

THE CHALLENGE OF BEING A TEACHER IN INDUSTRIAL REVOLUTION 4.0

¹Mukhtar Efendi*

¹IAIN LANGSA

mukhtar_efendi@iainlangsa.ac.id*

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Abstract

The aims of study is to describe the challenges faced by teachers in facing the changes in the era of globalization and technology in the Industrial Revolution 4.0 era at Darussalamah Junior High School (SMPS Darussalamah). The research method used was descriptive qualitative and refers to a case study. Data collection was conducted through observation, interviews, and documentation. Data validity was validated using diligent observation and triangulation of techniques and sources. The results of the study indicate that teachers face several challenges in the changing era of the Industrial Revolution 4.0 era at Darussalamah Junior High School. One challenge is the need for digital literacy, where teachers must improve their understanding and knowledge of technology to implement this knowledge in the teaching process. Another challenge is the ability of teachers to inovate in teaching methods in accordance with existing developments. Another challenge comes from students, where student morale has been eroded due to changes in technological globalization, and students' social engagement with their environment has also been eroded. This includes not only fellow students but also a lack of respect for their responsibilities as learners.

Keywords: *challenges, industry 4.0, teachers*

INTRODUCTION

The Industrial Revolution 4.0 has driven significant changes in education, demanding teachers possess high competency in the use of technology. However, UNESCO's Global Education Monitoring (GEM) Report (2016) shows that the quality of education and teachers in Indonesia remains low compared to other developing countries. The role of 21st-century teachers is no longer merely a transmitter of material, but rather a facilitator, innovator, and agent of change. Reforming technology-based learning is crucial to addressing the challenges of the times, emphasizing digital literacy, creativity, critical thinking, and adaptability. Changing the role of teachers is key to improving the quality of national education in this digital era.

Critical thinking skills have become a goal of education, as they demonstrate higher-order thinking and play a role in moral and social development, especially in the development of science (Enciso et al., 2017). Based on the above description, researchers can conclude that education is

a desired change that occurs systematically through the educational process. This change affects behavior, personal life, knowledge, and individual skills. Education, or teachers, has essentially remained unchanged, both during classical and modern times, although in the latter, perceptions of teachers have begun to waver and become fragile. Many are merely officials receiving salaries from the state or organizations, focusing more on cognitive and psychomotor aspects of intelligence, with less attention paid to other aspects. Among the negative impacts is the emergence of intelligent and skilled students, but many still engage in brawls, fights, rape, coercion, and other forms of violence.

Therefore, teachers' role in strengthening students' character and moral education is crucial. This will impact their future lives as the nation's future leaders, who will wisely use technology as part of the industrial revolution (Iksal, Hayani & Aslan, 2024). Of the various global and local problems that arise, several that require serious attention are the negative impacts of globalization, including the emergence of global or borderless social interaction, fraud, robbery, theft, corruption, collusion, and others (Salman & Alkhazalleh, 2016).

Among the challenges teachers face in facing globalization are: first, the Moral Crisis; the influence of science and technology and globalization has led to a shift in values within society. Second, the Social Crisis; crime, violence, unemployment, and poverty within society, resulting from the development of industry and capitalism, have given rise to existing problems within society. Third, the Development of Science and Technology; the rapid and fundamental development of science and technology requires teachers to be adaptable, responsive, wise, and prudent (Jena & Barad, 2024).

The development of science and technology is influenced by the ability of human resources to innovate to compete in the era of global competition, thus demanding high-level thinking skills. When the government decides to adapt to the industry 4.0 system, it must also consider its sustainability. This digital industrial system must not become a burden because it cannot be utilized optimally.

In this regard, teachers are required to be literate or able to master technology, given the highly complex challenges facing teachers in the millennial era (Purwanto, 2021). Furthermore, the challenge for future teachers is not only to meet academic requirements but also to develop an

ideal teacher profile that embodies core competencies: pedagogical competence, personality competence, social competence, and professional competence. Mastery of these four competencies is absolutely essential for every teacher to become a professional educator, as required by the Teachers Law.

