

# Adopting Virtual Reality Learning in Higher Education Institution: Reviewing Literature from the Past Studies

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## ABSTRACT

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Virtual reality is a new technology that has been applied in many different fields. Throughout the years, virtual reality has become incredibly popular. The use of virtual reality applications in higher education is still in its infancy, despite the fact that numerous researchers have outlined the advantages of these learning tools. In general, it took longer to gain the trust of different stakeholders to use virtual reality in the classroom. Virtual reality has recently taken on a more significant role as the nature of learning in higher education institutions becomes more competitive. This study aims to address the idea of virtual reality and its educational applications in light of this concern. In addition, the literature from the past is discussed in this article.

**Keywords:** Virtual reality, technology, learning, higher education institution.

## INTRODUCTION

The number of innovations in today's rapidly evolving technology is growing. Recently, one of the most popular innovation technologies is virtual reality[1], [2], [3], [4], [5]. According to researchers [6], the combination of interaction with virtual objects and the explorer from virtual environment allow people to experience the 3D world that is predominately known as virtual reality. Virtual reality technology today has emerged as important because it significantly gives contributions to many sectors and has been used countlessly in various industries. One of the sectors that have been used virtual reality is higher education institutional. Basically, the development of technology in the education has been affected people lives [1], [2], [4], [7].

Referring to the previous paragraph, it is crucial to define and comprehend the idea of virtual reality. This study serves as the foundation for this paper, which describes the idea of virtual reality, its significance, and its applications across a range of industries.

## VIRTUAL REALITY IN LEARNING

This statement is consistent with a study by [8] in their recent publication. The study has found virtual reality to be an exciting method that generates unlimited possibilities for educators. The various application of virtual reality in education field significantly giving contributions to the student learning, create new opportunities, and increase participation within higher education institutional students [9]. According to research by [10] in contrast to the traditional method of learning, which involves merely passively accepting the knowledge, students could use virtual reality to interact with the environment, conduct independent research, and create their own knowledge structure. Nevertheless, virtual reality is considered as an asset in learning. Hence, virtual reality applications need to be highlighted in discussing the recent rapid technology worldwide.

Extending the above points, a recent study by [11] also found the similar result. They discovered that virtual reality is more interactive and successful than more conventional approaches like e-learning and classroom instruction after conducting experiments with participants in a soft skills training course..

## METHODOLOGY

The literature review examines the body of research on virtual reality (VR) and its application in higher education. The primary sources of information include Google Scholar, IEEE, and the USM Library, using keywords such as "virtual reality," "technology," "learning," and "higher education institution."

## RESULT AND DISCUSSION

Through a review of published research on virtual reality in education, this study discovered studies from a variety of nations.

**Table 1**

International academic research studies on virtual reality in learning

<b>Country</b>	<b>Research Study</b>
Brazil	Piovesa, Passeriono, & Pereira, 2012; [12], [13]
Malaysia	Hashim, Nasir, & Jyn, 2022; Alnagrat <i>et al.</i> , 2022; Farsi <i>et al.</i> , 2021; [11], [14], [15]
Indonesia	Suri <i>et al.</i> , 2023; Faruk <i>et al.</i> , 2023; [7], [15]
China	Yang, 2023; [16]
Taiwan	Lin, Wang, Kuo, & Luo, 2017; Mei & Sheng, 2011; [17], [18]
Jordan	Jawarneh <i>et al.</i> , 2023; [19]

According to table 1 above, researchers has found virtual reality in learning research in many countries such as in Brazil, Malaysia, Indonesia, China, Taiwan, and Jordan. This clearly indicates that virtual reality is important as a subject matter and has gained awareness from researchers around the world.

## LIMITATIONS OF IMPLEMENTING VIRTUAL REALITY IN LEARNING

Technology and digital technologies are crucial in teaching. To impart pertinent skills and pragmatic information to students, it is crucial to familiarise them with a virtual environment, hence enabling them to acquire practical insights via the use of immersive three-dimensional technology. The current education system is founded on the principles of competence and is designed to foster creativity. Like any other phenomenon, virtual reality also comes with certain disadvantages, including its high cost [20], [21], [22] potential for addiction, limited sociability, and absence of genuine communication [19], [23]. Furthermore, it has a detrimental influence on the user's health [21], [22], [24], [25], [26]. Design principles dictate that a 360° virtual reality scene may only be seen from a single perspective. Space does not allow for freedom of movement. Interaction is constrained to the activation of certain interaction icons [13].

## CONCLUSION

Generally, virtual reality in learning is definitely growing and leading the path in the educational system. Essentially, the effectiveness of virtual reality in learning needs to be further evasive to attract students in higher educational institutions. Hence, consistent collaborations with the researchers from various industries need to be strengthened to ensure learning methods could be varied. It is recommended to researchers to look forward to this collaborations and making virtual reality as an incredible teaching methods in learning. In fact, the implementation of virtual learning in educational needs to be aggressively by providing accessibility and affordability.

Extending to the above paragraph, students recently are exposed to the rapid technology, thus, the implementation of virtual reality in learning seems relevant to them especially students in higher educational institutions who basically have hectic schedule and taking up to six subjects in one semester. Students nowadays are more intellectual and interested in learning about new things, especially regarding technology. At the same time, it's noteworthy that virtual reality is a powerful tool for boosting their enthusiasm for learning.

Basically, this study contributes to the researchers by providing theoretical standpoint and practical standpoint. This study examines the idea of virtual reality from a theoretical perspective, which offers insightful data on contextual applications. Practically speaking, this study gives industry participants useful information for creating and implementing virtual reality learning strategies.

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