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# *Augmented Reality* and *Virtual Reality* Technology in Quranic Interpretation Education in Indonesia: Current Trends

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**ABSTRACT**

*This research explores the utilization of Augmented Reality (AR) and Virtual Reality (VR) technologies in digital Qur'anic commentary as an innovative approach that enriches Muslim understanding. AR/VR combines virtual elements with the real world, creating an immersive interactive experience through digital devices such as smartphones, tablets or AR/VR glasses. Using the literature research method, this study examines the application of AR/VR in Qur'anic exegesis education, as well as the relationship between Tafsir Ilmi and modern science. The results show that this technology has the potential to increase engagement and understanding through realistic visualization. However, the Tafsir Ilmi approach faces criticism regarding the risk of anachronism and reduction of spiritual meaning, so a balance is needed between technological innovation, scientific tafsir, and classical tafsir traditions.*

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**ABSTRAK**

Penelitian ini mengeksplorasi pemanfaatan teknologi Augmented Reality (AR) dan Virtual Reality (VR) dalam tafsir Al-Qur'an digital sebagai pendekatan inovatif yang memperkaya pemahaman umat Islam. AR/VR menggabungkan elemen-elemen virtual dengan dunia nyata, menciptakan pengalaman interaktif yang imersif melalui perangkat digital seperti ponsel pintar, tablet, atau kacamata AR/VR. Dengan menggunakan metode penelitian literatur, penelitian ini mengkaji penerapan AR/VR dalam pendidikan tafsir Alquran, serta hubungan antara Tafsir Ilmi dan ilmu pengetahuan modern. Hasil penelitian menunjukkan bahwa teknologi ini memiliki potensi untuk meningkatkan keterlibatan dan pemahaman melalui visualisasi yang realistis. Namun, pendekatan Tafsir Ilmi menghadapi kritik terkait risiko anakronisme dan pengurangan makna spiritual, sehingga diperlukan keseimbangan antara inovasi teknologi, tafsir ilmiah, dan tradisi tafsir klasik.

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## INTRODUCTION

Quranic interpretation education has a very important role in shaping people's understanding of the holy text and teachings of Islam. ( Yusron , 2022) So far, traditional interpretations tend to use written texts as the main medium to explain the meaning of the verses of the Qur'an. (Wardani, 2022) Although this method is effective, in the ever-growing digital era, traditional teaching methods are often insufficient to meet the needs of the younger generation who are increasingly connected to technology.

In the context of rapid technological developments, there is an innovative approach that promises to deepen Muslims' understanding of the Qur'an, namely through the use of Augmented Reality (AR) and Virtual Reality (VR) technology in digital Qur'an interpretation. (Didik, 2022) AR / VR is a technology that combines virtual elements with the real world, thus creating a more immersive interactive experience. (Mustaqim, 2016)

In AR /VR applications , digital devices such as smartphones, tablets, or AR /VR glasses are used to display virtual objects, images, or additional information in the context of the environment viewed by the user. ( Pramesti et al., 2022) Therefore, now is the right time to take advantage of technology. AR /VR as an innovative approach in digital Qur'an interpretation.

The use of AR can expand the way of delivering interpretation by presenting visual and interactive elements that allow for deeper and more dynamic understanding, in line with the needs of the digital generation. Thus, AR / VR can be a modern solution that complements traditional interpretation methods, without reducing the essence and depth of the meaning of the sacred text.

AR/VR technology plays a vital role in helping users understand the social, cultural, and geographical context underlying the verses of the Quran. For example, when studying the story of Prophet Ibrahim and the Kaaba, users can use 3D visualization to see a depiction of the Kaaba during the time of Prophet Ibrahim, including its architectural details, size, and location. This approach enriches the understanding of the meaning and importance of the Kaaba in Islamic history. One example shared via the vrjourney.indo *Instagram account* is a 5D spectacle in Senayan, Jakarta, which tells the story of the Prophet Muhammad's struggle to spread Islam. This visual experience is able to touch the emotions of the audience, highlighting how technology can visualize Islamic history effectively and deeply. *kauniyah* verses in the Qur'an with modern scientific discoveries, aiming to show the miracle of the Qur'an. (Erlina & Saputra, 2023)

The focus of this research is on the application of *Augmented Reality* (AR) and *Virtual Reality* (VR) Technology in Al-Qur'an interpretation education in Indonesia as an innovative step to improve the learning experience. The integration of VR is expected to create a more immersive and realistic learning environment, allowing users to experience historical, geographical, and thematic context of the verses of the Qur'an directly. This research will explore how such technology can help visualize interpretations that are difficult to explain using conventional

methods, thereby deepening the understanding of the meaning and teachings of the Qur'an in a modern context.

## RESEARCH METHODS

This research uses a qualitative approach with a *library method* . *research* or library research ( Sugiono , 2012) . This approach will examine various sources of literature, journals, articles, and related documents *that* discuss the application of AR and VR technology in education, especially in the context of interpreting the Qur'an.

