

OASIS' Virtuality and Its Diversifications in Ready Player One Movie

**Anggraeni Ramadhani¹ Albert Wijaya Kusuma²
Rommel Utungga Pasopati³**

¹²³Universitas Dr. Soetomo, Surabaya, Indonesia

Email: ¹anggraenirahmadh@gmail.com, ²weka98476@gmail.com,
³rommel@unitomo.ac.id

Abstract

This article explains the correlations of OASIS, its virtuality, and its impact of it in Ready Player One movie. The film tells about a virtual world in which any user must use a virtual instrument named OASIS to enter it. The OASIS provides such world for people to create and do anything, including such resistance to the prolonging power. Through qualitative method and explorative approach, the analysis includes OASIS in the film portrays the integration of virtuality into everyday life, its impact on identity, social interaction, and the blurring of the boundaries between reality and digital existence. There are also matters of escapism, the commercialization of digital experiences, and the potential of virtual spaces to foster social community and isolation. The film also highlights the dual nature of virtuality as a utopian refuge and a control mechanism in which such human experiences and social dynamics are intertwined. In conclusion, virtuality in Ready Player One explores the digital realm and real world by diversifying social interactions within those two crucial issues.

Keywords: OASIS; Ready Player One; Virtuality

A. Introduction

Ready Player One is a film directed by Steven Spielberg and released in 2018. It is an adaptation of Ernest Cline's 2011 science fiction novel of the same name. The movie takes place in a dystopian future where much of humanity escapes their grim reality. Humans then dive deeper by immersing themselves in a virtual reality universe known as the OASIS. Within this digital utopia,

users can assume any identity, explore endless virtual worlds, and engage in thrilling quests. It may be indicated as a mere utopia, but its famous digital realm has become such another world to live in (Cruz-Neira et al., 2018; Han et al., 2022; Tieu, 2022). Then, later it also amplifies the blurring boundaries between virtuality and reality itself.

The idea of virtuality has evolved in the digital age from being

merely a technological advancement to a new idea of a ubiquitous aspect in modern culture. In Steven Spielberg's film *Ready Player One*, the concept of Virtuality as a major force in human society is effectively illustrated through the presence of OASIS (Monteith, 2022; Nordstrom, 2016; Spielberg, 2018). It is exactly such a huge, vast, and open virtual environment created especially to blur the lines between reality and the digital existence. It could be a direct mirror of real daily life, but it could also be a place where dreams come true. There are no boundaries of any doing out there. Physical limits are non-existent in OASIS, making all of the user embrace freedom once they enter the virtual indications (Monteith, 2022; Nordstrom, 2016; Spielberg, 2018).

OASIS then is also a powerful symbolic metaphor of how technology can influence and change the way people live and interact with each other. In OASIS, people can create new identities, explore infinite virtual worlds, and connect with people from all over the world without physically meeting each other

(Monteith, 2022; Nordstrom, 2016; Spielberg, 2018). This reflects how modern technologies, such as social media and online gaming, have changed the way people form relationships, share experiences and even influence further views of reality itself. It is also reflected in virtual language used which could be totally similar, eroded, and even totally different from real world (Monteith, 2022; Nordstrom, 2016; Spielberg, 2018). There is no single and exact reason why such continuation from real to virtual world must be existent.

Ready Player One explores themes of escapism, identity, and the intersection of human interaction and technology. The film's rich visual effects show how virtual world is so beautiful that supported by theory of virtuality. It is also a comfortable place for digital persona that is quite dissimilar to real self (Krantz, 2021; Romanzi, 2020; Spielberg, 2018). This journal aims to dig deeper into the various layers of the film, analyzing its portrayal of virtual reality, the ethical implications of a digitized life, and the cultural significance of its many references.

By examining these elements, people can better understand the societal impacts of emerging technologies (Krantz, 2021; Romanzi, 2020; Spielberg, 2018). Furthermore, enduring human desire for connection and adventure in an increasingly digital world could also be investigated by showing its positive and negative impacts.

B. Research Method

By using qualitative methods, certain and written data are analyzed to answer the question in this paper. Written through description, scripts and movie scenes are used to explain correlations between the real world and OASIS world. The data analysis includes obtaining sources, watching sources carefully, comparing with other issues, quoting into paper, and writing down the used reference list. The research data comes from *Ready Player One* movie and theory of virtuality. Through explorative approach in content analysis, each of them is watched and read then being used to explain particular elements. More elaborations related to

expanding analysis are also provided in addition furthermore.

