

THE ROLES OF TECHNOLOGICAL MODERNIZATION TOWARD THE FREEDOM OF LEARNING FOR PRIMARY SCHOOL LEARNERS IN 4.0 ERA

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Abstract: Indonesia undergoes various processes to improve the educational system quality. Education needs specific attention from all parties because education is a milestone for individuals to improve their well-being and be freed from poverty problems. The processes and efforts of improving educational quality receive various influences from various factors, such as educators, learners, facilities, etc. The era advancement also influences problem management, for example by applying technology to improve the educational quality in Indonesia. The applied technologies may include information accessibility, effective learning media, and innovative learning methods for learners. This article describes the situations and the discussed topics - the roles of technological advancement toward the freedom of learning for primary school learners. This qualitative research applied a literature study design with a descriptive approach. The results showed that: 1) technology influenced the educational improvement of Indonesia and various countries; 2) freedom of learning for primary school learners required adjustment; and 3) various supports from various countries are important to improve the learning quality in this current technology era.

Keywords: Educational System, Role of Technological Advancement, Freedom of Learning, Educational Quality, Primary School

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INTRODUCTION

The technology could facilitate humans in the world to promote their daily life routine, work, and education. Technology is also a field of science to learning a system, such as computer or laptop computers as the tools or applications and the networking systems to assist human daily life activities. In this modern era, technology has become more sophisticated and advanced to support workers, learners, and students in carrying out their tasks. This technological modernization facilitates the educational world to keep up with technological advancement. The environmental influence of technology gains some support from the Internet network. This matter also influences various matters, especially within the scope of education. In education, the Internet is useful to support learning or as a learning media. The educational world must improve school advancement

and education with positive innovation (Maritsa, 2021, p. 92).

The applied technology in education is familiar with educational technology. Gentry explains that educational technology is a combination of teaching, learning, development, management, and other technologies to solve educational problems. The Association for Media and Technology, AECT, identifies educational technology as a research and ethical practice to facilitate learning and improve the performance of creating, applying, and managing resources and relevant technological processes. The educational technological field is an effort to prepare and facilitate learning by creating, developing, managing, and applying all technologies and learning sources. Educational technology refers to an applied discipline due to the demands and needs of learning. The educational technology implementations in the learning processes must be more effective, efficient, and meaningful for the learners (Karuniawati, 2022, p. 36).

The *Merdeka* curriculum is an alternative curriculum to manage the learning degradation during the COVID-19 pandemic. The curriculum provides freedom of learning for the education promoters, such as teachers and principals to arrange the learning, to apply the learning process, and to develop the school curriculum based on the necessities and potentials of the learners. This curriculum, along with the Pancasila learner profile empowerment and essential material focus, aims to manage current and future educational problems. The curriculum transformation changes the curriculum paradigm and learning. The change of the paradigm includes the empowerment of teachers' freedom as the controllers of the learning process, the flexibility from rigid standard control and homogeneous learning process demands at all educational units in Indonesia, the empowerment of student agency such as the rights and the capabilities of the learners to determine the learning process based on the learning objectives, the skill reflection, and the proactive and responsible countermeasure to succeed (Alimuddin, 2023, p. 68).

The *Merdeka* curriculum applies to specific featured programs, the driving school. This program consists of the driving teachers, practitioners, and facilitators. The driving teacher or *Guru Penggerak* is a program to prepare tutor-teachers for each school. Thus, the schools could apply the values of the *Merdeka Belajar* curriculum. They also have the role of informants to provide training for the native schools and to empower the other peer teachers. The *Guru Penggerak* creates visionary, creative, critical teachers to empower learners while exploring various learning materials. The *Merdeka Belajar* curriculum has four main policies (Kemdikbud, 2019). They are The National Standardized School Examination (USBN) based on school assessments - this examination is the revision of the national examination. The examination focuses on the minimum competence assessment, the character survey, the lesson plan, and the new learner recruitment based on the zonation in a flexible manner. The learning outcomes become the received skills of the learners based on the results of direct skill management in mental activity. Learning outcomes become the satisfaction value of learners after struggling with the learning. In the *Merdeka Belajar* curriculum, the priority of learning outcomes is character as the developed value. Nadiem Makariem explains that the focus includes the characters of the learners as Pancasila individuals (Panginan & Susianti, 2022, p. 11).

