

## Implementation of the “Merdeka Belajar” Curriculum in the Industrial 4.0 Era

Azizatul Nur Rohmah, Irasikah Julia Sari, Nur Lailatur Rohmah, Riska Syafira,  
Fitriana \*, and Setyo Admoko

Department of Physics, Universitas Negeri Surabaya, Indonesia

\* Email: [fitrianafitriana@unesa.ac.id](mailto:fitrianafitriana@unesa.ac.id)

### Abstract

Revolution 4.0 is marked by the era of digitalization, namely by the rapid development of science and technology. Technology in the industrial era 4.0 caused the human role to be shifted. This causes changes in how to work and relate to one another. In the digital era, the education system is expected to realize that students have skills capable of critical thinking and problem solving, creative and innovative skills, communication and collaboration skills, and skilled use of information and technology. Therefore, the purpose of this article is to determine the effectiveness of the independent learning curriculum in implementing the learning process and the constraints and solutions that can be provided in implementing the independent learning curriculum in the learning process. The research method used is the method of literature study and qualitative research. The results obtained from the research that has been carried out are the application of the “Merdeka” curriculum, the effectiveness of the “Merdeka” curriculum, the advantages of implementing an “Merdeka” curriculum, and the constraints of implementing an “Merdeka” curriculum. Implementing the independent learning curriculum is more straightforward than the 2013 one. The effectiveness of the 2013 curriculum is quite good and beneficial in terms of students who are free to choose according to their interests and talents and teachers who only need to explain some of the material's content. Of course, in implementing this “Merdeka” curriculum, there are obstacles, such as various media.

**Keywords:** “Merdeka” curriculum, teacher, student

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## INTRODUCTION

Changes in the world have entered the era of the industrial revolution 4.0, or the fourth world industrial revolution, where information technology has become the basis of human life. Revolution 4.0 is marked by the era of digitalization, namely by the rapid development of science and technology. Technology in the industrial era 4.0 caused the human role to be shifted. This causes changes in how to work and relate to one another. In the digital era, the education system is expected to realize that students have skills capable of critical thinking and problem-solving, creativity and innovation, communication and collaboration skills, and professional use of information and technology. (Rantelimbong et al, 2021)

The field of education is very closely related to the industrial revolution 4.0, which can be used to support thinking patterns and develop creative and innovative innovations from students to produce the next generation who are superior and able to compete in the industrial revolution 4.0. The industrial revolution 4.0, in the educational aspect, is a response to the needs of this revolution where technology and humans are adapted to create new opportunities innovatively and creatively. This condition creates opportunities and challenges for educational institutions. The role of educators requires playing a role in supporting these transitional times. (Sasikirana and Yusuf, 2020)

Therefore, strategies, methods, and learning designs are strived to keep up with the times. So that the world of education is required to be able to evolve in facing the industrial era 4.0 by making changes to the learning system used. Rearranging the learning system to support change and progress of the nation that can adapt to change is by returning the essence of education to humanize humans or education that liberates. So, we need a curriculum that can be implemented flexibly in the 4.0 revolution era. In meeting the needs of the education system in the industrial 4.0 era, the Ministry of Education and Culture inaugurated an independent learning curriculum that could answer education challenges during the industrial revolution 4.0 era.

The independent learning curriculum was developed with the hope of creating a millennial generation that can understand the material or knowledge taught by educators quickly, not only being good at remembering teaching materials that educators have given but students are also expected to be able to utilize technology in their learning process, considering technology has a significant role in education, namely with the emergence of electronic media as a source of learning (Amalia, 2022)

The concept of independent learning is very different from the curriculum used by formal education in Indonesia. The purpose of the independent learning curriculum is to achieve graduate learning outcomes with additional competencies, both soft skills and hard skills, following the needs of the times, preparing graduates as future leaders of the nation who are superior and have personality, as well as internalizing professional attitudes and work culture that is appropriate and necessary for industry world. (Widodo, 2021)

