Second year
Eny	39	12	Central Java	Bachelor of Biology Education	First year
Siti	55	25	Central Java	Bachelor of Biology Education	First year

## **Data Collection**

The first author acts as the interviewer. The first author is a lecturer in the department of biology education at one of the universities of education in Indonesia. Interview activities are scheduled for one teacher per day to maintain consistency in understanding each teacher's experience. After completing the interview, the researcher immediately made a transcript of the interview results. This activity aims to allow researchers to gain a basic understanding of the results of the interviews.

The interview process was carried out by referring to the interview protocol. The first author developed an interview protocol, and the other author reviewed the interview protocol. The second author is an expert professor of learning evaluation. The third author is a professor in biology education with a focus on learning strategies and curricula and has more than 20 years of teaching experience. The latest author is a professor in the field of qualitative research who has experience in conducting qualitative studies and writing manuals on qualitative analysis.

The questions in the interview protocol were developed based on the Theory of Planned Behavior (Ajzen, 1991). There are 3 factors that influence an individual's independent intention to perform behavior, namely attitude toward the behavior, subjective norm, and perceived behavioral control. Independent intention in this study is represented as the teacher's intention to implement the independent curriculum according to applicable regulations. The attitude toward the behavior factor is an individual's attitude that refers to their judgment about good or bad behavior. In this case, it is the teacher's experience and views on the independent curriculum, good or not, important or not. The subjective norm factor is considered as social pressure obtained for doing behavior, in this case the problems experienced by teachers due to implementing the new curriculum. The perceived behavioral control factor is an individual's



understanding of their strengths and weaknesses so that they can choose to do or not do a behavior. In this case the teacher tries to overcome the problems encountered, but according to the limits of his ability. There needs to be support from various parties to overcome teacher weaknesses.

The questions began by digging up information about the teacher's biodata, such as the area of origin, length of teaching, and experience of changing the curriculum. Furthermore, the researchers explored the teachers' opinions while implementing the new curriculum, continued with the challenges they faced, then the expectations they wanted to support the smooth implementation of the curriculum. The author realizes that in practice, the interview protocol develops according to the answers from the participants. Examples of questions in the interview protocol are presented in Table 2.

**Table 2**

*Sample Questions on the Interview Protocol*

No.	Theoretical Domain	Question Example
1	Teacher Experience	The new curriculum, namely the independent curriculum, aims to overcome student learning loss. What is your experience regarding the change in the curriculum from the 2013 Curriculum to the Independent Curriculum?
2	Teacher Challenge	Do you feel or think about the challenges of changing the curriculum from the 2013 Curriculum to an independent curriculum, especially in Biology?
3	Teacher Hope	The new curriculum has been implemented, what are your hopes in supporting the implementation of the Independent Curriculum?

## Data Analysis

The recorded interview results were transcribed manually to get accurate results (not using a transcription machine). The researcher chose manual transcription because the participants used 2 languages: national and regional. If we rely on a transcription machine, there is a high chance that transcription errors will occur. Research data in the form of interview transcripts were analyzed using thematic analysis with the help of ATLAS.ti 22 software. This thematic analysis aims to find thematic patterns in interview transcripts (Braun & Clarke, 2006). The thematic analysis steps are familiarizing the data, doing initial coding, developing themes, and reviewing and defining themes (Setiawan, 2022). To apply research ethics, the names of the participants (Nika, Erna, Wiwik, Siti, and Aras) are anonymous to protect the participants' privacy.

## Results

The data from the interviews that have been collected and coded are then analyzed to construct the theme. Based on the results of the theme construction, four themes were obtained. These themes are (1) factors affecting curriculum implementation, (2) teachers' concerns, (3) teachers' efforts, and (4) support systems needed by teachers.

### Factors that influence the implementation of an independent curriculum

The curriculum is a guide and a tool for teachers to develop their pedagogical practices. Teachers act as learning organizers. Mechanisms, strategies, media that the teacher will use are determined by the teacher himself. In carrying out its role, the way teachers implement the

curriculum in learning is influenced by certain factors. The interview results show that curriculum implementation is influenced by teachers' length of service, participation in professional organizations, and teachers' responses to curriculum changes.

