



Possibility of Metaverse in Education: Opportunity and Threat

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Abstract

This research investigates the possibility of a Metaverse between an opportunity or a threat in education. This is library research by using data from the source material (literature written in article journals) on the topic and synthesizing it into a coherent interpretation that highlights key issues. The result analysis shows the opportunity of Metaverse includes 1) Metaverse will probably make all activities in education can later be carried out in a virtual world. 2) New experiences of learning become more real and meaningful, so the students' readiness is needed in applying Metaverse technology in education. 3) The teaching and learning process is regardless of time and space, so the processes are carried out in a wider and more active. The development of the technology of the Metaverse is essentially just a way, it cannot be used as the essence of life. The physical school/institutions and all the activities within it will also not be replaced by the Metaverse. Metaverse will only be a tool for the world of education to make services even better without having to eliminate everything in the real world. After all, the world of education aims to humanize humans, not virtualize humans. Along with the development of the Metaverse, this will have an opportunity and threat for humans. Therefore, we must be aware of the negative influence of Metaverse technology in education. This is a task for educators to have solutions for students to feel real learning. No technology can replace the role of the teacher.

Keywords: Education, Metaverse, Metaverse in Education

INTRODUCTION

Since Mark Zuckerberg declared the rebranding of Facebook Inc. being Meta, the conversation about the Metaverse arise. Many practitioners open discussions about the Metaverse, and ordinary people also wonder what the Metaverse is and what is its potential in the future. No exception in the world of education and academia, many studies discuss this Metaverse. According to Mark Zuckerberg, a Metaverse is a place where people who are on the internet can not only see but also feel they are in it (Nadella, 2018). In the Metaverse, the world of the internet feels like the real world through digital experiences. So, the creation of the Metaverse facilitated day-to-day human communication and interaction over the internet (Akour et al., 2022). The first person to introduce the term Metaverse was Neal Stephenson. He mentioned the term in his 1992 novel Snow Crash. In the novel, it is described that humans can enjoy a virtual world that is different from the real world. So basically, with the help of devices such as virtual reality (VR), magic gloves, and controllers, we will be brought into a three-dimensional virtual world. This makes us seem to leave the real world and enter into a fantasy.

The term Metaverse refers to a 3D virtual world inhabited by avatars of real people (Ng et al., 2021; Putra & Wayoi, 2022). The metaverse is a virtual world that is made as close as possible to the real world in the form of each avatar. This term does not have a universally accepted definition. Think of the Metaverse as the internet visualized in 3D. In short, the Metaverse is an endless virtual world that is interconnected. Where people can work, meet, and play using virtual reality headsets, augmented reality glasses, smartphone apps, and/or other devices. Metaverse is a design that combines the real world and the digital world. It is supported by Almarzouqi et al. (2022) that Metaverse is created by fusing virtually

upgraded physical and digital realities. In a broader sense, the Metaverse is a virtual space where people from all over the world can gather and communicate using virtual and augmented reality technologies.

In recent years, the Metaverse has received great attention from around the world with the development of associated technologies (Duan et al., 2021). Metaverse is an immersive 3D virtual environment, a true virtual artificial community in which avatars act as the user's alter ego and interact with each other (Lee, 2021). The metaverse is a virtual space for communicating with each other in a certain place in the virtual world (Sopiandi & Susanti, 2022). Farjami et al. (2011) state that Metaverse is a social networking service. It is defined as "a virtual world, which is a type of online community that frequently takes the shape of a computer-based simulated environment in which users may interact with one another as well as utilize and create things. The metaverse is a fictitious/virtual world made by humans in which we can do activities as in the real world but with technology and facilities that are much more sophisticated and more beautiful.

With not much understanding and its form which is also still evolving, it is rather difficult to explain what a Metaverse is, only slowly the concept is starting to be understood that the Metaverse is a fictitious/virtual world made by humans in which we can act like in the real world but with technology and facilities that are much more sophisticated and more beautiful. It is predicted that in the future humans will spend more time there. Considering that apart from convenience, there are also concerns when it becomes real. It could be that the real world that is used to become a daily activity will be quiet from all the hustle and bustle because everything will move to the fictional world. The streets that are usually dense with traffic flow will be seen as modest. Humans will be busy with their avatar activities and activities in the real world will be reduced (Shin, 2022). Sightings that can be seen in the real world, many people wearing Oculus glasses in places that are considered safe, looking like their hands are holding, clenching, pushing even seeming like punching, and occasionally screaming sounds because their whole mind is feeling the sensation of the virtual world, while the physical is in the real world.