Since 2019, the government, represented by the Ministry of Education and Culture

promoted an educational revolution for all levels, starting from primary, middle, and high-level education. The applied program to realize the revolution is - *Merdeka Belajar* for all formal educational aspects. The *Merdeka Belajar* curriculum provides freedom and convenience of learning for all learners. Thus, they can learn in a tranquil, flexible, and joyful situation without any stress or pressure. The curriculum also pays attention to the natural talents of the learners without forcing their learning interests and mastery. Thus, they can develop their talents based on their hobbies and skills so the learners can have proper portfolios based on their reality. Burdening the learners with something beyond their capabilities would make them commit sins or mistakes. Thus, wise teachers should not burden them.

Technology provides significant influence and benefit for the implementation of the curriculum especially at the primary school level. This *Merdeka Belajar* era provides an opportunity for both teachers and learners to argue, think, and assist in achieving an excellent educational system. The economic participation aspect of the *Merdeka Belajar* era is observable in the information accessibility from various sources anytime and anywhere. Joyful learning refers to a learning situation method for the teachers. This learning could encourage the teachers to create a joyful learning atmosphere for the learners so they could focus on the studied materials. This applicable method requires technological advancement, such as watching learning video, learning music, singing while learning, or guessing.

From the explanations, education is an important aspect of making the national generation brilliant. Therefore, the optimization of the educational world requires technological modernization to create innovative learning. This article reviews the roles of technological modernization toward the *Merdeka Belajar* for primary school learners in the 4.0 era. The researchers offered a new perspective to apply technology in supporting the *Merdeka Belajar* program, especially for primary school learners.

METHOD

This research applied a descriptive qualitative research type as the scientific steps. This research describes the assessment strategies that require the researchers to investigate the events and phenomena of the individuals. In this research, the researchers obtained the data for the descriptions based on the individual or community life stories. The researchers used the obtained information to create a descriptive chronology.

The characteristics of descriptive research include the use of words and figures instead of numbers as found in quantitative research. This descriptive qualitative research presented the data without any manipulations. This research objective was to provide comprehensive descriptions of a phenomenon and to expose and clarify the phenomenon. The researchers described the related matters with the variables. Then, the researchers interpreted and elaborated the related data based on the real situations, attitudes, and perceptions in a community (Rusandi & Rusli, 2021, p. 2).

Generally, descriptive qualitative research is a method of qualitative study in a brief and inductive flow. In this context, the inductive flow of descriptive qualitative research begins with the process of explaining the phenomenon. Then, the process continues with the generalization of the phenomenon (Yuliani, 2018, p. 84). The researchers arranged the discussion systematization based on the descriptive qualitative

research. This descriptive qualitative research could elaborate on the program of *Merdeka Belajar*, the applied technology on the curriculum in this 4.0 era, technological modernization, the freedom of learning for primary school learners, and the active roles of parents and teachers.

RESULT AND DISCUSSION

The Merdeka Belajar Program

The *Merdeka Belajar* program is a newly launched program by the Ministry of Education and Culture of the Republic of Indonesia, the Kemdikbud RI, as stated by the Ministry of Education and Culture. He is Nadiem Anwar Makarim. Nadiem attempted to create a freedom of learning atmosphere with various considerations before determining the policy. The results of the Programme for International Student Assessment, PISA (2019) found that Indonesian learners could only reach the six-bottom rank. In terms of mathematics and literature, Indonesia is ranked 74 out of 79 countries. Based on this matter, the *Merdeka* curriculum presents wide intra-curricular instruction with promising content for the learners. This curriculum provides the learners adequate time to think critically and develop their potential (Putri, 2022, p. 172).