Initial observations at Darussalamah Junior High School (SMPS) revealed issues regarding teacher preparedness to face the challenges of the globalization era of Industry 4.0. This issue still requires attention. Among other issues, teachers lack the necessary knowledge of technology and information to effectively apply them in their teaching. The current shift from teacher-centered to student-centered learning is also suboptimal due to a lack of learning resources.

The transition from a teacher-centered to a student-centered learning model presents a unique challenge for teachers. Teachers are required to be technologically literate, innovate in methods/present enjoyable and meaningful learning, keep abreast of changing science and technology developments, and create technology-based learning media. To meet these needs, the government offers teacher certification, but certified teachers remain unsure how to use technology. Ultimately, this study will explore the problems and solutions related to the challenges teachers face in facing the globalization changes of Industry 4.0 at Darussalamah Junior High School. Based on these issues, the researcher is interested in conducting a study entitled "The Challenge

METHOD

This research uses a qualitative approach, characterized by the natural environment as the primary data source and an emphasis on the research process, not solely on the results (Savin & Major, 2010). The chosen research method is a case study. Primary data in this study is obtained directly from informants in the field, through observation and in-depth interviews regarding how teachers are facing the changes of the globalization era of Industry 4.0 and the challenges presented in this era. The author will dialogue with teachers to identify the challenges of the 4.0 era and how teachers can positively impact these changes.

The research informants are teachers, principals, students, and elements related to the teaching and learning process. Purposive sampling was used to select research subjects who are considered to have in-depth knowledge of the information and issues and are reliable sources of

reliable data. The data validity checking technique uses triangulation, following Moleong's (2014) opinion, which states that triangulation is a data validity checking technique that utilizes something other than the data for checking purposes or as a comparison to the data. In this case, the author uses Technical Triangulation, namely the use of various data disclosure techniques carried out on data sources. Testing the credibility of data with technical triangulation means checking the data with the same source using different techniques. For example, disclosing data about student activities in class using interview techniques, then checking it with classroom observations to see student activities, then with documentation. The data analysis process carried out by the researcher adopted and developed the interactive pattern developed by Miles and Huberman, namely: Data Reduction, Data Presentation, Conclusions and Verification.

FINDINGS AND DISCUSSIONS

Teacher Challenges in Facing Global Changes in the Technology Industry 4.0 at Darussalamah Junior High School

Based on interviews and observations conducted by researchers, it appears that at Darussalamah Junior High School, teachers face challenges in the learning process due to the changes in the technology industry 4.0. Darussalamah Junior High School is also experiencing changes due to the globalization revolution. As stated by Beck (2018), globalization is a process that makes something (an object or behavior) a characteristic of every individual in the world, without being limited by territory. Globalization: We are currently on the verge of a technological revolution that will fundamentally change the way we live, work, and relate to one another.

As explained in the theory above, Darussalamah Junior High School is also experiencing changes in the way we live, work, and relate to one another. It is apparent that technological developments have entered the junior high school environment. Observations indicate that each student drives their own vehicle, the school's facilities and infrastructure tend to be sophisticated, and both teachers and students already have gadgets. This is the impact of the development of the 4.0 revolution era. Everything found in the SMPS Darussalamah environment is included in the theory stated by Beck, (2018), where the Fourth Industrial Revolution Era is characterized by artificial intelligence, supercomputers, genetic engineering, nanotechnology, automatic cars, and innovation. Quoted from Kowalikova, Polak, & Rakowski, (2020), he explained that Industry 4.0

is a term that first appeared in Germany in 2011, marked by the occurrence of the digital revolution. This concept refers to digitally integrated industrial processes, including various technologies such as 3D printing to robotics, which are believed to be able to encourage increased productivity.