First, the length of time working as a teacher causes a teacher to have experience in changing the curriculum. All the participating teachers had more than 10 years of service, and there were even teachers with 28 years of teaching experience. Therefore, they have experienced curriculum changes several times. Consequently, teachers are used to dealing with curriculum changes. More than half of the participants said this change was tiring, but they were still enthusiastic about following the changes. As stated by Erna, "Just enjoy it, maybe the obstacle is tired, sick, tired but don't be surprised, it's like that, so you can adapt, if it's like that here." Supported by Wiwik's statement:

As I feel, wow, it turns out that the dynamics of development in the world of education are extraordinary. So yesterday I did my best, by collecting a lot of material, with conditions that are getting older this is a tough challenge, I have to study again.

Both quotes mean that in change there is a need for adaptation. Even Wiwik, who has been teaching for 28 years, still has the enthusiasm to learn to adjust to the current situation. Therefore, adaptation and motivation within the teacher are important to be able to keep up with the changes in the curriculum that must be passed.

Second, participation and involvement in professional organizations also influence the implementation of the new curriculum. Professional organizations are associations or communities of educators in the biology field. In Indonesia, there are several professional organizations for teachers such as the Indonesian Teachers Association, and specifically related to biology there is the Indonesian Biology Educators and Researchers Association and the Biology Subject Teachers Deliberations which is managed at the regional level under the regional education office. Professional organizations such as teacher groups can be a forum for communication for teachers in the process of implementing the new curriculum. When joining a professional organization, teachers can discuss with colleagues and obtain useful information in implementing the curriculum. For example, discussions in the Subject Teacher Deliberations forums at the district and provincial levels. As stated by Siti:

The Subject Teacher Deliberations forum also explained the relation to the independent curriculum, so it was agreed, it had shown its relation to basic competencies, like that, what will the material be, yesterday it was agreed that biodiversity in grade 10 will also be inserted monera, protista, bacteria, then there will also be animalia and plantae, those are also inserted there, then there are viruses, which are for the last 10 class of ecosystems.

This community can be used as a forum for communicating technically in implementation, sharing practical experiences in both curriculum implementation, and finding solutions to problems encountered.

Third, the teacher's response directs the teacher's actions in implementing the new curriculum. These personal responses are grouped into two, namely positive and negative responses. An attitude of support for the implementation of the new curriculum manifests a positive response to curriculum changes. Four out of five interview participants supported the existence of an independent curriculum for post-pandemic education recovery. Wiwik stated that, "Whatever the curriculum is, we support it. The important thing is that there is always analysis, evaluation, and maybe in the future if there are things that are still lacking or need to

be revised." Teachers support change if there is a clear mechanism for analyzing and evaluating the curriculum.

Support for this curriculum change causes teachers to perceive the advantages of the curriculum. The advantages of the independent curriculum perceived by teachers include student-centered learning that gives students freedom of expression, increases student creativity and builds good character in students. Siti stated, "Children make works that minimize carbon emissions, including planting plants, making tools such as solar panels, and processing plastic waste. Children have their creativity. Each group can be different, some make plant barcodes, plant names."

The independent curriculum is essentially giving schools the independence to carry out learning according to the conditions of each school. Another advantage of the independent curriculum is the flexibility of the teacher in teaching. Siti reiterated that:

As for teachers, we are indeed given freedom and independence in terms of teaching because the main material for the concept is determined by the ministry but in practice, it determines what content I teach from the teacher himself. So, it is more flexible to determine the method, approach, and also content of the material being taught is not determined by the center, so the center only provides learning outcomes.

The statement emphasized that learning in the independent curriculum was adapted to class conditions. How deep and fast the teacher will learn according to students' achievements in class.

The distinctive feature of the independent curriculum that distinguishes it from the previous curriculum is the existence of a project to strengthen the profile of Pancasila students. The Pancasila learner profile is the character that will be achieved in education in Indonesia through the implementation of the Merdeka Curriculum. Project activities facilitate the development of the Pancasila learner profile. This project, which is carried out outside class hours, aims to develop student character. In addition to developing character, this project can build emotional closeness between teachers and students. As stated by Erna, "The term is that there is a sense of kinship like that, usually for example the children leave the activities outside, stop by the mother first, so maybe there is a closer feeling between the teacher and the child." Erna's opinion further emphasizes that the new curriculum does not only develop students' knowledge and skills in solving life's problems, but also forms student personalities who can establish communication, be polite, and be able to place themselves, such as the character in the Pancasila learner profile.