Nadiem Makarim, during the National Teacher Day (HGN) on November 25, 2019, explained the concept of *Merdeka Belajar* education. Nadiem explained that the cores of *Merdeka Belajar* or freedom of learning were the teachers and students with high flexibility to innovate, learn independently, and learn creatively. This concept is a part of the educational institution's effort to improve educational quality. The educational institution, in this case, must be flexible to provide freedom and transparency to provide real contributions. These efforts are useful to realize community welfare during the 4.0 industrial era and 5.0 society era. The government explains that this concept provides freedom of thinking as mandated by the 1945 Constitution and Pancasila. Therefore, schools must be adaptive and futuristic. Schools are the icons of nations so the educational system becomes the reference of development, including excellent human resource development. Humans must also have skills and competitive eagerness so that schools must adapt relevant strategies based on the curriculum to reach the objectives. Then, the efforts to improve the education is - the implementation of *the Merdeka Belajar* program (Suhartono, 2019, p. 9).

The *Merdeka Belajar* is the government policy to improve educational quality by preparing excellent graduates to encounter complex futures. This curriculum is useful to restore meaningful, joyful, and relevant education based on the teaching unit to realize learners with Pancasila characteristics. One of the efforts to realize meaningful and qualified learning with the *Merdeka Belajar* curriculum is - the effort to direct the necessities, skills, and characteristics of the learners. The *Merdeka Belajar* curriculum allows teachers to freely select the relevant learning instruments based on the learners' development. The applicable media for the teachers are varied so the teachers may have wider references to realize meaningful learning. The teachers could also involve the learners actively to make them interested. Most learning media in this era is based on technology and information.

The assessment within *the Merdeka Belajar* curriculum becomes the crucial aspect of the teaching-learning process as the effort to develop the educational quality.

The assessments may take various forms and are important because of the objectives to determine certain lesson achievements. The learning assessment could become comprehensive references from various measured aspects. Article 9 Clause 1 states that assessments of learning outcomes may take forms into formative or summative assessments. The formative assessments may include pre-assessment and formative assessment while learning. On the other hand, the summative assessment refers to the post-assessment of a program, such as the final semester test or final-term test. The implementation of 2013the curriculum had some assessment requirements, such as daily assessment (PH), midterm test (PTS), final semester test (PAS), and final term test (PAT). However, the Merdeka Belajar curriculum changes the terms as mandated by the Ministerial Regulation of Ministry of Education, Culture, Research, and Technology Number 21 in the Year 2022 about the Educational Assessment Standard for Early Childhood Education, Primary Level Education, and Middle-Level Education dated on April 26, 2022 (Karimah, 2023, p. 190).

This concept encourages the characters that allow teachers and learners to receive knowledge, attitude, and skill based on the environment without any hindrances. The *Merdeka Belajar* curriculum facilitates learners to develop their potential, starting from attitude, sympathy, and empathy toward the educational environment. Then, the curriculum could improve their self-confidence and adaptive skills within the local community. This concept provides new offerings for the educational world. This concept explores the learners' capabilities with the roles of teachers as the facilitators to provide positive implications for the learners. This matter occurs because the learners have the skills to comprehend something interesting for the learners and relevant to their competencies. This concept also includes the technological aspect of the learning process.

The Technology within the Context of the *Merdeka Belajar* Program in the 4.0 Era

The 4.0 industrial revolution is inseparable from system development, the digitalization. The digitalization era is an era with accessible and immediate information due to digital technology implementation. This technological implementation applies a computerization system with an Internet connection. The development of the digitalization era also has some implications in the educational field. *Merdeka Belajar* provides the freedom for the learners to learn with their unique personal learning styles. Learners could also freely search references to find the demanded information. Learners in this era are millennial individuals. They have been familiar with electronic and digital media since they were born. Technological development and advancement will bring new media as sources for learning media, such as Instagram, Twitter, Website, Blog, or YouTube. The new media provide communication feasibility to facilitate and accelerate information gain (Ansori & Putridiyanti, 2022, p. 8).

School digitalization is a logical consequence due to the era changes to adapt and to master science and technology as absolute matter. In this case, the government issues a policy about school digitalization to support the digital learning activity. The government provides teaching materials in a network to be applied simultaneously by the stakeholders of education, such as teachers, learners, schools, and communities. The policy emphasizes the implementation of information technology media, such as computers, tablets, and learning portals as the operational assistance of school performance. The implementation of the media is based on the regulation of the

Ministerial Regulation of the Ministry of Education and Culture Number 31 of the Year 2019 and the Ministerial Decree of the Ministry of Education and Culture Number 320/P/2019 (Isma, 2022, p. 130).