In the future, the boundaries between the real world and the Metaverse world will become blurry, so comfortable that someone can forget that they are in cyberspace. It should be realized that the Metaverse is only a fictional world, don't let it dissolve. When we are physically sick, we still need care and treatment from a hospital or a real doctor, not an imaginary doctor, while in the virtual world if our avatar is damaged or even dies, we just replace it with a new avatar. In the image of the Metaverse, it is indeed tempting, we can go to a place far or near without having to leave the location from where we stand, just put on oculus glasses and then immediately slide to the destination, and so on. But, once again, the Metaverse is not the actual world; when we return to it, we will be confronted with the truth of how chaotic the real world is. This technology, like a knife, has two sides; it may be very harmful or very beneficial; it is up to people to respond intelligently, whether it is an opportunity or a threat of time that will prove it; after all, its shape is not final.

Metaverse will bring humans to a new sensation where we can experience living in a virtual world. In this virtual world, we can work, shop, play, and do many things that we have never imagined before. Imagine almost all physical activities and social interactions (study, play, meetings, discussions, shopping, work to be creative) can be done in a virtual world. Metaverse will probably make all activities in the world of education can later be carried out in a virtual world. Schools will be built in a virtual world, classes will be in a virtual world, learning is done virtually, and even school administration can also be done virtually. Humans are extraordinary, there is already a real world but still trying to create a virtual world. The question arises, is this progress or an exaggeration? Is this an opportunity or will it be a threat? This research is to investigate the possibility of a Metaverse between an opportunity or a threat in education.

METHOD

This type of research is library research. The literature study method is a series of activities regarding the methods of collecting library data, reading and taking notes, and managing materials study. In library research, researchers face to face with text or numeric data. Library data is 'ready to use (Zed, 2004). This means that researchers are dealing directly with source material that is already available in the library. General library data are secondary sources, so the researcher obtains materials second-hand'. Here, the researcher summarizes the theory and examines the study through the literature written on the topic and synthesizes it into a coherent interpretation that highlights key issues. The article search procedure is carried out on the Google Scholar page by typing the keywords Metaverse, and Education. Articles that were sought from international journals and national journals related to the topic being studied. Data analysis used a qualitative analysis of the Miles and Huberman model which includes data reduction, data analysis, and conclusion (Miles et al., 2013; Miles & Huberman, 1994).

FINDINGS AND DISCUSSION

Metaverse is a post-reality world, a continuous and enduring multiuser environment that combines physical reality with digital virtuality (Mystakidis, 2022). Metaverse is based on the convergence of technologies such as virtual reality (VR) and augmented reality (AR), which allow for multimodal interactions with virtual surroundings, digital objects, and people (AR). As a result, the Metaverse is a web of social, networked immersive experiences on multiuser platforms that are always available. It enables embodied user communication and dynamic interactions with digital things in real-time. It began as a web of virtual worlds between which avatars might navigate. Social, immersive VR systems that are compatible with massively multiplayer online video games, open game worlds, and AR collaborative settings are all part of the current Metaverse.