Based on these data, the independent curriculum accommodates learning with students as the center of learning. Not only developing skills and knowledge, but also the character of students. As stated by Nika, "Student-centeredness is the main priority. Both in terms of process and output, the results are in line with placing students as learning subjects."

### **Teacher Concerns**

This new curriculum raises concerns for teachers. This concern arises because teachers realize their role in the classroom, namely as facilitators of students in learning. The less material content compared to the previous curriculum raises concerns for most teachers.

Teachers feel guilty if they cannot fulfill their role to facilitate students to learn optimally. As facilitators, teachers try to teach enough material. As expressed by Aras:

To be honest, the reduction of material is too much. In terms of me personally, yes, I am happy, teaching a little, free, but I can't just do whatever I want, because my students are difficult. I feel burdened, yes depressed because students don't get anything.

Teachers were concerned that students would not gain enough knowledge to be able to compete in college and adjust to college learning.

The teachers' concern led to the initiative to teach more material than was targeted by the government. Nika stated, "So with all our might we prepare a model even if it is only a little for our children so that they can pass science and technology." This is reinforced by Wiwik's statement that:

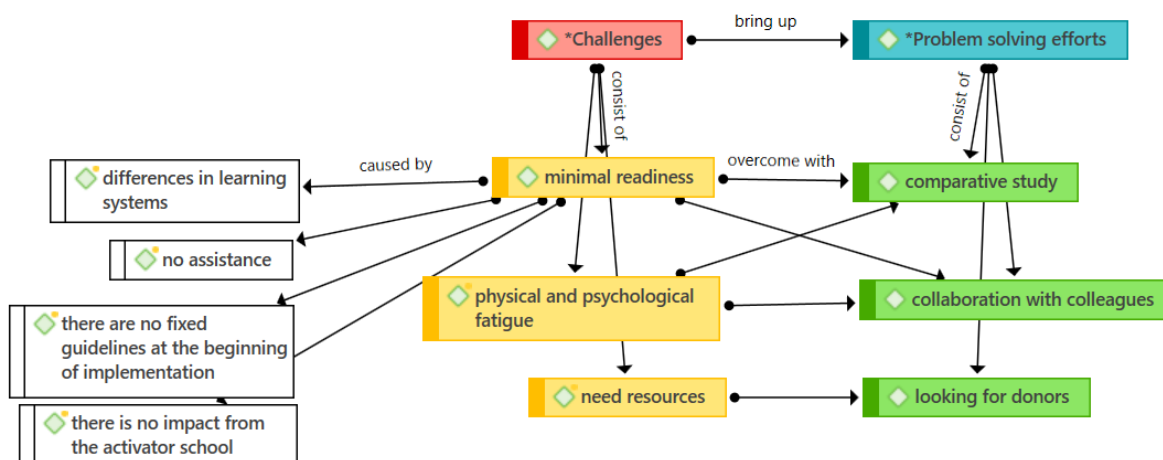
I really don't have the heart to suddenly teach the virus. The delivery remains, at the beginning conveying about the scope of biology. It is important for me to give the children the basis that biology is like this, the basic concept, the foundation.

The teachers felt that the independent curriculum only contained a limited scope of material. They try to provide students with a lot of additional learning materials to prepare them for higher education. Teachers still feel that if students graduate, they should understand a lot of material to prepare them for college entrance selection. These results show that teachers are still unable to apply the learning principles in the independent curriculum, which is learning that suits students' needs with not too many topics but contextual and useful for solving daily life problems.

### Teacher Effort

The implementation of new things cannot be separated from challenges, as is the case with implementing a new curriculum. The implementation of the new curriculum poses challenges for teachers. However, teachers still try to overcome each of these challenges in order to carry out biology learning in accordance with the independent curriculum (Figure 1).

