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# UTILISATION OF VIRTUAL REALITY (VR) AND AUGMENTED REALITY (AR) IN EDUCATION: A COMPREHENSIVE REVIEW

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**Abstract**

This research explores the utilisation of Virtual Reality (VR) and Augmented Reality (AR) technologies in education through a comprehensive review. VR and AR technologies offer innovative ways to create immersive and interactive learning experiences, enabling students to better understand complex concepts. The study identifies key benefits of VR and AR in education, including increased student engagement and motivation, as well as the provision of practical, real-life learning environments that are difficult to achieve with traditional methods. However, the study also highlights significant challenges that need to be overcome, such as high costs, technical infrastructure needs, and specialised training requirements for educators. Thus, the conclusions of this study emphasise the importance of careful planning and proper support to maximise the potential of VR and AR as transformational tools in education.
**Keywords**: Virtual Reality (VR), Augmented Reality (AR), Education.

## Introduction

Along with the rapid development of technology, the world of education is undergoing a significant transformation. One technological innovation that promises great potential in transforming learning methods is Virtual Reality (VR) and Augmented Reality (AR). VR technology allows the creation of interactive three-dimensional simulated environments, while AR combines digital objects with the real world through devices such as smartphones or smart glasses. (Mariska & Aslan, 2024).; (Ikhlas et al., 2024); (Firdausih & Aslan, 2024).

Virtual reality (VR) is a technology that allows users to enter and interact with computer-generated three-dimensional environments. These environments can simulate a variety of different experiences, from visiting distant places to experiencing situations that are not possible in the real world. (Satpathy et al., 2023).. By using devices such as VR headsets, users can feel the sensation of physically being in these environments. This technology provides an immersive experience, where users can see,