C. Findings and Discussions

OASIS and Its Further Virtuality

Ready Player One is a movie based on technological advancement in a video game. The world being shaped in that motion picture is connecting real and virtual problems as well (Krantz, 2021; Romanzi, 2020; Spielberg, 2018). The characters in the film are shown to accentuate the difficulties of life, the video game as its escape from real life, and competitions among players and powerful people in the game. Artificial intelligence plays a pivotal role in the world of *Ready Player One*, both within the OASIS and in the broader society. AI in the OASIS is sophisticated, managing countless aspects of the virtual environment and providing users with interactive experiences that feel real (Balayn et al., 2022; Hidayat & Munjid, 2020; Rafif & Munjid, 2021). This includes everything that exhibits complex behaviors to dynamic environments that respond to the actions and decisions of the players.

Within the OASIS, AI is responsible for creating and maintaining the vast, detailed worlds that users explore. These AIs ensure that each user's experience is unique and engaging, capable of adapting to the player's actions in real-time. This creates a sense of endless possibility and adventure, drawing users like Wade, the main character, into spending most of their time in the OASIS (Balayn et al., 2022; Hidayat & Munjid, 2020; Rafif & Munjid, 2021). The AI in *Ready Player One* also facilitates personal connections and interactions within the virtual world. For many users, the OASIS becomes a space for social interaction, collaboration, and even forming meaningful relationships, compensating for the isolation and disconnection felt in the real world. Wade's interactions with other players and AI characters highlight the blurred lines between human and AI, raising questions about the nature of reality and relationships in an AI-dominated environment (Balayn et al., 2022; Hidayat & Munjid, 2020; Rafif & Munjid, 2021). The details of data in the film are listed as follows;



Picture 1
Wade Watts Living the Real and Virtual Life

In the first image, Wade Watts, portrayed by Tye Sheridan, builds a makeshift setup in a van or a similarly confined space. The setting is dimly lit, with light seeping in from outside, illuminating Wade as he prepares to enter the OASIS. This image emphasizes the contrast between the bleak, claustrophobic reality and the expansive possibilities within the virtual world (Kim et al., 2022; Seo & Kang, 2023; Spielberg, 2018). It is also representing Wade getting his virtual reality gear ready as he starts to immerse himself in the OASIS. His focused expression highlights the significance of this transition from the real world to the virtual one. This gear includes a VR headset and haptic gloves, indicating the advanced technology that allows for a deeply immersive experience.

The opening scenes also underscore the role of AI in providing an escape from the harsh realities of Wade's life. The sophisticated AI of

the OASIS offers an alluring alternative to the dilapidated, overpopulated, and economically depressed real world (Kim et al., 2022; Seo & Kang, 2023; Spielberg, 2018). This escape is so compelling that it shapes the daily lives of millions of characters, including Wade, who finds purpose and community in the virtual realm.



Picture 2 and 3
Realities of Players in OASIS

In this scene, those are showing a person playing as his own avatar, by using the VR Headset; he could see what his avatar sees during gameplay. It mimics whatever the user is doing in real-life, starting from physical motion and users' expression. The second picture indicates that fictional statistics also exist in Virtual reality, either in form of Levels or Character data (Inventory, Skills, and Attributes). This drives users to increase their Character attributes by keep playing the game (Dalimu et al.,

2020; Saatsi, 2018; Spielberg, 2018).

In modern society, and in OASIS either, this is also a problem for kids and some teenagers, people connects the virtual world with the real one by expecting that they are in the same line.



Picture 4
Wade and His Avatar

In this scene, Wade, using his avatar Parzival, navigates through a bustling crowd of other players in the OASIS. He is seen holding a transparent, holographic interface, interacting with it as he prepares for a race that is about to begin in ten minutes. The setting is vibrant and dynamic, filled with diverse avatars, each representing a different player from around the world, showcasing the vastness and diversity of the OASIS (Dalimu et al., 2020; Saatsi, 2018; Spielberg, 2018). It also indicates OASIS is a technology that allows users to replace the real world with the synthetic one, creating an immense creativity, and possibly endless in terms of limit. It usually involves a set of technologies that are

used to generate computer-generated virtual environments.