**Figure 1**  
*Teacher Effort to Face Challenges*



The first challenge is teacher readiness. Teachers do not understand technically the differences in the learning system in the independent curriculum with the previous curriculum. As stated by Nika below:

Here teachers are required to be challenged to be able to compile learning scenarios that can accommodate different interests, talents, especially initial abilities. Especially now that the zoning system is a challenge in itself. Teachers must understand the diversity of students they face. The second is about assessment, the process is an important thing. Assessment of changes, cognitive and non-cognitive diagnostic assessments, which is not easy for educators to do alone.

Learning in the independent curriculum is based on differentiated learning, which is learning based on student differences. These differences are in the form of differences in learning readiness, interests, and even learning styles. The learning process and assessment must also be adapted to the different conditions of students in one class. This is a new challenge for teachers and is not easy to do.

The challenge of low teacher readiness was caused by the lack of assistance from the government or other parties. Another reason is that non-activator schools feel that activator schools have not shared their experiences in implementing the new curriculum with them. Teachers should seek information and conduct comparative studies by visiting or inviting activator teachers to explain and provide real examples of implementing learning based on the independent curriculum.

The second challenge is the physical and psychological burnout experienced by teachers. This second challenge is the impact of the first challenge, namely the lack of teacher readiness. Teachers need more effort than before in carrying out learning. This change makes teachers tired because they must study the mechanism of curriculum implementation, design lessons, and even carry out assessments of these various activities. Moreover, as explained earlier, the Pancasila learner profile strengthening project as one of the unique features of the independent curriculum focuses on project activities to build learner character. Nika stated:

We always run into problems, obstacles, because wow this is a guinea pig, right? So, who do we want to ask, the guidelines don't yet exist, the project has to go on, wow, there are so many things that we feel are raging and bleeding.

Even teachers who implemented the curriculum at the outset felt that they were victims chosen by the government to experiment with policies.

The third challenge is limited funding sources. The project as a means of character development is carried out in various forms of activity and involves many parties. This project certainly requires funds for its implementation. Meanwhile, schools are not allowed to collect donations from parents. This is burdensome for the teacher in realizing the project. Siti explained that:

What is rather difficult is the funding. Because until now schools are not allowed to withdraw funds from student guardians. That's why yesterday during the project, a little of the boss's funds were taken for the subsidized funds earlier. For the rest, we ask for the sincerity of the parents to pay contributions for each group, so they contribute to buy paper or something. Even though the Central Java government hasn't allowed us to collect dues, it's not like before there was committee money, it's paid every month, but now there's none. But in

this case, yes, we ask for sincerity from the parents of students, which is not that much.

Despite the difficulty in funding, teachers continue to carry out projects by collecting contributions from students. Even though this is prohibited. To achieve smooth learning based on an independent curriculum, teachers are willing to ignore existing regulations.

Various challenges do not make teachers give up trying to implement the new curriculum. Efforts have been made by the teacher in learning with colleagues. Study with colleagues, in this case with fellow teachers and schools that have already implemented the new curriculum. Activities carried out can be in the form of comparative studies in driving schools. As stated by Siti, "Previously we conducted a comparative study to driving schools, we were together with representatives of schools from the district. The teachers who are determined to teach class X we do a comparative study at Batik High School." This comparative study to activator school can be initiated independently by schools or coordinated by the education office. It takes a willingness from the teacher personally to learn. Apart from doing mock studies, studying with colleagues can also be done in groups. Teachers can independently form discussion groups or utilize existing teachers' organization.

### **Support System Needed by Teachers**

In performing their role as facilitators, teachers have expectations in the implementation of an independent curriculum. All teachers hope for support from various parties in the curriculum implementation process, especially at this early period. These parties are schools, peer teachers, universities, government, and parents. As Wiwik stated, "I think there are many from various agencies, not only from the education office, but there is also cooperation or attention from the university to assist us so that we can face this change."

The school is the one that guides teachers in taking steps. Almost all teachers agree that the school directs them. As stated by Nika, "Every night the Vice Principal of the curriculum section invites Zoom, the school management section, at the beginning to drain..." The school's efforts to direct teachers are also seen in the school's efforts to invite teachers to comparative studies and delegate teachers to attend appropriate trainings, as quoted from the interview with Siti, "Our school also held training by presenting resource persons from LPMP Semarang, besides that, supervisors from the Banyumas district also provided material and training."