The concept of independent learning in education in the digital era is an educational process that requires a commitment to increasing investment in the development of digital skills in the world of education, always trying to apply the latest technology prototypes to facilitate the learning process in the world of education, as well as exploring various new forms of collaboration for educational models in the realm of improving digital skills so that the quality of education can be improved. Suppose the concept of independent learning and its implementation in the digital era can be adequately realized. In that case, innovative education, smart learning, competent assessment, smart classroom, and creative content will be created and will create a smart city. The development of student's character can support them to become superior who know, are adaptive to technology, are intelligent, responsible, and have noble behavior in using information and communication technology in the digital era. (Rantelimbong et al, 2021)

In the implementation of the independent learning curriculum, there are several obstacles, namely starting from the preparation of the independent learning curriculum, which is still immature, inadequate school infrastructure and thinking about the type of media to be used during the learning process and teachers who do not fully know about the "Merdeka" curriculum. This topic was raised to know the effectiveness of the independent learning curriculum in implementing the learning process and the constraints and solutions that can be provided in implementing the independent learning curriculum in the learning process.

## **METHOD**

The method used in this research is the method of literature study and qualitative research. Literature study is also commonly referred to as literature study in qualitative research, by collecting information from several sources, namely journals, books, and the internet, to obtain deeper information and provide analysis related to the concept of independent learning in the industrial era 4.0. This qualitative research aims to study or examine an object in a natural setting without any manipulation. According to Sugiyono (2007: 1), the qualitative research method is based on postpositivism. Thus, it is used to examine natural objects where the researcher is a crucial instrument, data collection techniques are carried out by triangulation (combined), data analysis is inductive/qualitative, and the results of qualitative research emphasize meaning rather than generalization.

Data collection techniques are essential in research because the primary purpose of research is to get data. Through questionnaires and interviews, researchers get some information related to the problem under study. Thus the data collection techniques used in this study were in the form of online questionnaires and interviews using the WhatsApp application.

## **RESULTS AND DISCUSSION**

### **Results**

The research results were the answers from the interviews and questionnaires the respondents had filled out. The results are as follows:

#### **1. Application of the Independent Learning Curriculum**

There are various kinds of answers in the questionnaire answers that respondents have filled in. Answers from respondents regarding the implementation of the independent learning curriculum include:

**Table 1.** Respondents' answers related to the Implementation of the Independent Learning Curriculum

Information	Percentage
It was only done in class X.	30%
Another answer	70%

Based on table 1 shows that the application of the independent learning curriculum at the high school level is still widely applied to students in class X. In contrast, classes XI and XII still use the 2013 curriculum, with a percentage of answers from respondents of 30%. In comparison, 70% of the other respondents gave other answers, namely more on how the independent learning curriculum was implemented. Other answers include that it has been appropriately implemented because the school is already a driving school, the most visible implementation is the implementation of P5 activities outside of in-class learning by doing projects that are more oriented towards the field of entrepreneurship, in the implementation of the learning process in the classroom is not much different with the 2013 curriculum. However, the material studied is more straightforward, less than in the 2013 curriculum, because there is more emphasis on Pancasila projects. Those who argue that the implementation could have been more optimal because it is still transitioning from the 2013 curriculum to the “Merdeka” curriculum.

## 2. The Effectiveness of Implementing the “Merdeka” curriculum

**Table 2.** Respondents' answers regarding the effectiveness of the Independent Learning Curriculum

Information	Percentage
Answer “Yes”	68%
Answer “No.”	32%

Table 2 shows that the effectiveness of the independent learning curriculum at the high school level is quite adequate, with a percentage of answers from respondents of 68%. In comparison, 32% of other respondents answered that the independent learning curriculum was ineffective. Respondents also gave several reasons for the “Merdeka” curriculum being implemented effectively. The reasons include, namely, in driving schools, the average teacher is quite familiar with the implementation of the “Merdeka” curriculum, and the “Merdeka” curriculum is quite effective because students can explore new things during project implementation. However, some give answers that are not effective because there are still many educators who need help understanding the implementation of the “Merdeka” curriculum, and school facilities still need to be improved. The material loading in class X needs to be balanced with class XI and XII. It will be easy to understand for children with good comprehension, but if the student does not have good comprehension, they will experience difficulties and be confused about choosing. Then because some schools are still making adjustments, they need readiness in their implementation.

