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Analysis of the Implementation of Metaverse Technology as a Media for Socializing Religious Moderation with a Qualitative Approach At the Palembang Religious Education and Training Center

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Abstract. *This study aims to analyze the implementation of Metaverse technology as a medium for socializing religious moderation at the Palembang Religious Education and Training Center. Using a qualitative approach, this research explores how Metaverse can facilitate the dissemination of religious moderation values and its potential in improving the understanding of balanced, tolerant, and inclusive religious practices among participants. Data was collected through interviews, observations, and document analysis. The research findings show that Metaverse offers a dynamic and immersive platform to deliver training and discussions on religious moderation, allowing participants to interact more deeply with the material presented. However, challenges such as limited access to technology and understanding of the virtual environment were also found. This research highlights the need for further adaptation and support to maximize the effectiveness of this technology in building religious moderation.*

Keywords: *Metaverse, Moderation, Religious, Implementation*

1. INTRODUCTION

According to Lukman Hakim Saefudin, Religious Moderation is an effort to try to make us as religious people understand the teachings of religion, if we practice the teachings of religion, do not overdo it, do not exceed the limits because excessive and exceeding the limits are said to be extreme, so in order not to become extreme, moderation is needed. Through Presidential Regulation 58 of 2023 concerning the strengthening of religious moderation, it becomes the basis for every government institution, both central and regional, to organize the strengthening of religious moderation in a planned, systematic, coordinative, collaborative and sustainable manner. This regulation is refined by Minister of Religion Regulation Number 3 of 2024 concerning Procedures for Coordination, Monitoring, Evaluation, and Reporting on the Implementation of Strengthening Religious Moderation (Suyitno, 2024).

Religious Training Center Palembang is one of the Technical Implementation Units under the Religious Moderation and Human Resources Development Agency which is tasked with developing the competence of Ministry of Religion employees in the provinces of South Sumatra, Bengkulu and Bangka Belitung Islands. As a training and development center, the Palembang Religious Education and Training Center is also mandatory as a

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driver of the religious moderation program. Therefore, Palembang Religious Education and Training Center utilizes and develops information technology to support various learning and training activities to strengthen religious moderation.

Efforts to socialize religious moderation still face various obstacles. Conventional approaches, such as seminars, face-to-face training, or printed publications, are often less effective in reaching the younger generation who are more familiar with digital technology. In addition, the delivery of religious moderation messages is often hampered by the limited appeal of traditional methods, resulting in messages not reaching a wider audience optimally. One of the current technologies that can be used as a medium for socialization of strengthening religious moderation is metaverse technology.

The ongoing development of the metaverse in Indonesia is currently an interesting phenomenon that deserves to be the object of descriptive qualitative research. This fact arises because the metaverse era in the three-dimensional virtual world where humans inhabit the environment with authenticity (Syahrul & Baidrus, 2023). Overall, the metaverse provides convenience for individuals for various activities, including fully socializing with other metaverse users. One of the metaverse platforms in Indonesia is "Jagat Nusantara" which was officially launched by President Joko Widodo in 2020.

The purpose of this research is how the process of utilizing existing metaverse technology can be used as a medium for socializing the strengthening of religious moderation using a qualitative approach.

2. THEORETICAL STUDY

Moderation comes from the Latin moderâtio, which means balance (neither excess nor deficiency). The word implies self-control of excess and deficiency. In the Big Indonesian Dictionary, the word moderation contains two meanings, namely 1. Reduction of violence, and 2. Avoidance of extremes, while the word moderate is always avoiding extreme behavior and tending towards the dimensions of the middle way. According to Lukman Hakim Saifuddin, a moderate person is someone who is reasonable, mediocre, and not extreme. He added that in English, the word moderation is often used in the sense of average, core, standard, or non-aligned. In general, moderation means prioritizing balance in terms of beliefs, morals, and character, both when treating others as individuals, and when dealing with state institutions (Nurdin. F, 2021).