The next party is peers. A total of three out of five teachers also suggested that peers contributed to the successful adaptation to the new curriculum. Cooperation and collaboration among biology teachers are important to overcome the problems faced together.

The interviews also explained that teachers need help from the University of Education to light their way during the process of implementing the new curriculum. In Indonesia, there are several universities that produce prospective teacher graduates. In these universities, there is a biology education department that will produce graduates of biology teacher candidates. Teachers expect action from biology education lecturers at university of education to teach assessment or provide relevant media for teachers to use. As Aras put it:

We please be given, assisted with a lot of media, if there are many books, but media that makes students understand, I was challenged to make media but was confused, because I lacked understanding, so I was afraid of giving the wrong information. We need the lecturers to help, direct them, but that was the schedule, if you can, it's sweet. I'm the secretary of the Subject Teacher Deliberations, if possible, I'm looking for free cooperation. We don't have any funds; we also have contributions. If we fund lecturers who come, whose

doctorate degrees are at least 500,000 rupiahs, if you do it many times, it's a bit difficult.

A similar statement was also made by Wiwik: "Send a message to the university to embrace those of us in high school." Biology education lecturers should pay attention to the difficulties experienced by teachers. Lecturers need to voluntarily provide examples and even train to make learning tools so that it is easier for teachers to adapt.

The government is expected to aid and resource support for schools implementing the independent curriculum. All teachers stated that the implementation of activities in the new curriculum requires financial support from the government. Erna said, "The hope is that the facilities for the government will be more sufficient, from the source of funds, projects and others, so that if there are funds like that, the project work will run well." Infrastructure facilities are also needed by the school. With sufficient funds and facilities, teachers perceive that learning can be carried out successfully.

In addition to mentoring, appreciation and motivation are also needed for teachers. As Siti said, "The last project yesterday, the children held an exhibition of their work. The children's work was exhibited in the stand of each group. During the exhibition, the head of the education office attended." This appreciation from the government makes teachers feel happy and appreciated for their performance.

Parents need to be involved in supporting the implementation of the independent curriculum. Parents' support is not only in terms of approval of all activities carried out by children, but also in providing motivation to their children. As revealed by Siti that, "Parents continue to support, especially motivation and funding issues. Incidentally, yesterday the parents were very enthusiastic, even the parents also asked for a report during the activity."

Based on the research results, it is known that the implementation of the independent curriculum involves various parties both within the school and outside the school. Each stakeholder has their own role (Table 3). The synergy of all parties in providing support for the implementation of the independent curriculum provides motivation and encouragement for teachers to implement the independent curriculum as it should be.

**Table 3**  
*The Role of Each Party to Support Teachers*

<b>Stakeholder</b>	<b>Role</b>
School	<ul style="list-style-type: none"> <li>- Monitoring and directing teachers in taking action to implement the curriculum</li> <li>- Facilitating teachers to learn from various sources of information</li> </ul>
Peer teacher	Establish a community to communicate and collaborate to solve the problems faced
University (especially Biology Education Lecturers)	Provide free media samples, assessments, and training on learning tools that are in line with the independent curriculum.
Government	<ul style="list-style-type: none"> <li>- Provide assistance during the implementation of the new curriculum</li> <li>- Providing resources (funds and infrastructure) especially for the activities of the Pancasila Learner Profile Strengthening Project which characterizes the independent curriculum</li> <li>- Providing appreciation and motivation for teacher performance</li> </ul>
Parents	<ul style="list-style-type: none"> <li>- Approval for each child's activities at school</li> <li>- Motivation for the child to be actively involved in learning</li> </ul>

## Discussion

Curriculum changes are perceived differently by various educational institutions. These diverse perceptions emerge from teachers as the key to implementing curriculum changes. Exploring information on teachers' responses to curriculum change is important to investigate in order to provide a basis for continuing the implementation of the new curriculum.