## 3. Advantages of Implementing the “Merdeka” curriculum

There are various kinds of answers in the questionnaire answers that respondents have filled in. Answers from respondents regarding the advantages of implementing the independent learning curriculum include:

### a) For Student

Students are required to be more active and responsive. Students can develop creativity and hone their soft skills by doing projects like finished goods or mini-events. They have more freedom in learning activities so that students with specific talents and interests can be accommodated.

### b) For Teacher

The teacher can explain only some of the material. They only need to explain the material that students do not understand because, in the “Merdeka” curriculum, students must be independent in finding the material being studied. Teachers can choose how to teach and what material will be presented. Educators are required to innovate and design learning tools according to the “Merdeka” curriculum well.

#### 4. Obstacles to Implementing the “Merdeka” curriculum

There are various kinds of answers in the questionnaire answers that respondents have filled in. Answers from respondents regarding the obstacles to implementing the independent learning curriculum include thinking about the various types of media, the curriculum that has just been studied, the material topics and learning levels are also different, funds, facilities, technology, school climate, lack of education about curricula, so the student has to learn a lot, teacher do not fully know how to implement the “Merdeka” curriculum.

The solutions are as follows: add lots of reading sources or shows related to lessons, increase references and actively ask tutors or teachers who are experts in implementing the “Merdeka” curriculum. Schools provide adequate facilities, facilities, and infrastructure. Educators participating in seminars related to the “Merdeka” curriculum can use the previous curriculum while preparing curriculum changes if they feel they need more time to implement it.

#### Discussion

Education has a significant role in the progress and development of various aspects of life. Because education is an effort to develop and increase the potential of each individual, education can also influence one's actions, attitudes, and ways of thinking. Therefore, education is essential for every human being to have in order to become a skilled and superior person following the demands of the times. (Arviansyah, 2022)

Indonesia has experienced several curriculum changes. These changes are a logical condition resulting from changes in the political, economic, socio-cultural, and science and technological systems in the life of the people of the nation and state. Because the curriculum is a set of educational plans, it needs to be developed dynamically according to the circumstances, needs, demands, and changes in today's society. In addition, curriculum changes have a role so that the education system is not trapped in stagnation, so it is necessary to continue the spirit of change for the better. (Wiriyanto, 2014)

Freedom to learn is a policy launched by Nadiem Makarim as the Indonesian Minister of Education, which aims to make Indonesia a more competent, wiser, wiser and fairer nation that can create a better life for all Indonesian people. The policy of independent learning is also interpreted as freedom of thought. It has the goal that teachers and students can be independent in thinking, meaning that they can innovate and be creative in learning. (Sutabarat, H., Harahap, M., & Elindra, R. 2022)

The z generation is a generation where technological capabilities have developed. The z generation is called the digital generation, which can apply information technology and other technological tools. Generation z is active in seeking challenges to get new things. They are more open to change because of the ease with which information can be obtained from the internet. In today's developments, especially in the industrial revolution 4.0, the Z generation has the role of creator, connector, and constructivist in the production process and applies knowledge to innovate. (Lukum, 2019)

In the era of the industrial revolution 4.0, the educational aspect develops three significant competencies in the 21st century: the competence to think, act and live in the world. Thinking competencies include critical thinking, problem-solving, and creative thinking. Acting competencies include digital literacy, technology literacy, collaboration, and communication. Meanwhile, the competencies for living in the world include initiative, self-adjustment, global understanding, and social responsibility (Lukum, 2019). So that the implementation of the “Merdeka” curriculum can support the development of the 4.0 industrial revolution era, where students can continue to innovate and be creative in learning activities.