The system is a group of elements that are closely related to one another, which function together to achieve certain goals while information is Information is data that has

been classified or processed or interpreted for use in the decision-making process (Sutabri, 2012). it takes an information system of the present or future technology to socialize religious moderation programs, the technology is commonly referred to as the metaverse world.

Metaverse comes from a combination of two words: “meta” and ‘universe’. Meta comes from Greek which means “beyond” or “beyond.”. “Universe” means ‘universe’. So, overall, “metaverse” can be interpreted as “a universe that transcends” or “a universe beyond” the physical world, describing a multi-layered virtual world where digital interactions and experiences occur.Metaverse is a digital technology capable of creating a 3D virtual world by utilizing Augmented Reality (AR) and Virtual Reality (VR) technology, where users can seemingly interact in a real virtual world (Kurniawan & Sutabri, 2024).

The metaverse refers to a virtual world consisting of digitized spaces and objects inhabited by user avatars. The concept has come a long way from its beginnings as a science fiction idea to an increasingly tangible technological reality. The history of the Metaverse began with early representations in science fiction books such as “Snow Crash” by Neal Stephenson and “Ready Player One” by Ernest Cline. The Metaverse will be the first mass media platform to support and provide a living environment for all types of media in a 3D interactive digital environment (Sutabri, 2024).

The first significant development was Second Life, a virtual platform that allows users to interact and create content in a virtual environment. With the advancement of technology and the popularity of VR (Virtual Reality) and AR (Augmented Reality), the concept of Metaverse is getting closer to reality. Major technology companies such as Meta (formerly Facebook), Google, and Microsoft are actively developing Metaverse platforms and technologies. In the Metaverse, users can interact in a virtual environment that approximates the real-world experience, performing social, business, and entertainment activities such as playing games, attending concerts, or working (Ulimas & et al., 2024).

Metaverse in education is a virtual world that blends VR and AR elements to create an interactive and immersive learning environment. The metaverse has the potential to revolutionize education by providing more immersive and engaging learning experiences, such as laboratory simulations and virtual history tours. Comprehension of material, and the ability to apply knowledge in real life are key indicators of learning quality. The Metaverse, through its ability to create interactive learning environments, can increase

student engagement and understanding. The Metaverse has great potential to improve the quality of learning by providing immersive, collaborative and inclusive learning experiences. However, to maximize its benefits, it is necessary to overcome challenges related to infrastructure, teachers' technological skills and technical issues. With the right support, metaverse can be an effective tool in education in the future (Sutabri & et al, 2024).

Qualitative descriptive research. According to Sugiyono (2005), descriptive methods are methods used to describe or analyze a research result, but are not used to draw broader conclusions. Meanwhile, according to qualitative research, it is a type of research that has systematic, planned and structured specifications from the beginning to research planning to the implementation stage. In addition, qualitative descriptive research does not suggest how to treat, manipulate, or modify the variables under study but only describes a condition as it is. The only treatment offered is research, which is carried out through observations, interviews and notes (Sutabri & et al, 2024).

3. METHODOLOGY

The research method used in this article is a qualitative descriptive study with a literature research approach. Qualitative descriptive research aims to describe, explain, and explain in detail the problems studied by learning as much as possible about an event or object under study (Sugiyono, 2016). The descriptive qualitative research design was chosen to describe the potential of various positive and negative aspects of Metaverse technology that adapts Augmented Reality and Virtual Reality as interactive educational media, as well as analyze the application of Metaverse media from a design perspective. This research uses a library research method approach, where this method is a descriptive research method by collecting and analyzing data from journals or articles related to the problem or object under study (Endarto & Martadi, 2022).

Figure 1. Qualitative Research Flow Design
Source : Nick Jain ideascale.com

The first step, the author collects data by means of literature studies through written documents, images, and electronic documents related to Metaverse and internet media. Sources of articles, scientific journals, and the latest news become material for observation and analysis of the concept of Metaverse based on AR and VR technology as the latest interactive educational media. Furthermore, this article will analyze examples of AR and VR applications as educational media which can then be used as material for analyzing the role of designers in welcoming the new media Metaverse.