Educational technology is a set of computer utilizations both in terms of hardware and software with the implementation of educational theories or practices to facilitate the learning process. However, the other definition suggests that educational technology is an immediate communication for educational necessities. The same matter goes for communication by prioritizing the communication media, such as the technological tools or instruments. From the definitions, the researchers conclude that educational technology refers to software or hardware within the computer with the implementation of educational theory to facilitate and communicate in a lesson (Rosmana, 2023, p. 106).

The efforts of keeping up-to-date with the technological advancement and implementation of sophisticated tools are useful to accelerate the learning process. Therefore, there is a connection between the educational field and the 4.0 industrial revolution. Besides that, the implementation of technology could provide a changing learning focus from teacher-centered learning to learner-centered learning. All modifications are useful to improve the educational quality of both the procedures and the objectives of education. The technological integration of an educational system becomes an approach to realizing the notions. There are three different things to implement educational technology. Firstly, the teaching could create learning and provide sources for the learners to use the technology in the class in an online manner. Secondly, the applicable technology for teachers is useful for research, training, paper writing, and presentation. Thirdly, educators and instructors could use the technology to fulfill administrative tasks (Khairatunnisa, 2023, p. 232).

The promoted learning process could train the background skills for further development. The educational process consists of two matters: formal education, such as schools; and non-formal education, such as learning groups, learning with parents, and many more (Widiyono & Millati, 2021, p. 5). Thus, technology quickly facilitates various activities to do and to obtain, including education. The applicable technology for education is educational technology.

Technological advancement in learning encourages teachers to create various opportunities and challenges. Various learning sources and information are more accessible because of technological developments, such as the Internet and digital devices. The implementation of technology allows teachers to find and distribute the latest educational sources, provide interactive learning media, and encourage discussion and collaboration among the learners. Besides that, these changes bring new requirements for teachers to master the required skills of applying technology in learning. The effort of improving the learning quality and achieving the objective of *Merdeka Belajar* or freedom of learning requires the teachers to receive training about effective integrated technology in the learning process. The implementation of technology allows teachers to create innovative and attractive content, improve the learners' participation in activities, and provide feedback immediately. Technological integration in learning encourages teachers at primary schools to improve the learning quality completely, to provide wider access to educational sources, and to encourage the digital skill development of the learners.

The educational technology also facilitates and creates a joyful learning

atmosphere. This action is important because monotonous learning methods make learners bored. Thus, they will lose motivation to learn. From the psychological aspect, the motivation could encourage the learners to do something voluntarily. Besides the technology, the teachers' encouragement or success in creating a joyful learning atmosphere also plays an important role. Primary school teachers must recognize the general characteristics of primary school learners and some learners' necessities at the primary level, such as:

1. the primary schools with the interest of playing.

Primary school learners are children who like playing. Based on their learners' necessities, school teachers must develop learning with playing activities as the main elements for low-level learners. The school teachers must design learning models with some playing activities. Thus, the learning design will be more flexible.

2. Secondly, primary school learners with the interest to actively move.

Primary school teachers are at the top active development of fine and rough motoric systems to actively move. Based on these necessities, teachers must design active learning to move. Teachers must design the learning to allow learners to actively move in finding information from the learning. The teachers could design joyful learning for the learners by playing games or many more.

3. Primary school learners love to collaborate.

Primary school learners have excellent interaction with their peer-classmates. Therefore, teachers must develop various collaborative learning. This process allows primary school learners to learn various group regulations, loyalty concepts, the concept of learning from anyone, learning to be responsible in accomplishing tasks, and sportsmanship.

