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Extended Reality for Experiential Learning from Students' Perspective
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Abstract
Nowadays, the world is moving towards extended reality (XR) that offers a whole new world for wider opportunities in education, training, resource accessibility, and community engagement. Virtual reality (VR), augmented reality (AR), and mixed reality (MR) is part of XR as immersive technology that closes the gap between the real and virtual world. In education, VR was used to access practical training during restricted movement. The use of XR technologies has improved learning engagement and outcomes. However, there is limited application of MR in education where the learners can interact with the virtual object to learn to know, do, be, and live together. Thus, this paper aims to present the design, development, and implementation of an XR application that integrates gamification elements to improve student learning engagement. The XR application was developed using Metaverse Studio. Meanwhile, available open source, such as YouTube VR videos, provide a virtual learning experience. Furthermore, an online quiz was also compared with other students who did not experience learning with XR. Furthermore, findings on the online survey enlighten some essential factors in developing an XR technology application for education. © 2023 IEEE.

Author Keywords
augmented reality; education; Extended reality; mixed reality; virtual reality

Index Keywords
E-learning, Mixed reality, Students; Community engagement, Education training, Education virtual, Experiential learning, Extended reality, Immersive technologies, Mixed reality, Real-world, Student perspectives, Virtual worlds; Augmented reality

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