## RESULTS AND DISCUSSION

### *Augmented Reality* (AR) and *Virtual Reality (VR)* Technology in Quranic Interpretation Education

With the rapid development of technology, the world of education is required to continue to innovate in order to remain relevant. One of the innovations that is starting to be used in various education sectors is *Augmented Reality* (AR) and *Virtual Reality* (VR) technology. In the education of Al-Qur'an interpretation, this technology opens up new opportunities to enrich learning methods and facilitate the delivery of holy verses, so that their interpretation is easier to understand and accept.

Efforts to combine the rich tradition of Qur'anic interpretation with modern technologies such as AR and VR are expected to open up new dimensions in interpretation education. The application of this technology not only increases engagement in the learning process, but also provides opportunities to understand the Qur'an more comprehensively through the combination of science and more concrete and contextual visual experiences.

*YouTube* account managed by Didik uploaded a video from Trans 7 about an animated film using *Augmented Reality* (AR) and *Virtual Reality* (VR) technology with the theme of Prophet Noah (Didik, 2022). Prophet Noah was one of the apostles sent by Allah SWT to call his people to believe and abandon idol worship. In the Qur'an, the story of Prophet Noah is spread across several surahs, such as Surah Noah, Hud, and Al-Ankabut. Prophet Noah preached for 950 years, but only a few of his people accepted his call. Although he diligently warned his people about the threat of Allah's punishment, the majority of them strongly rejected his preaching. (Belhaj, 2023)

**Figure 1. 3D Story of Prophet Noah AS**


At the command of Allah, Prophet Noah then built an ark that functioned as a means of salvation for himself, his faithful family members, and his followers from the great flood that was

about to hit. This flood was a form of Allah's punishment for the disobedient people of Prophet Noah, drowning the entire land and all who rejected the truth of revelation. Only Prophet Noah and those who believed survived, and the ark finally anchored on Mount Judi. This story provides a profound lesson about the steadfastness of faith, patience in the face of rejection, and the consequences of rejecting the truth. In addition, this story is also often associated with scientific studies related to the phenomenon of the great flood recorded in geological history. (Mitib, 2019)

The scientific interpretation approach to the story of Prophet Noah opens up opportunities to connect the Qur'anic narrative with scientific phenomena. One of the topics that is often discussed regarding this story is the great flood mentioned in the Qur'an and other holy books. A number of researchers have tried to link the story of Prophet Noah's flood with geological evidence that supports the existence of a great flood in the past, which is often associated with the Mesopotamian flood . (Nafisah, 2023)

The construction of the ark by Noah can be seen from the perspective of technology at that time. The Qur'an explains that the order to build the great ship came directly from Allah SWT, which can be interpreted as divine guidance in the use of technology and skills that exceeded human capabilities at that time.

**Scientific Interpretation and its Relation to Modern Science**

According to Muhammad Husain al-Dzahabi, scientific interpretation ( *al-tafsir al-'ilmi* ) is defined as the study of aspects of science contained in the Qur'an, as well as efforts to uncover the various knowledge and ideas contained therein. (Faizin, 2017)

Tafsir Ilmi is an approach to interpreting the Qur'an that seeks to find and explore verses related to scientific phenomena, whether related to the universe, life, or technology. This approach tries to explain that the Qur'an, as a book of guidance, does not only talk about theological and moral aspects, but also contains scientific signs that can be strengthened by modern science. (Kemenag, nd)

This approach was born as a response to the advancement of science and technology in the modern era, where Muslims began to realize that there was harmony between revelation and scientific reality revealed through research. However, Tafsir Ilmi must be done carefully so as not to fall into speculative interpretations that are not in accordance with the context of revelation.

**a. Principles of Scientific Interpretation**

Scientific interpretation is based on several principles, including **:** (Anhar, 2018)

1) Consistency between text and context
   In Tafsir Ilm, it is very important to maintain the correspondence between the intent of the Qur'anic text and the scientific context to which it is related. This avoids over-interpretation *or* forcing of meaning.
2) Does not violate traditional interpretation rules
   The scientific approach must not ignore the rules of interpretation that have been agreed upon by scholars. The interpretation of the Qur'an must still prioritize an understanding based on Arabic, asbabun nuzul, and the views of previous interpreters.

3) Scientific evidence is dynamic

Science is temporary and continues to change along with the advancement of human knowledge. Therefore, the scientific interpretation of the Qur'an must also take this dynamic into account and must not claim that current science is the only definite truth.