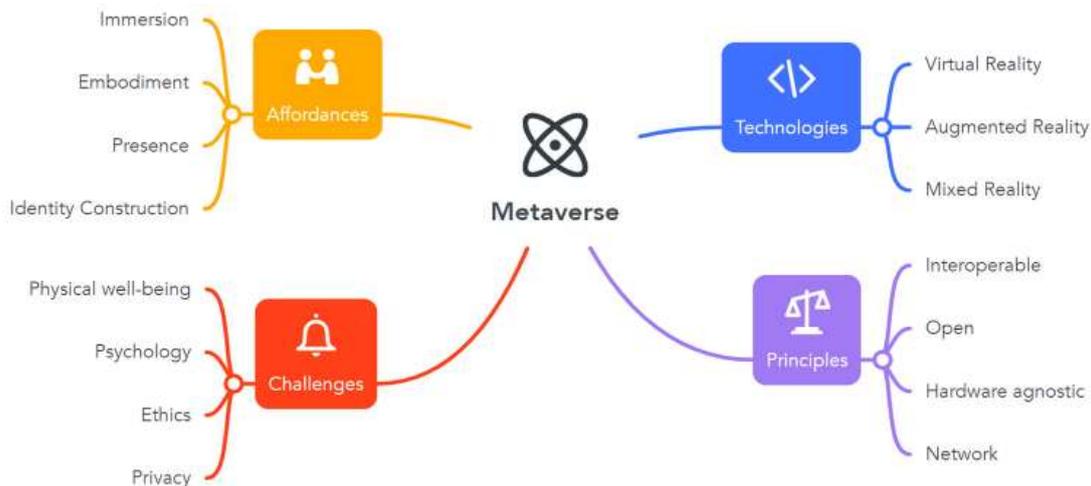


Figure 1: Metaverse Concept (Mystakidis, 2022)

The principal dimensions are depicted in Figure 1 above. In the context of Mixed-Reality (MR), however, it can bridge social media connectivity with the distinctive capabilities of VR and AR immersive technologies. If their interaction is unleashed creatively, it has the potential to transform many aspects of life, including education. The new Meta-education model, Metaverse-powered online distance education, can emerge to facilitate new formal and informal learning experiences with 3D virtual campus concepts (Kye et al., 2021). On the Metaverse, online learning will push the limits of social connections and informal learning. Physical presence in the classroom will no longer be considered a unique educational experience. Virtual meetings will be just as effective as face-to-face meetings due to telepresence, avatar body language, and facial expression conformity. Moreover, MR in the Metaverse can enable active mixed pedagogy to cultivate meaningful knowledge that is deeper and more durable (Mystakidis, 2022). Moreover, it can be a factor in the democratization of education, allowing equal participation across the globe without geographical limitations (Girvan, 2018).

Metaverse is a technological innovation where the technology is a three-dimensional virtual space. With Metaverse and other supporting technologies, it allows users to feel the sensation of being in a virtual environment in a real and clear way (Díaz et al., 2020). Metaverse itself is not only applied in video games or other digital entertainment but this Metaverse can also be applied in the world of education. Then what kind of education can we imagine in the future in the virtual world? Is it an opportunity or a threat in the world of education?

The Opportunity of Metaverse in Education

The world of education is currently used to the Covid-19 pandemic situation. The pandemic has had a major impact on learning methods in education. Students from hundreds of countries around the world, experience disruption in the teaching and learning process. Learning that used to be face-to-face between teachers and students, now has to be done online using various online platforms (Lee et al., 2022). With the virtual world concept promoted by Metaverse, online learning can be done more interactively. Metaverse provides support for online learning without compromising the learning experience at school or college. With the virtual world concept promoted by Metaverse, online learning can be done more interactively. Metaverse provides support for online learning without compromising the learning experience at school or college (Kim et al., 2022). The method of learning anywhere and anytime is an interesting concept that is liked by many parties. Time, space, and costs can be cut with the presence of technology.

There are positive impacts of Metaverse, for example, teachers who try to learn to use applications with only reckless capital, but the results felt by teachers are an increase in teacher competence in using applications, but on the other hand not all areas with affordable internet networks even have schools that carry out learning as it is. For example, schools/institutions with unaffordable internet access use a learning approach through gathering points and this process has been implemented during the Covid-19 pandemic.

The world of education cannot resist technological advances. Instead, we must take advantage of these technological advances as a tool to carry out positive activities. With the development of the Metaverse by giant technology companies, the world of education inevitably has to prepare itself to welcome this technology. The Covid-19 pandemic has had a major impact on learning methods in the world of education. Learning that used to meet face-to-face between educators and students now has to be done online. The digital world may play an important role in accelerating access to information related to learning materials, the digital world can also help students accelerate understanding because current learning resources are not only from teachers but many learning resources are accessed anywhere and anytime.

In the virtual/Metaverse world, school buildings with all the facilities can be built more magnificent, more beautiful, and more complete, of course, this will make the atmosphere more comfortable and enjoyable, but the bond between teachers and students in the real world can be reduced because they only meet in the Metaverse with their respective avatar forms, while in the real world they rarely or even never meet. According to Dewantara et al. (2022), The advantages of the Metaverse are: providing a more accessible digital way of communicating by providing a new aspect. Applications in education can improve better quality of education with experience unlimited. There are two open Metaverse challenges for the world of education, including 1) New experiences in the world of education. So that the readiness of students is needed in applying Metaverse technology in the world of education. 2) The learning and teaching process is carried out regardless of time and space. All learning processes are carried out in a wider and more active area as a form of influence of Metaverse technology for the world of education. In the Metaverse world, the learning experience becomes more real and meaningful.

