

Impacts of Collaborative Learning and Metaverse Technology on Student Engagement

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Abstract

This presentation explores a blended and interactive metaverse learning app that our team developed, and shares our team's experiences on how implementing this metaverse learning app in a flipped classroom approach can significantly enhance student engagement and collaborative learning. Implementing metaverse environments with Generative Pre-trained Transformers (GPT), our learning app utilizes GPT-powered avatars within the metaverse to generate immersive educational simulations in medical sciences education. By incorporating GPT's dynamic content generation, we aim to provide immersive, versatile and engaging learning experiences for students. This combination of metaverse and GPT transcends traditional learning into an innovative and interactive platform that enhances student engagement and collaborative learning through realistic simulations including selected clinical cases and doctor-patient role play scenarios. We conducted survey questionnaires on the practicality, effectiveness and usefulness of the metaverse learning app, and analyzed students' feedback and comments both qualitatively and quantitatively. Our results revealed positive impacts of collaborating learning and metaverse technology and their beneficial effects on both course performance and student engagement. These peer collaboration and interactive activities not only enabled students to acquire experiential learning, but also strengthened their knowledge in core concepts and critical thinking. Overall, we conclude that our metaverse learning app can strengthen student learning in medical sciences, significantly enhance student engagement and collaborative learning, and provide a novel and useful learning tool in medical sciences education.

Keywords: immersive; interactive; blended; flipped classroom; generative pre-trained transformers (GPT)