**b. Relationship with Modern Science**

Modern science is developing rapidly in various fields, from physics, biology, to astronomy. Some examples that are often associated with Tafsir Ilmi are:

1) Astronomy

The verses of the Qur'an that describe the creation of the heavens and the earth as originally united are often associated with the Big Bang theory. Modern astronomy supports the idea that the universe began from a singular point that then experienced a big explosion. This concept is reflected in Surah Al-Anbiya' (21:30)

اَوَلَمْ يَرَ الَّذِيْنَ كَفَرُوْٓا اَنَّ السَّمٰوٰتِ وَالْاَرْضَ كَانَتَا رَتْقًا فَفَتَقْنٰهُمَا ۗوَجَعَلْنَا مِنَ الْمَاۤءِ كُلَّ شَيْءٍ حَيٍّ ۗاَفَلَا يُؤْمِنُوْنَ ۝٣٠

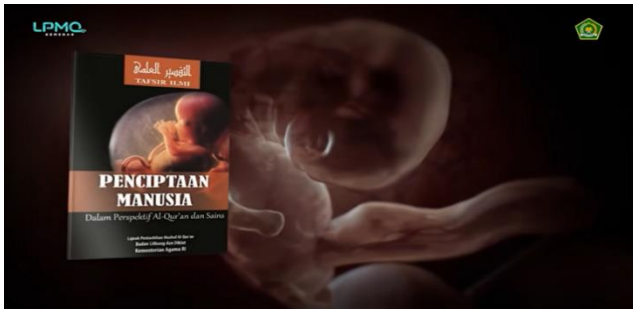
*Meaning: "Do not the disbelievers know that the heavens and the earth were of one piece, then We separated them and made every living thing from water? Will they not then believe?"*

2) Embryology

The Qur'an describes the process of human creation, starting from the earth, *a* drop of semen, *a clot* of blood, a lump of flesh, and the formation of a perfect human being. Modern discoveries in embryology show agreement with the description of these stages, although more detailed information is obtained through scientific research. This description is found in Surah Al-Mu'minun (23:12-14).

Based on the meaning of the verse, the Qur'an describes that the beginning of human creation began with semen. Currently, AR/VR technology has been able to visualize this process. In fact, the official *YouTube account* of Lajnah Kemenag has utilized this technology by releasing a video entitled *Human Creation in the Perspective of the Qur'an & Science/ Process of Human Creation in Qur'an & Science.* (Kemenag, nd)

**Figure 2. 3D Human Creation Process**




This 3D video underlines the importance of synergy between technology and religion that can develop harmoniously in the era of Industry 4.0.

3) Geology

The verses of the Qur'an that refer to mountains as "pegs of the earth" are often associated with modern geology, which suggests that mountains help maintain the stability of the earth's

crust. Geology reveals that mountains act as stabilizers with deep roots, thus preventing excessive movement of the earth's plates. This suggests that the Qur'an has hinted at natural phenomena that were only understood in the modern era. This hint is seen in Surah Ar-Rum (31:10) and An-Naba' (78:6-7), which explain the important role of mountains in maintaining the balance of the earth, in accordance with current geological findings.

**c. Criticism of Scientific Interpretation**

Although Tafsir Ilmi has the potential to show the harmony between revelation and science, this approach has also received criticism. Some of the main criticisms are:

1) The Imposition of Science into the Qur'an
   There is a danger if someone tries too hard to find harmony between the Qur'an and science, so that it ends up with an inappropriate interpretation. This coercion can ignore the spiritual and theological meaning of the verses. (Mutma'innah, 2022)
2) Scientific Uncertainty
   Science is always changing, while the Quran is a final book. Linking Quranic verses to scientific theories that can change can carry the risk of irrelevant interpretations in the future.
3) Reduction of Spiritual Meaning
   Too much focus on the scientific aspects of the Qur'an can reduce attention to the spiritual and moral aspects that are more essential in the lives of Muslims. (Shihab, 1996)

Tafsir Ilmi is one approach that shows the relevance of the Qur'an to the development of modern science. Although this approach can strengthen the belief of Muslims that the Qur'an contains scientific signs, it should be remembered that the main purpose of the Qur'an is not as a scientific book, but rather a guide to life that includes spiritual, ethical, and social aspects.

The use of Augmented Reality (AR) and Virtual Reality (VR) technology benefits from the scientific interpretation approach, because this technology can facilitate public understanding through clearer and more interactive visualizations. However, with the limitations of sharia, the application of this technology still maintains ethics, such as the prohibition of visualizing Allah SWT and the Prophet Muhammad SAW, so that it remains in accordance with the principles of Islamic teachings .

## CONCLUSION

Study shows that the application of Augmented Reality (AR) and Virtual Reality (VR) technology in Quranic interpretation education in Indonesia provides significant potential in enriching user understanding through a more immersive and interactive learning experience. AR/VR allows realistic contextual visualization of Quranic verses, which increases engagement and relevance of the learning process. However, the application of this technology must pay attention to ethical limitations according to Islamic teachings.

In addition, this study also shows that Tafsir Ilmi, which links the verses of the Qur'an with modern scientific findings, can open up new perspectives in understanding revelation. However, Tafsir Ilmi faces criticisms such as the risk of anachronism, where verses are interpreted based on scientific theories that may not always be relevant, as well as the potential reduction of the spiritual meaning of the Qur'an.

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