Digitizing Education in Indonesia After the Pandemic

Melizubaida Mahmud$^{(\boxtimes)}$ and Rierind Koniyo

Gorontalo State University, Gorontalo, Indonesia
melimahmud@ung.ac.id

Abstract. Education is actually a basic need for the formation of the ideal personality and character of an individual. The learning process that occurs in the curriculum changes and directs learning to transform from conventional to modern which aims to create an effective, efficient and change-oriented learning situation called education digitalization. Digitization of education takes place so fast and is experienced at all levels of education. The Covid-19 pandemic has ushered in digital technology that has penetrated all aspects of life, including education. Learning adjustments in the form of project-based teaching, collaboration, innovation and life skills-oriented.

Keywords: Digitizing · Education · Pandemic

1 Introduction

The world is currently facing recovery after the Covid 19 Pandemic. This pandemic has affected many sectors, one of which is the education sector in Indonesia. Education has a very important contribution in improving the quality of a nation. Many people experience culture shock to the new learning process. Educational institutions are faced with learning choices that cannot be stopped.

The COVID-19 pandemic has indeed brought bad impacts and even threats to the world of education, but the pandemic if viewed from a different angle will be an opportunity. One of them that has a positive impact is accelerating digital transformation. With the pandemic, all systems and methods have switched to online and all-digital methods after previously using conventional systems, which inevitably have to learn technology and begin to transform. This is in accordance with Indonesia's efforts to welcome the industrial revolution 4.0 where all aspects of life cannot be separated from the touch of technology. The pandemic seems to be the door to the global industrial revolution. The development of the global Industrial revolution has been rolling since the 18th century which was marked by the invention of the steam engine with the start of mass production, better known as the 1.0 industrial revolution. in the 19–20 century with the discovery of the electric machine, the industrial revolution 2.0 began and then the 70s focused on the industrial revolution 3.0 with the discovery of computerized technology. Finally around 2010 developed intelligence engineering and IoT (Internet of Thing) [1].

Among the rolling of these developments, the main sign is the rolling of the development of science and technology. Developments in the world of education, especially in the dynamic field of technology, must continue to be observed given the rapid social changes, both in terms of positive and negative. The shift in educational methods and infrastructure in learning from traditional methods to modern methods is very much felt in these changes [2] even in the development of the world of education in the future, learning is no longer in the classrooms of Shahroom and Hussin. This encourages education stakeholders to be digitally literate, namely the ability to obtain, understand, and use information that comes from various sources in digital form.

The purpose of this study is to find out how digitalization of education during the pandemic is able to change the face of Indonesian education which was previously analog and conventional to switch to modernist digital means. So that it can produce a superior generation, technology literate and quality. The challenges of education and all the models that must be faced are things that must be considered for Indonesia. This is due to the slow shift in education in Indonesia from the old paradigm to the new paradigm. Based on the explanation above, it is absolutely necessary to digitize technology in the field of education in the industrial revolution era [3] which in its journey accelerated its transformation with the covid 19 pandemic. We will discuss the transformation of digitalization of education during the pandemic, the impact of digitalization, the challenges that will be faced and relevance.

2   Research Method

The method used in this study is a qualitative descriptive method that focuses on how the Digitizing Education in Indonesia After the Pandemic.

3   Results and Discussion

In the world of digital transformation education, there has been a shift in orientation and it has become a challenge in itself to produce graduates to be ready to face the era of disruption. Launching a 2016 McKinsey study that the impact of technology towards the industrial revolution 4.0 in the next five years there will be 52.6 million types of jobs will be extinct or at least experience a shift. For Indonesia, this is a challenge that must be faced considering its dense population and must prepare ready education outputs [4].

Changes in the world of education need to be made because every era changes. Changes need to be made along with the development of information technology [5]. From the effects of the changes that occur, in the world of education there have been various shifts of changes both in terms of methods and content that become teaching materials.

Way of thinking consists of how to be creative, find innovation, critical thinking, find problem solving, and decision making. Way of working consists of how to work in a team, how to collaborate. Act as a global and local citizen and take personal and social responsibility. Meanwhile, Skills for living in the world refers to skills based on information literacy, information and communication technology skills and the ability to work through social digital. From some of the expert opinions above, it seems that

the orientation of learning in the world of education must change which at first was only in the classroom theoretically, now the world of education is being challenged for project-based and problem-based learning because only in this way can increase students' criticality and creativity.

In a study on project-based learning and problem-based learning, it was shown that the learning provided an advantage for students to learn factually compared to learning in a more traditional classroom. [6] said that by studying the model method for a long time, it showed significant learning outcomes that were different from the results of traditional methods.

Times are constantly changing, making all lines of life adjust to the changes that are happening. The change from analog to digital media makes all public services easier. In the world of education this revolutionary change was felt during the pandemic. As previously explained, currently there have been four stages of the industrial revolution. As Professor Klaus Schwab in his book The Fourth Industrial Revolution asserts that today the world is at the beginning of a revolution that is fundamentally changing the way humans work and communicate with others [7].

The changes that occurred in the world of education that were felt most deeply were in the teaching and learning process which turned into PJJ (Distance Learning) due to the pandemic that had to keep a distance from one another. This PJJ change makes all teaching materials undergo a digitization process so that later they can be used in the digital process. Then came the terms Elearning, Online learning, Virtual learning and Digital Learning. The term is often used for the same and similar things, namely learning that uses or is based on information and communication technology, or technology-enhanced learning. However, there is an opinion that these terms are very different in terms of meaning. The term online learning is referred to as learning using online tools for learning which includes e-learning and blended learning. As mentioned earlier, this shift in learning methods may still be used post-pandemic as a medium that is relevant to changing times.