Based on the results of the research conducted, the answers from the interviews and questionnaires that the respondents have filled out can be analyzed:

##### 1. Implementation of an “Merdeka” curriculum

It occurs because adjustments from the 2013 curriculum change to an “Merdeka” curriculum exist. At the high school level, the “Merdeka” curriculum is still widely implemented for students in class X, while classes XI and XII still use the 2013 curriculum. The source of teaching materials needs to be completed more to be used in class XI and XII. (Anwar, A., Sukino, S., & Erwin, E, 2022). Therefore, there are still many that are applied to students of grade X.

In "Sekolah Penggerak," the “Merdeka” curriculum has been well implemented because it is a place to realize Indonesia as a nation that is sovereign, advanced, independent, and has personality

through the creation of Pancasila students. (Syafi'i, 2021). So indeed, the driving school is a program that creates generations of Pancasila students following the objectives of the "Merdeka" curriculum.

The most visible thing when implementing the "Merdeka" curriculum is the implementation of P5 activities outside of learning in the classroom by doing a project that is more directed to the field of entrepreneurship or other aspects of life. It follows the objectives of the "Merdeka" curriculum. Project-based learning can encourage the development of students' soft skills and build students' character to become a Pancasila student profile. Then it can train students to be active and continue to innovate. (Dewi, 2022). Then the implementation of the learning process in the classroom is also similar to the 2013 curriculum. However, the material studied is more straightforward, not as much as in the 2013 curriculum, because there is more emphasis on Pancasila projects.

There is a transitional period for those who argue that the implementation has not been optimal because it is still transitioning from the 2013 curriculum change to the "Merdeka" curriculum. Hence, there is still much that needs to be prepared, especially for educators. Educators are required to have skills and innovation in the teaching and learning process, both in teaching materials and the use of technology. (Qomariyah, N., & Maghfiroh, M, 2022). Then there are still many facilities and infrastructures that must be prepared to support the successful implementation of the "Merdeka" curriculum. Therefore, the "Merdeka" curriculum was not maximally implemented during this transitional period.

## 2. The Effectiveness of Implementing the "Merdeka" curriculum

The study results show that the independent learning curriculum at the high school level is quite effective. The reasons include, namely, in driving schools, the average teacher is quite familiar with the implementation of the "Merdeka" curriculum, and the "Merdeka" curriculum is quite effective because students can explore new things during project implementation. It can happen because an educator supports the effectiveness of the learning process. If the teacher has more readiness and understanding of the "Merdeka" curriculum, the "Merdeka" curriculum can be implemented effectively. By doing a project, students can find new things; it is effective because students can find their understanding and apply it in everyday life (Dewi, 2022).

However, in some schools, the independent learning curriculum could have been more effective because there are still many educators who do not understand related to the implementation of the "Merdeka" curriculum, school facilities are still inadequate, the loading of material in class X is not balanced with class XI and XII, for children with good grasping power it will be easy to understand, if will not experience difficulties and be confused about choosing, then because some schools are still making adjustments. Hence, they still need readiness in its implementation. From this, it can be seen that the main problem in the effectiveness of the independent learning curriculum is the readiness of resources, which in its implementation must be supported by the readiness of supporting resources, such as facilities, infrastructure, and human resources, namely educators. The lack of readiness of educators can also be caused by limited supporting references for implementing the "Merdeka" curriculum program, such as quality teaching materials used as guidelines (Qomariyah, N., & Maghfiroh, M, 2022).

## 3. Advantages of Implementing the "Merdeka" curriculum

The research results show that the independent learning curriculum program has various advantages for both students and educators. Students must be more active and responsive, develop creativity, hone their soft skills in projects as finished goods or mini-events, and have more freedom in learning activities to accommodate students with specific talents and interests. It is supported by project-based learning, often carried out in the "Merdeka" curriculum program. With the PJBL process, students can learn cooperatively and collaboratively to increase student understanding, with PJBL can also increase student learning motivation and create a fun learning environment. (Dewi, 2022). However, the drawback of implementing an "Merdeka" curriculum is that using the project learning model can increase the task load on students and teachers. Then working in groups continuously allows loss of confidence in their ability to study independently.

