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Exploring Augmented Reality-Based Learning Media Implementation in Solar System Materials

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ABSTRACT

Objective: This research aims to analyze the impact of using augmented reality (AR) based learning media on understanding Solar System material. The focus is on evaluating the effectiveness of AR in improving the learning process, particularly on Solar System materials. **Methods**: The research method used is a literature review by searching for related journals indexed by Scopus within the last five years, from 2018 to 2023. The selected literature was then analyzed to gain an in-depth understanding of the implementation of AR in Solar System learning. **Results**: Analysis of the literature shows that using AR technology as a learning medium positively impacts understanding of Solar System concepts. There is an increase in student engagement and learning effectiveness through AR. **Novelty**: This study reveals that using AR-based learning media on solar system material can improve understanding of Solar System concepts. This finding invites researchers, teachers, and the government to develop and consider the implementation of AR in the context of astronomy learning.

INTRODUCTION

Natural science is one of the compulsory subjects found in secondary schools. The definition of natural science is a branch of science that studies real and abstract events in nature that must be proven by making observations, observations, and experiments. One of the materials considered difficult for students in Natural Sciences subjects is material about the solar system (Ardiyanti & Zuhdi, 2021). This material's complexity and abstract nature make it difficult for students to fully understand it, mainly due to their limited ability to observe astronomical objects and phenomena related to the solar system directly in everyday life (Nadzif et al., 2022). Therefore, the learning process on material about the solar system must be supported by the selection of appropriate learning media (Suwartiningsih, 2021) because learning media is an intermediary or introduction to excellent and pleasant communication between teachers and students (Fakhrudin & Kuswidyanarko, 2020).

Learning media means a set of tools or means used to channel and convey material or information in the form of material in learning activities so that the teaching and learning process can run effectively and the objectives of learning can be achieved perfectly (Zahwa & Syafi'i, 2022). The use of learning media not only makes it easier for teachers to deliver material to students (Melanda et al., 2023) but also increases their interest (Puspitarini & Hanif, 2019) and motivation to learn more interactively and proactively (Dewi et al., 2019). This can create a more lively classroom atmosphere (Pranoto & Suprayogi, 2021), where feedback between teachers and students can be established smoothly and the effectiveness of the learning process during teaching and

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