In History lessons, teachers can take their students to places of historical value both at home and abroad and even out of space easily, unlike in the real world. Students can see Borobudur Temple, Prambanan Temple, and other tourist destinations of Indonesia's natural beauty. The students can be given history subject matter through direct visuals to see historical objects in museums, then later to learn history, it is enough to enter the virtual world by visiting a virtual three-dimensional museum. In Biology lessons, when we practice studying animal organs such as rabbits, cats, frogs, fish, and so on. We can use virtual animals without having to dissect real animals. In astronomy lessons, we can see the circulation of the planets which will all look real, and see mountains erupt in front of our eyes. In Geography lessons, teachers can invite students to see volcanic eruptions, in History lessons, there is no need to take students to museums in the real world. In Art lessons, we can join a music concert with the singer, just install the application which will be available later. In astronomy lessons, we can see the circulation of the planets which will all look real, and see mountains erupt in front of our eyes.

Metaverse provides more immersive experiences and a more participatory learning experience for students in learning and educational contexts. The world of education will certainly welcome the presence of the Metaverse because it will have an impact on the world of education. First, the learning process will be more fun and interesting. This will also be a solution to the obstacles experienced by our current students who feel that the distance learning process is not fun and boring. Metaverse will make things more real. Students no longer feel like they are learning on their own but they will feel a touch of learning like being in a real class even though they are at home. Second, practical lessons can be done more realistically. Practice becomes a problem in itself if we carry out the online learning process because it is difficult for students to access equipment and practical equipment in the laboratory. This means that there are limitations in carrying out practice for students, and with the presence of this technology, this will be overcome because they can practice without having to go to the laboratory, just by using Oculus glasses they can practice. Third, learning and becoming a producer of knowledge can be done as early as possible. Students can learn and produce new knowledge as early as possible without any more limitations that can hinder them such as classroom walls and limited time in learning. They will have a class that is as wide as this world and more time in exploring the knowledge they want to master so that they can feel the real freedom of learning and that must be fun for them. Fourth, learning resources will be more abundant and growing. The presence of technology will increasingly develop new knowledge and of course new technology. Metaverse will also give birth to learning resources that are increasingly varied in carrying out the learning process, the more sources of knowledge we will get, including sources of information that we can get to develop our competencies. Fifth, schools are no longer just buildings. The presence of the Metaverse will also bring changes to the physical form of educational institutions in the

world, there will be many virtual schools that do not require large land and buildings to establish an educational institution. Educational institutions, most of which cannot be reached due to distance and time constraints and very large costs.

The Threat of Metaverse in Education

We can connect Metaverse with education, what kind of education can we imagine in the future in the virtual world? With a picture like the one above, several possibilities will happen. Educators must adapt to the current situation so that even though the teaching and learning process in schools/institutions is less efficient, they still perform well. Education which was originally carried out face-to-face in class has been shifted to an online learning process. Some schools teach daily through online learning applications because the resources available to schools that require teachers and students to teach both in social media groups and in class are limited. This is what causes poor learning performance, especially the lack of literacy between teachers and students. In the context of student-centered learning, the Metaverse will influence the world of education because no technology can replace the role of the teacher. Students need a direct touch from the teacher not through the digital world.

The existence of real school buildings has reduced its role and may even be no longer needed because teachers and their students do not have to be present in real schools to carry out teaching and learning activities, everything can be done virtually, thus the real building is just a formality. As technology progresses to create new immersive and imagined worlds, so must how we educate children and train instructors to meet these new opportunities (Hirsh-Pasek et al., 2022). In the virtual/metaverse world, school buildings with all their facilities can be built more magnificent, more beautiful, and more complete, of course, this will make the atmosphere more comfortable and enjoyable, but the bond between teachers and students in the real world can be reduced because they only meet in the Metaverse with their respective avatar forms, while in the real world they rarely or even never meet.

Apart from teaching and learning activities, other matters such as teacher administration, financial administration, supervision, promotion files, and so on can be done in the Metaverse, but whether all of this can later be implemented in our country is still a question mark, which is clear for now all are still limited in wishful thinking. If all activities in the world of education are carried out virtually there will be negative impacts that can be felt, namely the loss of social warmth because they do not interact with humans directly. Then educators do not know their students directly because learning is only a formality.

