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Harness MUVR innovation to support interdisciplinary BIM collaboration

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Abstract:

Technological change is accelerating today at an unprecedented speed, and the world would be unrecognizably different. This exponential change affects the tertiary education as the existing learning models must be embraced with the new technology to prepare young generations for the future. Building Information Modeling (BIM) is an emerging technology in construction, and its adoption has evolved substantially in recent years. As such, students are encouraged to adopt technology in their learning through the use of BIM at every available opportunity. This not only creates students' learning interest but also inspires them on how to use new technology to solve real-life problems. The use of innovative technology creates many opportunities for self-directed learning, and this in turn helps students to develop their approach for lifelong learning. One of the reflections in BIM research is the adoption of VR technology that currently triggers a significant paradigm shift in the construction industry. Many studies proved that VR applications in the learning environment could open a fresh and advanced learning experience for students. However, the consumer VR system is popularly designed for a single user who manipulates through the controllers alone without communication and collaboration with others. One of the reasons is to avoid considerable computer programming tasks for the multi-user setting that involves the sophisticated development of software and hardware. In reality, construction professionals come from various disciplines, and an interdisciplinary approach is vital to address today's complex engineering and construction problems. As a result, the proposed multi-user VR (MUVR) system is a possible solution that enables a shared experience among students and opens new possibilities for teaching and learning. This proposal presents how the CityU BIM experts team up with the programmers to develop the MUVR system. By utilizing the system, it is expected that students can capitalize on its integration with BIM to enhance efficiency in problem-solving in an interactive and collaborative environment. As the construction project team is dependent on interaction with others, the MUVR system can foster this interaction among students who no longer learn in isolation. Instead, they are able to work together in teams and use innovative tools and resources to learn.