The Technological Modernization and *Merdeka Belajar* for Primary Schools

Based on technological development, the groups of learning media may include audio-visual learning media, computerized learning media, and integrated learning media between printed and computerized media. The developed media could also encourage learners to remember the studied material and provide new stimuli. Information technology and communication in Indonesia's context and short-term become an important construction for society development. The selection relies on the features of the media, such as the objectives, talents, and cognition. The implementation of technological-based educational media to manage the problems could also support learning. The mastery of utilizing educational technology could clarify the message with non-verbal modes. The applied technology could manage spatial, time, and meaning limitations with the adjusted educational mode and variations. Thus, the learners will receive some certain information (Putri, 2022, p. 170).

The implementation of information technology and communication for the learning media has both objectives and benefits to facilitate information retention from the teachers to the learners. Widiyanto et al states that the implementation of learning media brings various functions, such as 1) as the technology to facilitate the learning process for both teachers and learners such as by creating administrative program, graphics, and database; 2) as the science to obtain various information and to be the parts of the mastered disciplines for the learners; and 3) learning source and media to facilitate learning process for both teachers and learners (Putri D. P., 2022, p. 4).

The technology could attract learners to learn effectively and efficiently. Learning with computer assistance could motivate the learners because the implementation of a computer provides joy, creativity, and games. Learning with computer assistance provides opportunities for the learners to learn authentic materials and obtain broader lessons. The media allow learners to be more joyful and excellently understand the given materials. The implementation of learning media could also motivate the learners to learn.

The *Merdeka Belajar* curriculum at the primary school level or Islamic primary school level should involve the active participation of the learners. Teachers could invite the learners to read the storybooks. This action could make the primary school learners interested in the stories. Thus, teachers must consider the learners' interests in the storybooks and apply different strategies or books with figures, such as books about the characters of *Wayang* if they are not interested in the previous book. Then, the teachers could slowly teach the learners to discuss the given themes based on the read books (Pratiwi, 2023, p. 3)

The *Merdeka Belajar* curriculum for primary school becomes the primary focus to prepare the learners with Pancasila insight with various learning methods and materials. The curriculum also provides freedom for schools in cities or regencies to develop education based on this curriculum. Therefore, each school that applies the *Merdeka Belajar* curriculum will have different learning implementations but with the same Pancasila values. The curriculum implementation has three components: the extracurricular, intra-curricular, and project based on the Pancasila Learner Profile (PPP) (Rusmiati, Ashifa, & Herlambang, 2023, p. 1494).

Since 2019, the government, represented by the Ministry of Education and Culture promoted an educational revolution for all levels, starting from primary, middle, and high-level education. The applied program to realize the revolution is - *Merdeka Belajar* for all formal educational aspects. *The Merdeka Belajar* is a freedom of learning with wider opportunities and conveniences to learn in a tranquil, happy, stress-free, and pressure-free situation. Burdening the learners with something beyond their capabilities would make them commit sins or mistakes. Thus, wise teachers should not burden them. Thus, teachers should master the freedom of thought before the learners because teachers are role models (Sudarto, 2021, p. 408).

The newly applied curriculum must be adjusted and focused on the essential materials, character improvements, and skills of primary school learners. The implementation of a new curriculum requires the principals and the teachers to apply learner-centered learning. The teachers have the roles and responsibilities to realize the educational changes of the learners. Therefore, teachers must promote the primary changes for the learners to be better humans (Oktaviani & Ramayanti, 2023, p. 1455).

The Active Roles of Teachers and Parents

As a related entity with the culture and human civilization, education in the world has been undergoing some changes in this globalization era. These changes occur due to science and technology advancement so that humans can enjoy the changes. On the other hand, this advancement goes a long with various miseries of children, especially during this globalization. Therefore, education applies technology to facilitate the learning in the educational institutions. This effort is useful to support and provide information for learning (Manongga, 2021, p. 2). However, the innovation of the educational world

should receive some support from the teachers' performances and parental roles.

Learner-centered learning requires active participation from the learners and facilitation by the teachers as facilitators. Learners with adaptive skills could develop their creativity. Science and technological advancements facilitate children to learn better than visual works. The Internet, environment, community, institution, industry, and peer-classmate could provide material learning. The community members of figures and parents could also share their ideas in the class about the related learning themes and jobs. Teachers are not only the main information source for the learners but instead, they are learning partners for the learners (Pertiwi, 2022, p. 8843).