The student can be more comfortable in the meta world than in the real world or vice versa he will have a different feeling when he sees the environment around him that is not what he expected when he was in the virtual world and maybe other problems that we cannot rule out. from the influence of technology, which means that educators are still needed there in directing and facilitating students in learning. Although there will be many virtual teachers from Metaverse technology, we must not forget that the real world will not be as beautiful as the virtual world because it requires a balance in educating our successor generations during the development of an increasingly powerful and extraordinary technological world (Park & Kim, 2022).

According to Dewantara et al. (2022), the disadvantages of Metaverse are: 1) Requires high technology consumption because metaverse produces complex graphics and high quality. 2) Access to get tools that support Metaverse costs a lot of money. 3) Possibility of social change! and culture because the Metaverse is not limited. 4) Relevance and metaverse are still not quite like is the virtual world necessary or not in communication and activity. Seeing the existing developments, it is very possible. Later metaverse technology is used in the world of education. Regarding school readiness, of course, it will be an analysis of each in its application. At least, discourse Metaverse has opened a new chapter of technology integration in the world of education. The current teacher must develop their mastery of technology by looking at the advantages and disadvantages that are there to maximize effectiveness and minimize threats to participate in the use of technology.

The Effect of Metaverse Technology on Education

The metaverse will have an impact on various aspects of human life, including the world of education. However, the world of education will not be separated from the world of technology, good education will go hand in hand with technological developments as we already feel today. Ning et al. (2021) state that the Metaverse is a new type of internet application and social form that combines several modern technologies. It possesses multi-technology, sociality, and hyper-spatiotemporal properties. Metaverse, which combines two extraordinary technologies, Augmented Reality (AR) and Virtual Reality (VR), will have a tremendous impact on the world of education. It began several years ago, with the emergence of several applications that use augmented reality to support the learning process, such as

applications that, if we scan an image issued by the application, the image will move in three dimensions and appear to be - as if it were real in front of students.

The term 'metaverse' has subsequently been used somewhat loosely to describe a range of virtual world-type technologies (Knox, 2022). We may already feel the influence of Metaverse technology in the world of education and work. The world of education that we have known and been close to cannot be separated from the influence of existing technology. Such as learning media and gadgets or other devices that facilitate work and learning for humans. It is supported by Wang et al. (2022) that Metaverse, as an evolving paradigm of the next-generation Internet, aims to build a fully immersive, hyper spatiotemporal, and self-sustaining virtual shared space for humans to play, work, and socialize. The world of education is not immune to the influence of technology. Even the world of education must synergize with the latest technology to produce higher quality education.

The use of Metaverse technology has begun to be applied to several universities, corporate offices, charities, and the offices of the world's giant technology companies, namely Facebook. The phenomenon of using Metaverse makes Facebook interested in the development and application of Metaverse technology in its applications and companies in the future. The positive thing about the existence of Metaverse technology in the world of education is that it helps the quality of education to be better and more modern. A student and student can not only understand a theory. But he can also feel the direct experience. By visiting and in direct contact with the objects they learn using virtual reality.

Metaverse technology is getting the attention of major international companies. In the future, the use of Metaverse technology will be more and more needed by people. The use of Metaverse technology will change the world. The two-dimensional world that we have known so far is starting to be replaced with a virtual three-dimensional world. Even now this technology is penetrating a more modern world of education. The influence of Metaverse technology on the world of education in today's millennial era will be very large. This especially will change the face of methods, techniques, methods, and systems of learning in the world of education. But humans cannot resist the advances in Metaverse technology. Several universities in the world have started using Metaverse technology in education. Such as Aman Arab University, BrainSTEM University, CEU University, Khon Kaen University, University of Nigeria, and the University of Nicosia. Meanwhile, in Indonesia, universities that have started using Metaverse technology are Muhammadiyah University Prof Dr. Hamka (UHAMKA). However, the development of Metaverse technology at several universities in Indonesia requires very large development costs with the risk of positive and negative impacts.