The presence of globalization certainly has an impact on life, including in the Darussalamah Junior High School environment. These influences encompass both positive and negative aspects. The positive impacts on education, based on interviews and observations conducted by researchers at Darussalamah Junior High School, include: first, the advancement of transportation, such as motorcycles, makes it easier for students to get to and from school. Second, the availability of mobile phones makes it easier for teachers to contact students and parents and provide learning materials during the current pandemic. Third, the improvement of technology-based facilities and infrastructure at Darussalamah Junior High School makes teaching easier for teachers. Fourth, these globalization changes require teachers to be more innovative in their teaching methods, requiring them to innovate their teaching methods to keep up with changing times. Fifth, these globalization changes have a positive impact on teachers, particularly in the use of media and learning tools (Mialiawati, 2020). Through technological advances, teachers now have easier access to various digital platforms, educational applications, and modern learning tools such as smartboards and LMSs. Furthermore, globalization also opens up opportunities for competency improvement through online training, which encourages learning to be more innovative and relevant to the needs of the times. The negative impacts that occur due to changes in the globalization of the 4.0 technology industry at SMPS Darussalamah based on the results of interviews and observations that have been carried out by researchers are, with the sophistication of transportation tools making students like racing, the existence of cellphones makes students not wise in using them so that they form bad student morals, the nature and morals of students become bad due to following the wrong flow of change.

Darussalamah Junior High School is under the leadership of the Darussalamah Islamic Education Foundation. The challenges faced by Islamic education today are much heavier than the challenges faced by Islamic education in the past. The era of globalization with its various tendencies as mentioned above, has resulted in the erosion of students' morals, in this case teachers are obliged to foster and shape students' morals in their respective schools as quoted from Susana,

he stated that in Islam a teacher is someone who has knowledge, usually called Teungku (Acehnese), *mu'allim*, *murabbiy*, *mursyid*, *mudarris*, and *muaddib*, which means a person who provides knowledge with the aim of enlightening and fostering the morals of students to become people with good personalities. From the above understanding it is clear that a teacher means a chosen person whose job is to teach useful knowledge by having knowledge and behavior that can be trusted and believed to be true and also becomes a role model for his students.

Based on interviews and observations conducted by researchers, several challenges are faced by teachers in facing the global changes of Industry 4.0 at SMPS Darussalamah. These challenges are as follows:

1. Digital Literacy

Digital literacy is the knowledge, skills, and behaviors used in various digital devices such as smartphones, tablets, laptops, and desktop PCs, all of which are considered networks rather than computing devices (Eshet, 2004). At SMPS Darussalamah, there are already digitally literate teachers, but the phenomenon of students becoming more technologically savvy presents a challenge for teachers today.

Based on interviews conducted by researchers, researchers found that digital developments pose challenges for teachers in the teaching and learning process. Students who are already digitally literate may potentially have a negative impact on them. This digital use requires teachers to also be digitally literate.

2. Method Innovation

Teaching methods are a component of the educational process, serving as a tool for achieving goals, supported by other teaching tools that form a unified whole within an educational system (Al-Rawi, 2013). Based on this opinion, it can be said that teaching methods play a crucial role, making it crucial for teachers to continually innovate their teaching methods. Continuously innovating teaching methods at Darussalamah Junior High School (SMPS) is also a challenge. As technology advances, teachers are required to adapt their teaching systems and utilize technology in their teaching.

The method innovation referred to here means that the methods teachers use must keep pace with the globalization of the technology industry. This requires teachers to be able to utilize

technology as a teaching method. This is a challenge for teachers at Darussalamah Junior High School. According to Alzahrani (2015), combining face-to-face learning methods with technology or the web can increase student interactivity, maximizing the learning process. In the learning process, technology needs to be structured and scheduled to achieve optimal learning outcomes. Seeing that educational methods utilizing technology will have a positive impact on education, teachers must be able to innovate their teaching methods to avoid students' perceptions of monotony. This will make educational goals easier to achieve.

3. Development of Science and Technology

Based on interviews and observations conducted by researchers, the rapid development of science and technology poses a challenge for teachers at Islamic Education Schools, such as Darussalamah Junior High School. The rapid and fundamental development of science and technology forces teachers to adapt responsively, wisely, and prudently. Responsiveness means teachers must master science and technology products, especially those related to education, such as learning using multimedia.

