Chapter 16
Improving Academic Specialization Choice in Higher Education in Oman Using Virtual Reality (VR) Experiential Learning

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ABSTRACT

For any student, picking an area of academic specialization is a pivotal moment that impacts their future career progression and personal fulfillment. Traditional methods like career counseling and information sessions often fail to give learners the necessary experiences to help them make informed choices. This realization necessitates a comprehension of pupils' transitions between academic disciplines. For this reason, this chapter has been rolled out to investigate the potential use of immersive virtual reality (VR) as a novel tool to enhance experiential learning and aid students in their academic specialization selection process. The work helps to assist students better if they understand the elements that contribute to happiness or discontent while choosing a study major. Teachers, career counsellors, students, and employers making decisions about their educational route may all benefit from insight into the variables influencing the choice of study and the link between decision-making processes and the degree of satisfaction after using the virtual reality platform.

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1. INTRODUCTION

The traditional methods of exploring academic selections come with several limitations. First, the method is attributed to a lack of immersive experiences as the methods fail to offer students the hands-on and interactive experiences required to get a proper understanding of diverse fields (Hawes & Arya. 2023). The students make misinformed choices due to the reliance on static information and limited engagement. The method also comes with inaccurate representations as they only give an idealized picture of academic specializations, thereby neglecting the challenges and realities of this field. This disconnect mostly leads to disappointments once the students begin their academic journeys. The traditional methods also come with the disadvantage of limiting information to students regarding various academic specializations especially those that are offered in other institutions and niche fields. This results in students being restricted in their exploration journey, limiting their potential choices. The other disadvantage is that traditional methods offer limited opportunities for students to assess their interests, skills, and motivations in specific academic fields. This can make it challenging for them to identify the specialization that aligns best with their aspirations. The other challenge is seen in that the traditional methods also come with a lack of support for the students to enable them to make decisions during the academic specialization selection process (Hawes & Arya, 2023). This usually leads to confusion anxiety, and eventually suboptimal choices. Furthermore, existing research, as exemplified by Silver's study, has predominantly focused on quantitative analysis of significant changes, overlooking the qualitative aspects and the transitional experience of students between specializations. He found that around 38 students, influenced by external factors such as parental desires, find themselves on unsuitable academic paths, leading to a lack of enthusiasm for their chosen field (Silver, 2023).

Therefore, many ways contribute to solving this problem, such as using virtual reality with artificial intelligence techniques. Virtual Reality is a simulated experience that employs pose tracking and 3D near-eye displays to give the user an immersive feel of a virtual world. This is what is essential that the student feels the virtual environment is reality (Soliman et al., 2021). Previous studies have developed Virtual Reality (VR) in different domains like Education, Engineering Experiments, Healthcare Training, Treatments, and Consultations. For example, the existing research done by (Barkokebas et al., 2019), this work proposes an approach to assess the training for assembly/disassembly and maintenance of machines developed for the construction manufacturing industry by using immersive virtual reality. In addition, another research paper was done by Christie Hurrell and Jeremiah Baker in 2021. This paper describes the configuration, access policies, and outreach activities around the library’s VR services and spaces and discusses in more detail how VR