The advantages of the "Merdeka" curriculum for a teacher do not need to explain the material as a whole or only need to explain the material that students do not understand because, in the "Merdeka" curriculum, students are required to be independent in finding the material being studied. Teachers can choose how to teach and what materials will be presented. Educators must innovate and design learning tools according to the "Merdeka" curriculum properly. In the "Merdeka" curriculum,

a teacher is often used as a facilitator, and the teacher is freer to convey the material to be taught. Therefore, teachers as educators must be able to generate, maintain, and develop learning that can support the talents and interests of students. (Qomariyah, N., & Maghfiroh, M, 2022).

#### 4. Obstacles to Implementing the “Merdeka” curriculum

It is a unit that mutually supports the success of the implementation of the “Merdeka” curriculum. Based on the survey results, it is known that there are several obstacles to implementing the independent learning curriculum, including thinking about various types of media, the curriculum that has just been studied, the material topics and learning levels are also different, funds, facilities, technology, school climate, lack of education regarding the “Merdeka” curriculum so there must be much learning, teachers do not fully know how to implement the “Merdeka” curriculum. So that if there are components that need to be equipped or available, it can hinder the process of implementing the “Merdeka” curriculum. (Rahayu, R., Rosita, R., Rahayuningsih, Y., Hernawan, A., & Prihantini, P, 2022)

The solutions provided are as follows:

- a. Many add sources of reading or viewing related to learning. Adding references can increase or create creative innovations for learning so that learning can attract and motivate students to learn.
- b. Increasing references and actively asking tutors or teachers who are experts in implementing the “Merdeka” curriculum by learning from experts can add to our insights regarding how the “Merdeka” curriculum process is carried out properly and correctly.
- c. Schools provide adequate facilities, infrastructure, and facilities. Facilities and infrastructure support learning activities, so they greatly determine the success of implementing the “Merdeka” curriculum.
- d. Educators participate in seminars related to the “Merdeka” curriculum, and attending seminars, and training can improve the skills of educators. Training can be one way to improve the quality of an educator.
- e. Schools that are not ready to implement an “Merdeka” curriculum can use the previous curriculum together with preparing changes to the curriculum. Because if it is forced, it is feared that the implementation will not work effectively. The “Merdeka” curriculum is expected to be implemented when the program is ready and mature.

## CONCLUSION

Changes in the world that have entered the era of the industrial revolution 4.0 or the fourth world industrial revolution, where information technology has become the basis of human life, create challenges and opportunities for educational institutions. Therefore, learning strategies, methods, and designs are strived to keep up with the times so that the world of education is required to evolve in the industrial era 4.0 by making changes to the learning system used. In meeting the needs of the education system in the industrial era 4.0, the Ministry of Education and Culture inaugurated the independent learning curriculum, which responded to educational challenges in the industrial revolution era 4.0. Implementing the independent learning curriculum at the high school level is still widely applied to students in class X, while classes XI and XII still use the 2013 curriculum. Implementing learning in the classroom is similar to the 2013 curriculum. The material presented in the independent learning curriculum is much simpler when compared to the material in the 2013 curriculum. The independent learning curriculum is felt to have been adequate to implement because of the advantages of implementing the independent learning curriculum. However, in the implementation of the independent learning curriculum, various obstacles were also encountered, which hindered the implementation of the independent learning curriculum. The obstacles encountered in implementing the independent learning curriculum include thinking about various media types. This curriculum has just been learned, the material topics and learning levels are also different, funds, facilities, technology, school climate, lack of education regarding the independent learning curriculum so that the student has to learn a lot, the teacher does not fully know how to implement the independent learning curriculum. The solutions that can be offered to overcome these obstacles are to add reading sources, shows, and references related to learning activities, be active in seeking information and participate in seminars related to the independent learning curriculum in schools that are not ready to implement the independent learning curriculum. Both facilities, infrastructure, and facilities can use the previous curriculum and prepare changes to the curriculum.

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