Islamic Education School teachers must be able to master educational technology and apply it in their teaching processes. This is always considered a challenge because science and technology will continue to develop, and the world of education will experience changes from these developments. This statement is supported by Healey (2016), who states that learning technology continues to evolve with the times. In everyday learning, we often encounter the use of technological developments in education. The application of technology in learning activities is marked by the presence of e-learning, which, at all its various levels, has facilitated changes in learning delivered through all electronic media such as audio/video, interactive TV, compact discs (CDs), and the internet. This is considered a challenge for teachers at Islamic Education Schools, where they must be able to follow technological developments in carrying out the learning process, such as starting to use and utilize technology such as electronic media, so that the learning that occurs is more efficient and effective.

4. Moral Crisis

The influence of science and technology and globalization has led to a shift in values within society. Traditional values that highly upheld morality have now shifted with the influence of

science and technology and globalization. The influence of science and technology and globalization is particularly pronounced among adolescents. The influence of both print and electronic entertainment, which tends toward pornography, narcotics, and other topics, has tempted adolescents to a lifestyle that leads to promiscuity and materialism. This negative impact impacts student morality, posing a challenge for teachers in Islamic Education Schools, as the goal of Islamic education is to develop students' morals, which means fostering good morals (Muis, Eriyanto & Readi, 2022).

In fact, education in morals, values, and norms is essential for the nation's future generations to build our nation in accordance with the nation's character. More broadly, education in morals, values, and norms carries the mission of maintaining, preserving, and fostering values, morals, and norms into five interconnected systems of life: clarifying and revitalizing the morals of self and human life, society, nation, and the world in which it exists; humanizing, civilizing, and empowering humans and their lives in a complete and civilized manner; fostering and upholding law and order and a humane, democratic, and principled way of life; and carrying out the mission of fostering and developing humans, society, and a nation that is modern but still has personality.

The numerous negative influences that lead to poor morals in children pose a challenge for teachers at Darussalamah Junior High School. Based on interviews and observations, researchers found that the technological development that most impacts students is the mobile phone (HP), as it allows children to easily access everything, including negative content.

5. Social Crisis

The social crisis is also caused by the development of the technology industry, and this presents a challenge for teachers. The reduced social interaction of children results in apathy towards their environment, not only towards their peers but also towards their responsibilities as students. As quoted by researchers from the principal and teachers of Darussalamah Middle School, the presence of information technology has also caused changes in the social structure of a society. Changes in social structure can be seen in changes in the characteristics of relationships between parts of the social structure. Similarly, at Darussalamah Middle School, children prefer to spend time alone with their phones, as the virtual world is more enjoyable for them.

The internet is a form of technology that provides various methods of living in a virtual world that are similar to those of real life. The emergence of online social media has led to today's society favoring closer friendships online over those formed in person (Manago & Vaughn, 2015). This indicates a change in relationships that causes people to disrespect those close to them just to communicate with friends who are physically distant.

Teachers at Darussalamah Junior High School (SMPS) are making efforts to face the challenges brought about by the global changes of the 4.0 industrial technology era. They are implementing various strategies to address these changes and maintain effective teaching in the classroom, one of which is improving teacher competency.

The efforts made by teachers at Darussalamah Junior High School are to improve their competency as teachers. They continually strive to improve their understanding, skills, knowledge, values, attitudes, and interests related to educational technology so that they can easily implement these understandings and skills during the learning process.

Furthermore, these efforts also provide students with an understanding of how to use technology wisely, especially in learning. Supported by McGrail's (2005) opinion, teachers consistently advise students not to follow the negative trends of technological change. Teachers at Darussalamah Middle School also innovate their learning methods to address these changes. They strive to innovate their teaching methods to keep pace with current developments. They strive to utilize the technology provided by the school to make learning engaging and prevent students from getting bored.

CONCLUSION

Based on the results of interviews and observations, it can be concluded that teachers at SMPS Darussalamah face various challenges in the era of globalization and the development of the technology industry 4.0. These challenges include demands for digital literacy, keeping up with developments in technology-based education, innovating learning methods to keep pace with the times, and addressing changes in students' morals due to the negative influence of technology. To overcome this challenge, teachers are making various efforts, such as increasing technological competence, developing relevant learning methods, and instilling digital ethical values, so that students can use technology wisely and responsibly.

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