Picture 5
Immersive Features of OASIS

The depicted scene elucidates a competitive event conducted within the OASIS platform. It illustrates the immersive conditions experienced by players in OASIS, wherein they possess the ability to engage in various activities, including participation in a race. This virtual gaming environment is replete with competitive opportunities, allowing all participants to engage through their avatars in pursuit of rewards (Dalimu et al., 2020; Saatsi, 2018; Spielberg, 2018). This represents a particular diversification of OASIS, particularly as players can adopt their identities as racers and experience the associated thrill within the gaming context.



Picture 6
Players in OASIS Running with their VR

The scene above is interesting since players are running to destroy other players who would like to control the OASIS. This is showing two aspects. The first one is immersive situation in which real world is actively combined with conditions in the game. They are running because they need to join the forces to defeat the bad people. The second one is the solidarity being involved (Dalimu et al., 2020; Saatsi, 2018; Spielberg, 2018). They join forces in order to shape equality in OASIS. They want this game to be accessible for everyone, not only for powerful people.

Abundant scenes of *Ready Player One* effectively introduce the audience to a world where AI is integral to both the virtual and real experiences of its inhabitants. By juxtaposing Wade's grim reality with the immersive possibilities of the OASIS, Spielberg, the director of the movie, sets up a narrative that explores the profound impact of AI on society (Dalimu et al., 2020; Saatsi, 2018; Spielberg, 2018). These scenes establish the themes of escapism, personal connection, and the struggle

against corporate control, all facilitated by advanced artificial intelligence. As the story unfolds, the role of AI becomes even more critical, shaping the characters' journeys and the future of their world.



Picture 7
Forces of Sorrento against Other Players

The above scene illustrates numerous individuals operating under the auspices of Sorrento and IOI, engaging in combat against standard players led by Parzival. The cruel and even crimson circles signify those who have been vanquished, in contrast to the white circles representing those who remain alive. This depiction further emphasizes the existing disparities in power dynamics, wherein the more formidable entities possess greater resources in comparison to the ordinary players within the game (Imre, 2020; Spielberg, 2018; Ue & Munday, 2022). Ultimately, Sorrento's defeat serves as evidence that the OASIS platform transcends

mere victory, fostering a sense of solidarity among its players.

Another significant theme of this film is the use of AI by corporations, such as IOI (Innovative Online Industries) led by Sorrento, to control and exploit the OASIS for profit. The AI systems employed by IOI are designed to maximize user engagement and monetize every aspect of the virtual experience (Imre, 2020; Spielberg, 2018; Ue & Munday, 2022). This sets up a conflict between the freedom offered by the OASIS and the corporate greed threatening to dominate it, a central tension in the narrative.



Picture 8
The War between Sorrento's People and Parzival's Allies

The narrative of the above scene depicts a conflict that transpires between conventional and formidable participants. Sorrento and his coalition confront other participants, driven by his aspiration to dominate the OASIS. Conversely, the other participants endeavor to ensure the security of the OASIS for all

individuals (Imre, 2020; Spielberg, 2018; Ue & Munday, 2022). They seek competitions devoid of any intimidation, in stark contrast to Sorrento's actions. This conflict culminates in the triumph of Parzival's allies, illustrating that sheer force does not equate to genuine control over any entity.

Virtuality and Virtual Reality

The sense of virtuality comes from the ideas of digital realm. It could be the same, different, or even immersive differences between real world and digital realm. It creates such digital persona in which the self is quite dissimilar to real world. The digital persona is the main actor of virtual condition that could freely do anything s/he wants (Han et al., 2022; Tieu, 2022; Young et al., 2022). It also indicates such specific identity that could only correlate with that world. This is also a sign of enhanced technological advancements in the creations of Artificial Intelligence (AI). It is also not natural, but artificial set by human beings to reach further goals.

The virtuality in virtual realm is a situation where perfectness wants

to be realized. Its artificiality is inevitable but it is such self-creating practices that create various aspects. Virtuality may also create such representative things in which those are unreal but reflections from the real ones (Han et al., 2022; Tieu, 2022; Young et al., 2022). It is a realm of postindustrial ones. It is representations of social embeddedness in relevant technologies. It is not actual, but virtual as it simulates and replicates the real reality. It is imagery, but not the real images. It may be such abundant illusions, but the creativity is always intact there, creating pre- and even post-individual reality as well (Cruz-Neira et al., 2018; Han et al., 2022; Tieu, 2022).