Several latest previous studies have been conducted related to the Metaverse in education as stated in the table below:

Table 1. Several Previous Studies Related to Metaverse in Education

No	Research Title	Review of Research Result
1.	Jeon & Jung (2021)	This article focuses on the Metaverse based on the connection between the virtual and real worlds, and they investigated the feasibility of deploying a Metaverse-based platform for education. The Metaverse-based platform was designed with the online education ecosystem in mind, which means that not just online teaching and learning but also holistic educational activities like learning, communication, and empathy are carried out within the Metaverse. Learners may experience the presence of learning on this Metaverse platform, and learning motivation and immersion can be fostered. Furthermore, self-directed learning based on the autonomy of spatial mobility is feasible. Although the Metaverse platform has technological and ethical constraints, it is better to focus on the interaction between learners in the Metaverse environment rather than high expectations.
2.	Kye et al. (2021)	This article expects The metaverse has the potential to transform our daily lives and economy in ways that go beyond games and entertainment. The Metaverse has boundless potential as a new social communication environment. Instructors should carefully study how students perceive the Metaverse in the future; teachers should build classes for students to solve issues or accomplish projects collectively and creatively, and educational Metaverse platforms that prohibit the exploitation of student data should be established.
3.	Indarta et al. (2022)	This article states that The popularity of Metaverse has peaked in recent months, and the use of digital learning media based on augmented reality and virtual reality has accelerated the adoption of Metaverse technology in the field of education. The Metaverse is said to be capable of overcoming educational obstacles such as limited class capacity owing to the epidemic, limited distance and time to join class, and

		others. The notion of a virtual environment allows for more participatory online learning without sacrificing the student learning experience. The metaverse is expected to permeate many aspects of human existence within the next 10-15 years.
4.	Hwang & Chien (2022)	This article states that Metaverse has been identified as one of today's most promising technologies. The utilization of the Metaverse for educational reasons, on the other hand, is rarely considered. Most instructors may be ignorant of the Metaverse's characteristics, let alone the potential uses of this developing technology. They want to present a precise description of the Metaverse in this position paper. The Metaverse's potential uses and research challenges in educational contexts are also discussed. In addition, the responsibilities of AI in Metaverse and Metaverse-based education are examined. It is intended that scholars in computer science and educational technology would have a comprehensive understanding of what the Metaverse is and how it might be utilized for educational purposes.
5.	Suh & Ahn (2022)	This article states the experiences and attitudes of learners in the Metaverse from a constructivist viewpoint to establish how closely tied this virtual environment is to the lives of primary school children. This study looked at how students are increasingly becoming the focus of new instructional tools. A survey of 336 primary school kids in Korea was undertaken, with 18 items used to measure each aspect of the Metaverse. The findings found that, on average, 97.9 percent of primary school kids have encountered the Metaverse, with 95.5 percent believing it was directly tied to their daily lives.
6.	Hwang (2022)	This study implies that when students in a metaverse space participate in the interactive learning process and environment using an avatar that projects oneself, it may be a successful educational platform that benefits from gamification and edutainment. A metaverse environment also allows for existential encounters and hands-on experiences, which increases the amount of 3D learning immersion. It has the potential to solve the drawbacks of 2D internet live streaming technologies such as Zoom or Webex.

Based on the previous research that has been carried out on Metaverse in the world of education, we can understand in general terms that Metaverse itself has a fairly influential opportunity in the process of implementing the world of education. Audiovisual-based educational technology is one of the most widespread applications of Metaverse and many have implications for learning, as in practicum-based education, it is not enough just to read and see but also to take action to feel it. As learning becomes more organized and better if it is directly involved in the process and direct experience or simulation.

The statement above is in line with Kye et al. (2021) that Metaverse has the potential to alter our daily lives and economy in ways that are beyond the realm of entertainment. As a new venue for social communication, the Metaverse possesses infinite possibilities. Future tasks for educational use of the Metaverse include: teachers carefully analyzing how students understand the Metaverse; teachers designing classes for students to solve problems or complete projects collaboratively and creatively; and the developing of educational Metaverse platforms that prevent the misuse of student data. It is also supported by Jeon & Jung (2021) that Metaverse is related to the virtual and real worlds, and they studied the viability of implementing a Metaverse-based platform for education. The Metaverse-based platform was created with the online education ecosystem in mind, which means that not simply online teaching and learning but also holistic educational activities like learning, communication, and empathy are carried out within the Metaverse. Learners may experience the presence of learning on this Metaverse platform, and learning motivation and immersion may be encouraged. Furthermore, self-directed learning based on the autonomy of spatial movement is achievable. Although the Metaverse platform has technological and ethical limits, it is better to focus on the interaction between learners in the Metaverse environment rather than excessive expectations.

