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The Metaverse Design and Evaluation in Product Design and Evaluation

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Abstract

The COVID-19 pandemic prompted a shift to online learning, ushering in a variety of platforms like SUT-Elearning, Zoom, and Google Classroom. However, these platforms have limitations in replicating classroom dynamics and fostering interaction. To tackle this, the concept of a metaverse classroom is introduced, aiming to enhance engagement by exploring the metaverse's origins, features, and educational benefits. This study delves into integrating metaverse technology into online education, using Suranaree University of Technology's product design and development course as a model. Built on Bloom's Taxonomy, the course merges project-based and problem-based learning. The investigation outlines the gradual creation of a virtual classroom aligned with these traditional approaches, detailing its functions, components, and limitations. Following this, the classroom design is evaluated through student feedback gathered from interviews and surveys. Students assess the design's merits and drawbacks and make comparisons between the metaverse, physical classes, Zoom, and video-based learning. Results drawn from feedback from 20 students highlight a preference for physical learning, closely followed by the metaverse, which excels in engagement over Zoom and video. The metaverse also excels in real-time interactions, with minor differences in self-directed learning. Proposing metaverse integration as a catalyst for enhancing online education and immersive learning, the study underscores its potential to heighten real-time engagement and contribute to innovative instructional methods. These methods play a vital role in effective online education, particularly in the ever-evolving educational landscape.

Keywords: Metaverse, Metaverse for education, Product design and development