Data analysis techniques using the Miles and Huberman interactive model were used for data analysis in this study. Miles and Huberman explained that the analysis consists of three sequences: organizing data, presenting data, and drawing conclusions or testing (Zulfirman. R, 2022).

At the data organization stage, data sources from journals, articles, documents, electronic documents, and other sources were selected and summarized. The compilation of data on the use of Metaverse and the development of educational media will be used as material for data presentation. In the data reduction process, the author selects basic data, focuses on important data, and looks for themes and patterns. The summarized data provides a complete picture of the research questions, making it easier for further data collection.

The next stage is data presentation. Information and data are presented to support the conclusion drawing stage. The data obtained will be analyzed based on the understanding obtained in accordance with the facts and without engineering or experimentation. All information obtained will be combined until the phenomenon or object of research can be seen in depth until a conclusion is formed. Then, the concept of Metaverse in the socialization of religious moderation programs will be summarized and presented again.

The last stage in the Miles and Huberman Interactive Analysis Model method is conclusion drawing or verification. After going through the data collection process, the author began to look for the meaning of Metaverse, the development of Metaverse implementation, the development of Metaverse as a socialization media and educational media, to review research or research on the use of digital technology, especially Augmented Reality and Virtual Reality through various sites and journals. The next step is to conclude the potential of Metaverse as an interactive educational media. The conclusions found in this article are temporary and can change along with the development of the object of research while analyzing the application of Metaverse media as a socialization media for strengthening religious moderation programs.

4. RESULTS AND DISCUSSION

After observing literature studies from various sources of articles, scientific journals, and the latest news about the importance of diverse moderation programs and also analysis of the Metaverse concept in the world of education and training. Based on the results of the analysis carried out, many scientific articles discuss the development and utilization of metaverse in the world of education and also make metaverse media as learning media. Data from the search results of articles on the use and utilization of metaverse as a learning media can be seen in the following table.

Table 1. Article Review Results

No	Judul Jurnal	Hasil Review
1	Implementation of Metaverse Technology with Qualitative Methods at Man Insan Cendekia Oki (Cipto & Tata Sutbari, 2024)	Metaverse technology is considered to enhance student interaction, participation and learning experiences in an immersive and collaborative manner. In addition, the metaverse enables wider access to learning resources and supports the development of digital skills relevant in the modern era. However, the article also realistically identifies challenges, namely inadequate infrastructure and the need for teacher training to optimize the application of these technologies. With the incorporation of AR and VR technologies, learning can become more effective, efficient, and engaging, potentially improving the quality of education in Indonesia. This article emphasizes the importance of strategic efforts in overcoming barriers to maximize the benefits of the metaverse.
2	Implementation of Metaverse in the Learning Process (Ulung Wira Yuda et al., 2024)	The metaverse has great potential in enhancing a more interactive, engaging and inclusive learning experience. With immersive virtual environments, students can understand concepts practically and collaborate across geographical locations. The metaverse also supports inclusivity and flexibility, providing broader educational access and individualized needs. Challenges such as security, privacy, ethics, as well as traditional educational values remain a concern. Overall, the metaverse offers opportunities for innovation for education in the future, although its implementation requires a careful and strategic approach.
3	Developing Metaverse-based Virtual Learning Methods to Improve Learning Quality (Shintia et al., 2024)	The potential of metaverse in supporting the vision of Merdeka Belajar Kampus Merdeka (MBKM) through flexible, innovative, and student-centered learning. Metaverse offers immersive experiences, such as virtual simulation and collaboration, that enhance student engagement, understanding, and social skills, while supporting inclusivity for students with physical or geographic limitations. However, challenges such as expensive infrastructure, network latency, data security,