3.1 Challenges Faced in Digitization and Its Relevance

This digitization process will gradually turn into a digital transformation process due to the practicality and convenience it offers. New skills will emerge to replace the old ones that are obsolete. If all teachers and education stakeholders do not follow this changing trend, they will no longer be able to play an active role in various jobs. This vision is very relevant to education that prepares human resources for its era. In line with the times, learning outcomes for education in this era of the Industrial revolution, the way of working and the mindset of education managers and actors need to undergo a transformation. Seeing this phenomenon, it is inevitable that all teachers must get out of their 'comfort zone' to explore potential with various available technological infrastructure. Schools are demanded by their students to be of better quality in the future.

The change in the teaching and learning process that is shifted to all digital certainly experiences many challenges, it can even be called a "coercion" to all parties in the teaching and learning process, one of which is by maximizing the use of digital technology. The pandemic has reminded us that digitalization is an era that cannot be stopped.

Now or later, the use of digital devices with all their derivatives is a necessity, not only in the world of education, but in all fields. Teachers are "forced" to learn to compose presentations and educational video content. Students are "forced" to study presentations, educational videos from teachers, and school assignments based on computer file extensions. Parents are also "forced" to learn the operationalization and knick-knacks of online media, gadgets and software. These conditions ultimately succeeded in changing the ways of thinking, the ways of learning and the ways of behavior for all parties involved in the teaching and learning process.

It must be admitted, the digital era is a necessity. However, the digital era still needs to be balanced with the humanism side of KBM. The interaction between teachers and students, as well as students and their peers needs to be maintained. So that the teacher does not lose the feel of interaction. So that students do not lose social values formed from interactions at school. So that parents can still get guarantees that their children get the period and momentum in their education age as well as the moral-ethical values of the educators.

The first challenge for digitizing education is the availability of a good and reliable system. However, very few schools pay attention to this need, there are still many schools that have a mediocre system. Naturally, because the school management does not have the expertise and experience of information technology. On the other hand, the Ministry of Education and Culture does not have standardized information systems in schools. So it takes cooperation with third parties, either with universities or information technology companies to improve the capabilities and abilities of schools.

The second challenge, the availability of interesting and easy-to-understand content for students is not an easy task. It takes a teacher who is creative in the teaching and learning process, has good and interesting communication skills and is able to give a simple and short explanation. The longer the duration of the content, the easier it will be for students to get bored and focus on other things. In addition, the content will be better if the presentation process uses a local approach. The content for the same lessons for children in the village should be different from the content provided for children in the city. The delivery of material in content for children outside Java must also be different from that for children in Java.

The third challenge is the involvement of parents in the process of digitizing education. Efforts are needed from parents to ensure the discipline and independence of their children in the online learning process. Ironically, many parents are of the view that with the digitization of education, the role of parents is reduced or even eliminated altogether. Even though studying at home online is no different from the home schooling learning process, the only difference is the teaching and learning media used.

So that in implementing the digitalization of education, all stakeholders such as the government, school management, parents and students must pay attention to the three challenges above. If we implement it, then the digitalization of education is not only to follow trends but to become the backbone of national education to improve the quality of Indonesian humanresources, especially in border and remote areas. Your participation is very much needed, let's support the government and nearest schools with our involvement in the digitalization of national education.

4   Conclusion

The phenomenon of the Covid-19 pandemic has opened eyes to the whole world that change is inevitable. Especially the changes in the digital world which during this pandemic have penetrated the world of education, where everything uses digital means. Education as the main channel of change to meet the industrial revolution in the 21st century must undergo changes. This change is not only in the level of thought but is also realized in the form of learning and curriculum. The change from the traditional way to the modern direction, from the analog direction to the digital direction. The change can be started by revolutionizing the teachers who will bring change to the students.

Changes in orientation such as teaching students technology by using technology in teaching, learning to work together, collaboration, improving communication, cultivating creativity and innovation, teaching learning that is relevant to the real world, learning models to students, etc. If all education is ready to implement these changes, it will produce students and graduates who are ready to face a world full of digitalization and a different character in the future.

References

1. P. B. Trisanti, "Industrial Revolution 4.0 and the Challenges of Social Change," *Proc. Semateksos 3 "National Dev. Strateg. Facing Ind. Revolut.*, pp. 22–27., 2018.
2. Ngongo, "Education in the Digital Age," vol. Proceeding, p. 628, 2019.
3. S. &. Reflianto, "Information Technology-Based Education and Learning Challenges in the Industrial Revolution 4.0 Era. E-Tech: Technology," *Sci. J. Educ.*, vol. 6, 2., 2018.
4. M. (2018). Harahap, "The Industrial Revolution 4.0 And Its Influence On The Role Of Educators In The 21st Century In The World Of Education.," in *Proceedings of the National Seminar of the Faculty of Social Sciences, State University of Medan*, 2018, pp. 578–580.
5. G. Diknas, "pgdiknas," *pgdikdas kemdikbud*, 2020.
6. P. Trilling, Bernie and Hood, "Learning, Technology, and Education Reform In The Knowledge Age," https://www.wested.org/online_pubs, 1999.
7. K. Schwab, *The Fourth Industrial Revolution. World Economic Forum.* 2016.