Furthermore, virtuality is related to embodied experience in virtual environments. Indeed, it also pertains to how people experience and relate to virtual worlds, characters, and interactions in immersive digital settings (Czarnocka & Mazurek, 2023; Ropolyi, 2016; Sumardani et al., 2020). Understanding these concepts involves exploring how virtual environments can evoke emotional

responses and foster a sense of presence and connection. By stating so, there are various elements of virtuality in motion. The first one is about movement and control that still involve physical movements. Indeed, any virtuality is not moved by human's mind but it is still related to physical sense of real world (Czarnocka & Mazurek, 2023; Ropolyi, 2016; Sumardani et al., 2020). The usage of controllers or motion tracking may create a sense of embodiment by allowing users to manipulate and engage with the virtual environment in a way that mirrors physical actions. The second one is the sense of presence as if the users are in another world. The degree of the presence is to which users feel as though they are physically present in a virtual environment is crucial to their embodied experience (Czarnocka & Mazurek, 2023; Ropolyi, 2016; Sumardani et al., 2020). Technologies like VR headsets, motion controllers, and spatial audio contribute to a heightened sense of presence. The third one is sensory integration that shapes integral human imageries as well. Combining visual,

auditory, and tactile feedback helps create a more cohesive embodied experience, making interactions and movements in the virtual space feel more natural. The last one is about emotional impact as psychological sense of virtuality. That realm is creating highly emotional or distressing scenarios in virtual environments that require careful consideration of the psychological impacts on users (Hamdani et al., 2023; Pasopati et al., 2024; Ropolyi, 2016).

Those four ideas above are indications of virtuality in the sense of spatial and time difference. The idea is how subject may experience something different from usual world. It is where possibility becomes real. It is a scene in which its actuality is not real, but stated in the imageries of the real (Annasai et al., 2024; Ropolyi, 2016; Sumardani et al., 2020). By stating so, it is known that virtual reality is one of advanced technology supported by AI. It is a fully digital realm generated by computers in which its three-dimensional aspects are shown simultaneously. It is a

realm where anything is blurred since it showing things in representations.

Furthermore, the sense of virtuality could be measured from its immersive points. The more immersive it is, the more digital persona is fully articulated in the digital realm. Virtuality today could be non-immersive, semi-immersive, and fully immersive (Han et al., 2022, Heizenrader, 2024; Ropolyi, 2016). The non-immersive point is how it is commonly used today. It is putting clearer boundaries between real and virtual surroundings. It gives meanings temporarily as users may come and go from real to virtual world. The instance of a video game with its controllers is quite a non-immersive one. The semi-immersive points are technologies used for various trainings. It shows high resolution displays as such simulations for further usages. It brings simulations to real world, making its users imagine another world before going to the real one (Han et al., 2022, Heizenrader, 2024; Ropolyi, 2016). This sense is immersive than before since it gives more freedom for users to gain better

perspectives in another realm. The fully-immersive ones are quite the same with two previous ones, but these ones are giving further and even unlimited possibilities. It is a machine usually put to create fully-covered imageries of all humans' senses. VR glasses or head-mounted displays are examples of these fully-immersive ones (Han et al., 2022, Heizenrader, 2024; Ropolyi, 2016).

OASIS and Its Analysis on Virtuality

OASIS fundamentally entails the incorporation of virtuality into quotidian existence. It not only furnishes an avenue for escapism for the participants, but it also exerts significant influences on individual identities. This phenomenon arises from the video game's capacity to transform the virtual realm into advanced modalities of social interaction (Hamdani et al., 2023; Pasopati et al., 2024; Ropolyi, 2016). The avatars and their interrelations bear a resemblance to real-world dynamics. Indeed, individuals engaged in the game find themselves impacted in their actual lives. The emotions of anger and joy elicited

from the game are palpably experienced by the players.

The world of OASIS also successfully blurs of the boundaries between reality and digital existence. The escapism comes at first, but then it also evolves as another world being lived by the players. They may still use VR as a tool to enter the world of OASIS, but their real bodies also being affected by that video game. There is indeed commercialization of digital experiences as those who are defeated are changed into forms of coins. The competition is actually more visible as all players are pushed to be the best. The ones who get defeated can still support the best ones as the objective of this video game is to win together.

The existence of virtual realm in OASIS also contains various potentials to foster social community. Interestingly, it makes people to cooperate with each other and evades such isolations and alienations among them. It is due to such common enemy involved who would like to gain their own benefits by controlling OASIS (Imre, 2020; Spielberg, 2018; Ue & Munday, 2022). The video

game is becoming such tool to revolt against powerful people. The revolution is evolved from the nature of video game not only as a place of refuge, but also a way to realize better control of life. That is why OASIS is thick with human experiences and social dynamics.