		curriculum adaptation, and educator training are major concerns. With support from various parties, metaverse can improve the quality of education, support cross-disciplinary learning, and prepare students for global challenges according to the MBKM principles.
4	Metaverse Learning Media to Improve the Quality of Education (Rizky Aditya et al., 2024)	The use of metaverse in education has great potential to improve the quality of learning by creating innovative and interactive virtual learning environments. The metaverse enables the application of technologies such as augmented reality (AR) and learning games that can increase student engagement and smoothen the interaction between educators and learners. For successful implementation, it is recommended that teachers develop creative teaching materials, students and educators hone technology skills, and the metaverse is integrated in teaching. In addition, evaluation and testing need to be done to ensure its effectiveness. While it offers many benefits, the use of the metaverse should be mindful of ethical challenges and the availability of adequate resources.
5	Socialization of the Use of Virtual Reality and Augmented Reality Technology in Learning to Welcome the Metaverse Era (Sarah Inayah et al., 2022)	This socialization activity is carried out online with the aim of providing guidance and education to prospective teacher students regarding the use of virtual reality and augmented reality technology in learning. Activities are carried out in stages: survey, socialization, question and answer and evaluation. The selection of topics on the use of virtual reality and augmented reality technology in learning to welcome the metaverse era attracts the attention of prospective teacher students and after getting exposure to the material they plan to develop teaching materials with the help of virtual reality and augmented reality technology.
6	Potential Analysis of Metaversion Implementation in Interactive Educational Media (Endarto & Martadi, 2022)	Metaverse technology will provide opportunities in the field of education as an educational media that supports the teaching and learning process. Design principles that need to be applied in making educational media in the Metaverse era based on AR and VR technology, including layout, typography, color principles, and perception of fields and spaces By using design principles as educational media based on Metaverse technology that integrates Augmented Reality (AR) and Virtual Reality (VR) technology, the learning process and delivery of knowledge becomes easier, effective, efficient, innovative, and interesting.
7	Empowering Metaverse Technology for Education (Hafids et al., 2022)	The implementation of the metaverse in education has its pros and cons. Ignorance about the metaverse, especially in areas with limited access to technology, is a major obstacle. However, after being given an

		understanding, many are optimistic that the metaverse can drive educational progress through efficiency and optimization of learning, both online and offline. Equitable access to technology is the key to its success.
8	Metaverse: Tantangan dan Peluang dalam Pendidikan (Indarta et al., 2022)	Challenges and Opportunities in Education explained that the implementation of metaverses in education has enormous potential to support the implementation process and improve the quality of education better. Distance learning with Metaverse will be considered capable of pushing the final frontier of social connections and informal learning. The bibliometric review in this study is to identify patterns, analyze novelty, and distribution of scientific reference dissemination. The results of the analysis of metaverse technology in education add to the learning experience and develop soft-skills and self-perception. The challenges of using the metaverse include the threat of digital crime, data privacy security, and shocking physical conditions.

Metaverse technology is a technology that produces a virtual world that can be explored without meeting in the same time and space in 3D through the combination of AR and VR technology. The potential implementation of Metaverse technology in education can be seen from the use of Augmented Reality and Virtual Reality as educational or learning media. Metaverse technology for the field of education and training is still in the trial stage and cannot yet be used or experienced. Therefore, this section describes the results of the application of AR and VR technology integrated in Metaverse technology, so that the potential use of Metaverse will be obtained if this technology is used as an interactive educational media.

Augmented Reality as Educational Media AR technology offers great potential and opportunities as an educational and socialization media because AR is able to display attractive visuals as well as 3D and animation that allows users to train to receive content and understanding of religious moderation contextually and directly or in real-time. The use of Augmented Reality technology facilitates the socialization process of religious moderation in a fun and unique way through the involvement of real objects that can be felt directly in the socialization process.

Virtual Reality as Educational Media The development of technology has a considerable influence in human life, including in the field of education. The application of technology as a learning media is able to increase the interest of students in the learning process. One of the latest technologies that is now used in the learning process is Virtual

Reality technology. VR technology is considered to have an impact on learner achievement because learners can simulate and interact more deeply with digital environments, so that the teaching and learning process runs more impressive and interesting.

In this research we use the meteverse platform created by the nation's children, namely Jagat Nusantara Metaverse, where this platform was inaugurated by the President of the Republic of Indonesia Joko Widodo two years ago. This platform is one of the digital economy platforms.

