Immersive Education for Construction Students and Workforce – Learning through Experience

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Principal Investigator: Dr. Chi Kwong WONG

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Abstract:

The proposal aims to develop a virtual reality (VR) application as a pedagogical tool in construction safety education and training. Currently, most of construction safety education and training rely on traditional teacher-centered approaches to student learning, but there are few effective interactive methods which can truly give students opportunities to engage in the class. VR technology was found to have great potentials to transform the conventional education delivery methods since it provides users the ability to learn the knowledge through experiencing various situations in an immersive, interactive and 3D virtual setting. Safety education and training are considered to be the most challenge task for construction professionals because construction engineering is predominantly descriptive and complex. In addition, construction safety training is often delivered by rote, which makes more difficulties for trainers to quantify the effectiveness of safety training, such as paper-based tests. With the purpose of improving construction safety performance in education and training, this project proposes a new training solution based on Virtual Reality to help users better understand and learn safety standards, rules and regulations through experience as well as assess their performance in applying the knowledge into practice after taking safety courses and training. Although the scope is limited to construction safety education and training, the project can be extended to other civil engineering fields (e.g., construction technologies) and other domains (surgery training in the school of Veterinary Medicine, liberal arts, etc.).