Furthermore, according to the data and concepts above, OASIS is rich not only in its essence of AI, but also how it manages to support other aspects of identity and its social matters. From the movement and control, the characters experience Interactions that involve physical movement by using OASIS, allowing users to manipulate and engage with the virtual environment (Imre, 2020; Spielberg, 2018; Ue & Munday, 2022). That is how they behave through their virtual identities by regarding technological sense of presence. It is shown in the film when the characters feel as though they are physically present in a virtual environment because the high technology of OASIS offers realistic visuals. This visuals are nothing but such realm built by the AI, blurring

realness and virtuality at the same time.

OASIS is also indicated through how it successfully integrates complex sensory imageries of human beings. That machine accentuates visual, auditory, and tactile feedback that helps the characters to feel the virtual space feel more natural. For them, the virtual world is not different than the real one. It could also be said that even the former is constantly influencing the latter (Kim et al., 2022; Seo & Kang, 2023; Spielberg, 2018). By stating so, the video game underlines more into emotional impacts to the players. OASIS actively allows users to step into the shoes of different characters, experiencing their challenges and perspectives, which can foster a deeper sense of empathy. Creating highly emotional or distressing scenarios in virtual environments requires careful consideration of the psychological impact on users. That is why such revolution can occur in the movie, stating the solidarity being shaped in fighting the powerful entities (Kim et al., 2022; Seo & Kang, 2023; Spielberg, 2018).

As a digital gaming platform, OASIS offers an alternate realm for individuals to seek refuge. The cinematic adaptation of *Ready Player One* elucidates the potential of virtual reality as a mechanism for society to disengage from tangible existence and become immersed within the digital sphere (Kim et al., 2022; Seo & Kang, 2023; Spielberg, 2018). This narrative highlights the ramifications of opting for ephemeral gratification in the virtual domain over the pursuit of personal development. Indeed, it may engender a dependency resulting from excessive engagement with the digital environment. OASIS itself is presented as a gaming ecosystem that is broadly accessible across diverse age groups. Furthermore, it facilitates creative expression, allowing individuals to channel their emotions into their digital avatars (Dalimu et al., 2020; Saatsi, 2018; Spielberg, 2018). Nevertheless, this film also conveys an opposing narrative, as the characters are depicted as striving to dismantle the dominion of influential entities seeking to control OASIS.

It is also interesting how such video game can underline the sense of

solidarity among virtual players. The characters show their efforts to make OASIS accessible for everyone. That is why *Ready Player One* is not only about a movie containing AI and virtual players, but also a motion picture showing disparities as its one of diversifications (Dalimu et al., 2020; Saatsi, 2018; Spielberg, 2018). Moreover, what is realized in the movie is participation and power dynamics indicating that such film in the sense of literature is never neutral at all. It includes matters of power relations in which contesting ideologies may always realize in the plot of the story.

D. Conclusion

Ready Player One is a movie containing story about AI, video game, virtual players, and behaviors of the players regarding solidarity. All of them show how AI is not merely about man and machine, but how technological advancement could be used to enhance immersive participations of human beings to digital realm. OASIS in the film portrays the integration of virtuality into everyday life especially in the

blurring of the boundaries between reality and digital existence. OASIS provides not only a place to escape from real reality, but also potential of virtual spaces to foster social community. The film then also shows both deepened gaming ecosystem and virtual identities in the sense of solidarity. The following phenomenon of AI in OASIS points out the video game's capacity to transform the virtual realm into advanced modalities of social interaction. The avatars and their interrelations bear a resemblance to real-world dynamics.

References

- Annasai, A. A., Pasopati, R. U., Wijaya, K., Hariyono, H., & Kartiningsih, R. (2024). The Noteworthiness of Meteionâ€™s Will to Power in Naoki Yoshidaâ€™s Final Fantasy XIV: Endwalker. *Madani: Jurnal Ilmiah Multidisiplin*, 2(2).
- Balayn, A., He, G., Hu, A., Yang, J., & Gadiraju, U. (2022, April). Ready player one! eliciting diverse knowledge using a configurable game. In *Proceedings of the ACM Web Conference 2022* (pp. 1709-1719).