If viewed from the opportunity, the implications of the Metaverse in education will be able to present a new and challenging atmosphere in learning. The existence of this Metaverse can optimize technology and educational media that have been used today to be more effective again. In addition, the learning experience gained by the students will further assist them in stimulating the development of soft skills and fostering a better self-perception in students. However, Metaverse is still considered to be less effective if applied in online learning, due to the lack of interaction between educators and students during the learning process.

Metaverse itself still has weaknesses and challenges in the world of education. The nature of the Metaverse which provides unlimited space or is often called borderless can trigger engagement that tends to be greater, than if the Metaverse is applied in the world of education, it must be ready to face wider

international engagement. Another challenge of Metaverse is the socio-economic situation and condition of the community, not all people have a stable income and income so not all of them can access Metaverse technology. Therefore, if habituation is applied to this new technology, the implementation of this technology will present a new atmosphere and can optimize the quality of education in the future.

Responding to the challenges of this era has forced the world of education in Indonesia to be prepared to face the presence of Metaverse technology. Steps that can be taken are to accept the presence of the world of Metaverse technology in the world of education in Indonesia to develop a better educational climate in the country. Considering that the Metaverse is an open challenge for the real world of education. With the availability of human resources and infrastructure, the Metaverse era in education will run smoothly and develop positively. At present, all human activities have started using Metaverse technology such as school, college, shopping, work, socializing, and other jobs. Some shops and companies equip it with Metaverse technology. What characterizes the Metaverse era is a three-dimensional virtual community that uses an avatar icon. However, the presence of Metaverse technology in the world of education will be useless and in vain if it is not equipped with the existing infrastructure and qualified human resources. Metaverse technology is the right golden opportunity to develop the world of education in a better and more modern direction. The development of Metaverse technology in education must also pay attention to its negative impacts. The negative impact of the Metaverse must be eliminated or minimized. Similar to the adverse effects of using internet technology, the Metaverse will make the warmth that can be felt in humans disappear instantly.

Education and technology are two things that are interrelated with each other and build a pattern of cause and effect. Education can influence the development of technology. And vice versa, technology will also affect the education system. Slowly but surely, the world is experiencing very fast development, especially in the fields of education and technology. Human civilization also changes in each period. Along with increasing technologies, mankind is also experiencing a more advanced life transition and this is a challenge for all mankind. Like it or not, humans must be prepared for all the consequences caused by technological developments. This readiness must be manifested in life programs, especially in the world of education. The world of education is the main capital in the development of other lives. The world of education can provide and provide research space (research) for students to continue to develop advanced and beneficial innovations for civilization, namely technology.

Education should not regard this Metaverse as just a fantasy, because technology is not impossible for students who have a strong curiosity. The educational background universally has goals such as "guiding, directing, leading out" students and has a strong essence. Namely, being able to make things come alive with full self-control that is carried out in every process of educational activities. Because with education, we can humanize humans. The peak is understanding the differences which can give harmony in life. This certainly makes the world of education a big challenge to welcome the Metaverse era because technological developments also have an impact on losing the values and cultural heritage possessed by humans.

The rapid development of technology has an impact on the loss of value and cultural heritage in humans. Human life tends to be pragmatic and egocentric. With this, it becomes a big challenge for the world of education to welcome the Metaverse era. For the sake of harmonization and alignment of the life of reality with technology, of course, these students need something to overcome these dynamics. "Science" with knowledge exploration that can be done independently, both from formal and non-formal education. The importance of knowledge must be explored or owned by these students so that later they can bring them ready to face and welcome the Metaverse era, but not by leaving the essence of education itself. The need for humanist and equitable education to raise and bring students up from moral and material colonialism amid rapid technological developments.

In the future, the boundaries between the real world and the Metaverse world will become blurry, so comfortable that someone can forget that they are in cyberspace. It should be realized that the Metaverse is only a fictional world, don't let it dissolve. When we are physically sick, we still need care and treatment from a hospital or a real doctor, not an imaginary doctor, while in the virtual world if our avatar is damaged or even dies, we just replace it with a new avatar. Interestingly, the Metaverse is indeed tempting, we can go to a place far or near without having to leave the location from where we stand, just put on oculus glasses and then immediately slide to the destination, and so on. But once again the Metaverse is not the real world, when you return to the real world you will be faced with the reality of how messy the real world is. Like a knife, this technology has two sides, it can be very dangerous or vice versa, it can be very useful, it is humans who have to be smart in responding, whether it is an opportunity or whether it is a threat of time that will prove it, after all until now its form is not final.

