Project initiative and aims

Virtual reality (VR) is widely adopted in classroom teaching and it has been proved to be effective in delivering knowledge to university students. 360-degree photos and videos are closely resembling a real world. With the support of virtual glasses, students are able to "visit" the architecture virtually through viewing the photos and videos. Each "visit" would save the school a considerable amount of financial expenditure and avoid potential risks on organizing on-site visits. Further, students can focus on specific architectural design features and observe the details of the architecture closely and vividly. This project aims to contribute in enhancing students' understanding of green buildings and heritage architecture by using virtual reality technology to create virtual site visit.

Project deliverables

This project produces two VR videos – Zero Carbon Building and Asia Society (the Former Explosives Magazines of the Old British Barracks of Victoria) for students to experience the virtual site visit. For the first video, students can embark a tour at the Zero Carbon Building virtually by reading the pop-up texts and listening the narration that introduces the development background, development process, green architectural design and active green technologies, etc. For the second video, students are able to learn the history of the British Colonial Hong Kong, the former use of historic buildings of the former Victoria Barracks, the conservation approaches and revitalization strategies of heritage in Hong Kong through the "virtual site visit". The videos allow students to access the architecture flexibly and explore the details of the architecture at their own pace and preference. The project enables students to develop a comprehensive understanding of green buildings and heritage architecture in the classroom without paying an actual visit at the architecture.

Project implementation

The VR materials were used in three courses I teach: Facilities Development and Management for Real Estate and Hospitality Industry; Heritage Tourism; and Revitalization of Historic Buildings. The courses are divided into two parts: (1) theory and principle; (2) practical cases and site visit. The virtual site visits were organized in the second part of the course after students were taught basic knowledge, such as architecture development and design, heritage conservation strategies and methods. Students were asked to participate in the virtual site visit in the classroom. Since not all the students can adjust to viewing videos with VR glasses, students can choose the view the web version or view with the VR glasses. They can insert their own headphones to listen to the narrations without being disturbed by other students. An exclusive site visit was created for every student. Students were asked to complete a test (or tests for viewing the Zero Carbon Building) to evaluate the effectiveness of the VR videos. The result of the tests show that the VR videos are effective in facilitate student learning.

Student feedback

Overall, students provide very positive feedback regarding the virtual site visit arrangement. They suggest that more VR videos or innovative methods should be used in designing the curriculum and course teaching.

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