- Cruz-Neira, C., Fernández, M., & Portalés, C. (2018). Virtual reality and games. *Multimodal Technologies and Interaction*, 2(1), 8.
- Czarnocka, M., & Mazurek, M. (2023). Deleuze's Conception of Virtuality Versus Virtual Computer Objects. *Foundations of Science*, 1-13.
- Dalimu, S., Putra, A., & Azi, R. (2020). The Portrayal and The Effects of Hyper-reality in Ready Player One Movie By Steven Spielberg (The Application of Jean Baudrillard's Theory). *ELITE: Journal of English Language and Literature*, 5(1), 24-35.
- Hamdani, F. N., Marharendra, A. M., Kusuma, A. W., & Pasopati, R. U. (2023). The Intertwinements of Information and Literacy in Contemporary Culture. In *Proceeding of International Seminar Enrichment of Career by Knowledge of Language and Literature* (Vol. 11, No. 1, pp. 225-243).
- Han, I., Shin, H. S., Ko, Y., & Shin, W. S. (2022). Immersive virtual reality for increasing presence and empathy. *Journal of Computer Assisted Learning*, 38(4), 1115-1126.
- Hidayat, D. S., & Munjid, A. (2020). Elite domination and lower class resistance in Ernest Cline's Ready Player One. *Lexicon*, 7(1), 106-116.
- Imre, A. (2020). Rendering science fiction, culture, and language while translating ready Player One. *Acta Universitatis Sapientiae, Philologica*, 12(3), 70-87.
- Kim, S. H., Yi, S. W., & Bang, J. S. (2022). Metaverse Ethics in the Movie 'Ready Player One'. In *Proceedings of the Korean Society of Broadcast Engineers Conference* (pp. 568-571). The Korean Institute of Broadcast and Media Engineers.
- Krantz, S. B. (2021). Commentary: Ready Player One: A new "reality?". *JTCVS techniques*, 7, 322-323.
- Monteith, A. (2022). Transhumanism, utopia, and the problem of the real in Ready Player One. *The Journal of Religion and Popular Culture*, 34(1), 1-15.
- Nordstrom, J. (2016). "A pleasant place for the world to Hide": Exploring themes of utopian play in ready player one. *Interdisciplinary Literary Studies*, 18(2), 238-256.
- Pasopati, R. U., Bethari, C. P., Nurdin, D. S. F., Camila, M. S., & Hidayat, S. A. (2024, March). Ethical Consequentialism in Values and Principles of UNESCO's Recommendation on the Ethics of Artificial Intelligence. In *Proceeding*

- International Conference on Religion, Science and Education* (Vol. 3, pp. 567-579).
- Rafif, M. I., & Munjid, A. (2021). Questioning Popular Culture: Future Technology In Ready Player One. *Lexicon*, 8(2), 85-95.
- Romanzi, V. (2020). Levels of Reality in Steven Spielberg's Ready Player One: Utopia, Dystopia, and Retrotopia. *JAm It!: The Journal of American Studies in Italy*, 3, 171-172.
- Ropolyi, L. (2016). *Virtuality and Reality—Toward a Representation Ontology, Philosophies, vol. 1*.
- Saatsi, P. E. (2018). *Virtually Destroyed: Analysing the Twenty-First Century Apocalypse in Ernest Cline's Ready Player One* (Master's thesis, Itä-Suomen yliopisto).
- Seo, Y. S., & Kang, A. (2023). NEGATIVE ATTRIBUTES OF THE METAVERSE BASED ON THEMATIC ANALYSIS OF MOVIE "BELLE" AND "READY PLAYER ONE". *International Journal of Computer Graphics & Animation*, 13(01).
- Spielberg, S. (2018). *Ready Player One*. Warner Bros. Pictures.
- Sumardani, D., Putri, A., Saraswati, R. R., Mulyati, D., & Bakri, F. (2020). *Virtual reality media: The simulation of relativity theory on smartphone*. *Formatif: Jurnal Ilmiah Pendidikan MIPA*, 10 (1), 13–24.
- Tieu, M. (2022). *Self and Identity: An Exploration of the Development, Constitution and Breakdown of Human Selfhood*. Routledge.
- Ue, T., & Munday, J. (2022). Past, Present, and Place: Setting in Cline's Ready Player One. In *The Palgrave Encyclopedia of Urban Literary Studies* (pp. 1484-1490). Cham: Springer International Publishing.
- Young, G. W., O'Dwyer, N., & Smolic, A. (2022). Exploring virtual reality for quality immersive empathy building experiences. *Behaviour & Information Technology*, 41(16), 3415-3431.