Figure 2. Socialization of Jagat Nusantara Platform by Avatar of the President of Indonesia
Source: Kata Data Indonesia

Analysis of the Potential Implementation of Metaverse Jagat Nusantara as a Socialization Media. The use of Metaverse technology as a socialization media will have enormous potential to spread and socialize a better and more interesting religious moderation strengthening program because it can target a wider and more diverse range of users. Not only as a socialization media, the use of meaverse can also increase the reach, especially for millennials and Gen Z with simulation features through Augmented Reality, Virtual Reality, and motion capture technology used and integrated in the development of Metaverse making it more attractive. This technology will provide more effective potential, because Metaverse allows users to interact in real time like in the real world.

Figure 3. Jagat Nusantara Platform as a medium for Socializing Religious Moderation
Source: Kata Data Indonesia

Metaverse as a very new technology has considerable potential in various aspects. The use of this technology is very influential in improving quality and experience in the future. In addition to helping the socialization process, Metaverse technology which is categorized in audio-visual-based educational media will also provide opportunities for designers to contribute to the Indonesian education sector, especially in facing the Metaverse era. The designers are expected to prepare themselves in producing attractive design, animation, and audio components to support the use of Metaverse technology.

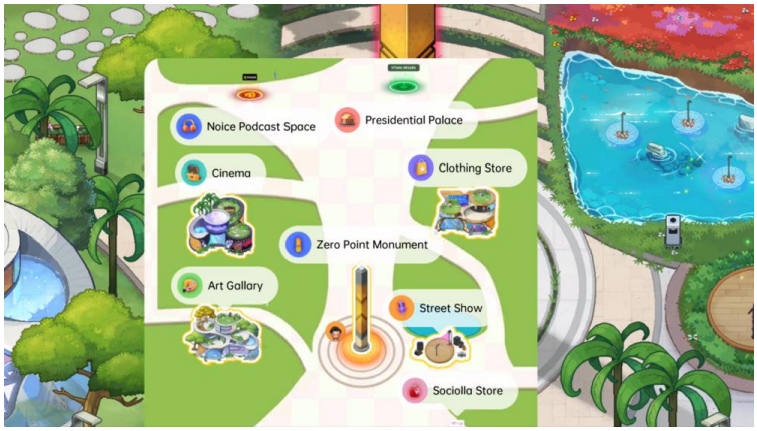

Figure 4. Jagat Nusantara platform as socialization media
Source: Digination.id

While the implementation of Metaverse in the learning process brings many benefits, there are also challenges and risks that need to be addressed. Some users may struggle to adapt to the new technology, and not all schools or educational institutions have sufficient access or resources to implement it. In addition, it is important to ensure that the use of Metaverse remains mindful of security and privacy aspects, especially when it involves users' personal data.

5. CONCLUSION

This research shows that Metaverse technology has great potential as a medium for socialization and education in religious moderation strengthening programs, especially through the integration of Augmented Reality (AR) and Virtual Reality (VR) technologies. Using a descriptive qualitative approach and literature study, this research identifies that Metaverse can create an interactive, immersive, and more engaging learning experience than conventional methods. The Jagat Nusantara platform, as one of the nation's innovations, is considered to have a great opportunity to be used in the context of education and training. With the ability to create interactive simulations, Metaverse can enhance learners' understanding of the concept of religious moderation through an

immersive visual experience, both to develop technical skills (hard skills) and non-technical abilities (soft skills).

However, the implementation of this technology also faces challenges, such as infrastructure readiness, resource availability, and user adaptation to new technology. On the other hand, the development of design, animation, and interactive elements is a crucial aspect to support the optimization of Metaverse usage. In addition, data security and privacy aspects must be a major concern in its implementation. Overall, Metaverse has the potential to be an innovative tool to support the Palembang Religious Education and Training Center's efforts to deliver religious moderation messages more effectively to young people who are familiar with digital technology. The utilization of this technology requires collaboration between various parties, including technology developers, educators, and policy makers, to ensure the sustainability and successful implementation of religious moderation programs in the digital era..

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