Metaverse requires internet technology that is fast and smooth, the problem of the cost will also be an obstacle because it is not cheap. Based on the experience of yesterday's epidemic, online learning is sometimes delayed by sluggish networks or even those who can not receive a signal, and not all parents

can afford to purchase cell phones for their children. Technology is constantly evolving and the Metaverse is slowly coming to life Especially for gen-z who tend to prefer a digitized environment so Metaverse has the opportunity to turn education into virtual. With the continuous development of technology, education must also follow these development trends. As a technology that provides an imaginary world and virtual reality, the opportunities for Metaverse to be used for education are enormous. When the daily lives of young people, even small children, have been involved in the digital world, education has begun to gain, not completely using traditional methods. Metaverse can exist to help schools and universities to become attractive platforms for the younger generation.

By using Metaverse, education can be done anywhere and in any form. For example, a pandemic or other natural disaster hinders effective school activities and causes monotonous and boring learning through zoom or video calls. Metaverse offers various features that can be used such as building your own space according to your wishes. Teachers or educators can build classes according to their wishes that are more attractive to students. In addition, the class can change at any time. Not only that, Metaverse learning can be deeper by showing simulations related to learning. For example, like history subjects, Metaverse can provide virtual tours of history from time to time where students can see real things and not just understand the descriptions in textbooks. Although it has advantages for the development of education, there is still a negative side, namely the emergence of addiction to virtual reality. Students will spend their time in the virtual world and not pay attention to the real world. Of course, there should be restrictions on its use. Metaverse can be a support for education so that students can deepen their learning with real and more interesting visuals.

The development of technology, however, we can not prevent it. We just need to be wise in using technology so that it brings the greatest benefit to human life, especially in the field of education. Even in the early 2000s, the world of education was so terrified that the internet would harm it that cellphones were prohibited things for students, and anybody found with one was subject to confiscation. Now, after a decade, all the technology that once seemed so terrible can be used in the world of education. The world of education cannot prohibit the progress of the times, the world of education can only make regulations on how to use technology in a positive direction. Metaverse is essentially just a way, it cannot be used as the essence of life. In the author's view, the physical school and all the activities in it will also not be replaced by the Metaverse. Metaverse will only be a tool for the world of education to make services even better without having to eliminate everything in the real world. After all, the world of education aims to humanize humans, not virtualize humans.

However, in implementing character education it cannot go through virtual, teachers must carry out direct learning with students at school. The Ministry of Education and Culture has provided space for educational units to carry out limited face-to-face learning. Thus the conditions provide space for teachers to monitor student progress directly at school. Based on the learning experience that was carried out during two years, many students lost their direction and purpose. Students do not feel a direct touch from the teacher and the teacher also cannot monitor student development in terms of mental development and enthusiasm for learning. Metaverse is indeed good, but the world of education has not been effective in implementing online learning because of the many shortcomings or obstacles faced by teachers and students. However, from the parent's point of view, many students need parental assistance during their studies, so it is difficult to manage working hours.

CONCLUSION

With the development of the Metaverse by giant technology companies, the world of education inevitably has to prepare itself to welcome this technology. Metaverse will have a positive impact on the world of education. Because this approach allows teachers and students to use their time efficiently to conduct education. Metaverse will probably make all activities in the world of education can later be carried out in a virtual world. Schools will be built in a virtual world, classes will be in a virtual world, learning is done virtually, and even school administration can be done virtually. Metaverse allows us to do anything without having to meet in person. If this happens, it will certainly be a disruption to today's world of education. Metaverse will eliminate the social warmth that should be felt when humans interact with other humans directly. After all, the virtual world is not the real world. The real world is actually where we live right now on earth, not in the Metaverse. It could be that a teacher later will never know directly the students he has taught for months. It could be that learning is just a formality without making humans into real humans. However, the negative impact is that many students are economically disadvantaged, so their academic performance is poor due to a lack of classes. This is a task that must have the best solution for students to feel real learning.

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