香港城市大學
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MEDIACITY - A metaverse space for learning media and information literacy with computational thinking

Project Number: 6000816

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Grant Type: TDG

Abstract:

The goal of this virtual teaching and learning project is to build a metaverse city (MEDIACITY) where students interact with virtual objects and characters to acquire problem-solving skills related to media and information literacy. Problem-solving scenarios in media and communication will be used in the metaverse to help students develop skills through hands-on activities that resemble those in the real world. I will also incorporate computational thinking (CT)—the algorithmic and logical mindset behind computational techniques—as part of the learning to help students explore, analyze, and understand ways to examine and interpret information.

Students researching topics with a multi-stakeholder impact, such as social networks driven by complex socioeconomic factors where they have no prior knowledge or expertise, can face a steep learning curve. MEDIACITY can simplify and improve student learning by using an education-centric metaverse with immersive and realistic environments, interoperable scenes, and virtual agents (robots) as a virtual learning environment to scaffold students' learning. Students will also learn to use CT techniques to enhance their media and information literacy.

In this project, students will have the opportunity to complete six learning scenarios of 20 minutes each, based on inquiry-research-based learning in six metaverse scenes (all in one city). For example, students will be given missions presented as research questions and will be required to employ the CT framework to identify problems and evaluate solutions. The metaverse also includes virtual agents that support scaffolding and narratives, generate learning analytics, and can be customized using authoring tools. A series of pre-post experimental studies will be used to assess if learning in the metaverse improves CT as well as media and information literacy. It is expected that as students interact in the metaverse, they will improve their problem-solving skills and enhance their media and information literacy.

Overall, this project combines CT with immersive learning (metaverse) to facilitate research- and inquiry-oriented learning in dealing with media and information literacy challenges. The learning environment in the metaverse, particularly the use of a novel metaverse-integrated CT teaching method that is cross-disciplinary, not only helps to enhance students' CT skills as well as media and information literacy, but it can also benefit students in various other disciplines such as engineering, business, law, psychology, social sciences, public policy, and computing.