Teachers like the *Merdeka Belajar* drivers must have active, energetic, creative, innovative, and skillful attitudes because they are the driving facilitators at schools. Teachers as the driving facilitators of *Merdeka Belajar* must master and teach effectively in the class and create an excellent environment by fostering excellent relationships with the learners. Then, the teachers must use various technology to improve the teaching-learning. Teachers must also train and revise their mistakes and errors while teaching-learning. The policy renewal with *Merdeka Belajar* encourages the teachers to measure and review themselves to adjust to the era of development. This matter is useful to make teachers have the information and could apply the technology for the learners. However, the teachers as the *Merdeka Belajar* drivers must instill excellent values in the community to accelerate the accessibility and technological implementation (Arviansyah & Shagena, 2022, p. 224).

One of the roles is to promote learning innovation. This effort is useful to answer the learners' necessities and create free learning climates. Learning innovation could facilitate learners' freedom of thought, innovation, learning, creativity, and happiness. The role of teachers in learning innovation is - to prepare innovative teachers. Innovative teachers will have the responsibility to make the learners learn and behave with new and unique methods. Thus, teachers must have knowledge, skills, and reliable values. Teachers must master various methods, strategies, and learning media. Teachers must master learning technology to support the educational activity (Daga, 2021, p. 1083).

Teachers have important roles to develop curriculum and apply the curriculum. Teachers as educators have the important roles to apply the regulation of *Merdeka Belajar*. The development of curriculum at schools requires the teachers to construct, contribute, and collaborate in the organization and learning source structures, such as teaching, textbooks, and content effectively. The agreement of the teacher is the requirement to adjust the curriculum content and the class necessity while developing the curriculum. Teachers must be aware of the learners' psychological matters and must have excellent knowledge about unique learning styles. The effort of assessing the learning success of the learners requires the teachers to evaluate. Therefore, the effort of designing a curriculum requires the teachers to master the understanding of the plan, the design, the management, the evaluation, the research, the decision-making, and the administrator (Saragi, 2023, p. 10). However, the efforts to improve the learners' skills must receive parental support to prevent various hindering factors while the learners are learning or using social media.

Parental roles are important because the parents share the related tasks to do while nurturing the children. Parents provide the related education starting from the childhood period of the learners. Therefore, parental roles are important as educators, protectors,

directors, advisors, and responsibility-takers. The parental roles are important to teach the children about excellent behaviors in their lives and to protect them from bad matters. Parental roles in nurturing, educating, protecting, directing, and preparing children are important for their future social life. Parental roles are important for the children's development from cognitive, affective, and psychomotor aspects (Zahara, 2020, p. 109).

Parental roles could also monitor the habits of using the gadget. Parents could grant their children an opportunity to utilize the gadgets when the children have difficulties accomplishing the given online tasks by the teachers. This action is also applicable when the children are playing with their gadgets, such as by allowing them to play for 90 minutes. Then, after that period the children must return the gadget and learn again. Excellent gadget utilization for children aged between 6 and 18 years is 2 hours per day because the exaggerated implementation of gadgets could make them lose time and interest in learning or interacting with their peers. The parental role to provide limited time for the children to play is important to realize the targeted education. If children have proper time management from their parents and are willing to follow the regulations, the children could avoid negative matters due to gadget implementation or addiction. This management could allow the children to be successful in their education and achievements (Hidayatuladkia, 2021, p. 368).

The synergy between parents and teachers could facilitate and direct the learners' development. Teachers at schools and parents at home share the same roles in supervising the children. Children with reckless behavior in utilizing technology may suffer from negative impacts. However, if the children remain under parental supervision, the learning activity could gain two-directional accesses both from home and at school. This matter could empower the cognition toward learning and technology.

CONCLUSION

Based on the discussion, technological advancement influenced the educational aspect of Indonesia due to information accessibility and media. This matter triggers innovation and creativity in teaching methods for primary school learners. The government applied for a new program, the *Merdeka Belajar* program, to realize education in Indonesia. However, this program requires support and adequate adjustments. Parents should also monitor the applied technology in the current curriculum because primary school children are vulnerable to bad things due to digital activity. Parental monitoring could also maximize the learning outcomes.

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