This study describes how teachers express their perspectives on curriculum change in Indonesia. The first theme in the data constructs the factors that influence teachers in implementing the new curriculum. The working period influences teachers in adapting to curriculum changes. The long working period provides the teacher with experience in dealing with several curriculum changes. This is in line with the results of Wray's research that the longer the experience of teaching teachers, the greater their ability to carry out their profession (Wray et al., 2022). Teacher participation in professional organizations supports the implementation of curriculum changes. Professional organizations are a forum for communication with colleagues so that they can discuss and share experiences in solving problems (Demir & Akif, 2015). Wang et al. (2014) and Velthuis et al. (2021) state that curriculum change is considered an innovation but on the other hand it is an imposition (Velthuis et al., 2021; Wang et al., 2014). The teacher's response also influences them in implementing the curriculum. Teachers who support the new curriculum tend to implement it willingly and can see the advantages of the curriculum.

The implementation of the new curriculum raises concerns for teachers. The goal of the independent curriculum is to overcome learning loss due to the COVID-19 pandemic so that the material targeted for students to achieve is more concise than the material content in the previous curriculum. However, teachers have not accepted the concept and continue to teach the material content as in the previous curriculum. Teachers have concerns that their students will not qualify for college or will not be able to follow the education at that level if they only learn a little material content. Teachers do this because of their responsibility as educators.

Teachers feel they have a responsibility of delivering their students to be able to follow the next level of education. With their content knowledge and pedagogical skills, teachers try to adjust existing curriculum policies while still paying attention to the needs of the students they predict. This shows the teacher's professional efforts in carrying out effective learning. As stated by Stronge, professional teachers know content knowledge, pedagogical knowledge, and pedagogical content knowledge (Stronge, 2018).

During the implementation of the independent curriculum, teachers felt unprepared in implementing this new curriculum, felt physically and psychologically tired, and felt the lack of supporting resources. The challenges found in this study are in line with the challenges perceived by teachers in previous studies. Less support from the principal, government neglect, less information related to the implementation of the curriculum (Chimbunde & Kgari-Masondo, 2020, 2021; Ostovar-Namaghi, 2017; Sklar, 2018), causing low teacher motivation (Velthuis et al., 2021). Despite the challenges teachers face, they still try to overcome them. Learning from peers, finding ways to meet limited resources, and persisting in implementing the independent curriculum despite physical and psychological burnout indicate high teacher self-efficacy. Teacher self-efficacy is a teacher's belief in their ability to face tasks and challenges in their professional activities that affect the work environment (Barni et al., 2019). With high self-efficacy, teachers will try to form the best learning environment for students.

An interesting phenomenon from the research results is that teachers ignore the regulation not to collect money from parents. Ministry of Education and Culture Regulation No. 75/2016 on School Committees Article 12 states that School Committees, either individually or collectively, are prohibited from making levies from students or their parents/guardians (Ministry of Education and Culture, 2016). Although parents are supportive,



teachers need to be careful in acting and choosing solutions to the problems faced. This is also a suggestion for the government to provide sufficient resources for policy implementation in schools.

The difficulties experienced by teachers to implement the new curriculum in biology learning can be overcome with support from various parties. Teachers perceive that the parties that can help them are schools, peers, educational universities, governments and parents. This is in line with the results of previous studies that teacher performance in implementing the curriculum cannot be separated from the support of the government (Govender, 2018; van den Hende et al., 2022), academic institutions such as universities, and parents or committees (Kandiko Howson & Kingsbury, 2021; Xenofontos, 2019). The synergy of various parties in implementing this new curriculum will make it easier for teachers to continue the implementation in the coming years.

The researcher hoped this study would benefit teachers, schools, governments, universities, and parents in implementing the independent curriculum. Teachers who implement the independent curriculum can take positive strategies based on the experiences of participating teachers. In addition, the government can base future policies related to the independent curriculum by considering biology teachers' views. For example, the government developed a mentoring program for teachers as an effort to make it easier for teachers to get through the transition period after the new curriculum was launched. Lecturers at the University of Education can formulate concrete steps to help teachers overcome teacher difficulties. And parents can support schools and their children to be actively involved in learning.

The author realizes that there are limitations in the research conducted. The small number of biology teachers who are willing to share their perspectives in implementing learning according to the independent curriculum causes a limited number of participants. However, from the number of participants, the researcher feels that enough information can be explored. The results of this exploratory research open opportunities for further studies related to assessment and evaluation of learning carried out by teachers in the process of adapting to the new curriculum.

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