

# Using VR Technology to facilitate Real Estate Education

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## Abstract



Although widely adopted in industry and business practices, technology-led innovation appears being applied rather slowly in the tertiary real estate education. Using a recent experimental case in a real estate program from CUHK, this study focuses on the design, development and implementation of an innovative teaching model with VR integration. The study reports the student feedbacks towards the teaching innovation and identifies role and benefits of VR technology in real estate education. Findings from the study have implications for future global real estate industry practice and education.

## 1. Introduction

It is increasingly realised that new technology facilitates innovative thinking and new knowledge is critical to high quality tertiary education. With an experimental case of a real estate course using VR technology, this study aims to explore the following interrelated questions: (1) what are students' perceptions of integrating VR technology in real estate course and curriculum? (2) what are VR technology's role and benefits in real estate education in terms of subject design and delivery to influence critical thinking, effective learning, and connection to actual practices?

## 2. Methodology

- Case study as the main research approach

Case study is adopted as the main research approach in this study and an experimental real estate course is used as a case to examine the effectiveness of VR technologies and students' perception regarding VR technologies in real estate course learning process. An innovative teaching model id designed to guide the course design and implementation.

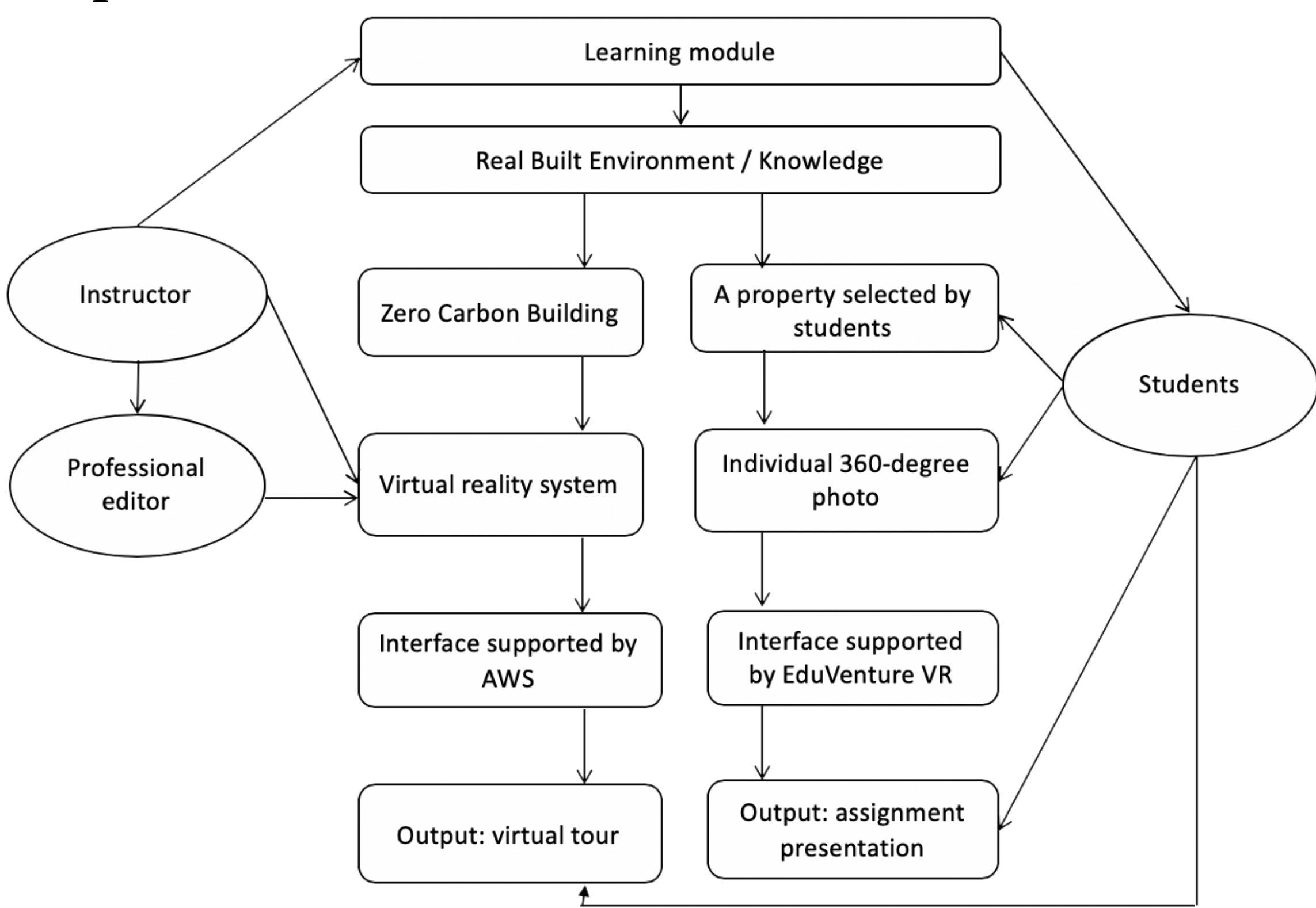


Figure 1. An innovative teaching model integrated with VR technology

- Keller's ARCS model and students' perception evaluation

The virtual site visit (organised in one lecture) supported by the VR system was designed based on Keller's ARCS (1987a) model. ARCS stands for attention, relevance, confidence and satisfaction. ARCS model guides educators to design teaching activities or materials that can (1) catch and sustain students' attention; (2) relate to students' needs; (3) ensure students that they are able to master the knowledge / skills successfully; (4) assist students to have a sense of achievement and pride (Keller, 1987a). The ARCS model requires a satisfaction survey regarding the students' acceptance of the teaching material. Thus, a satisfaction survey was conducted to assess students' satisfaction level regarding the virtual site visit.

## 3. Design and Delivery of a VR-enhanced Real Estate Subject from Hong Kong

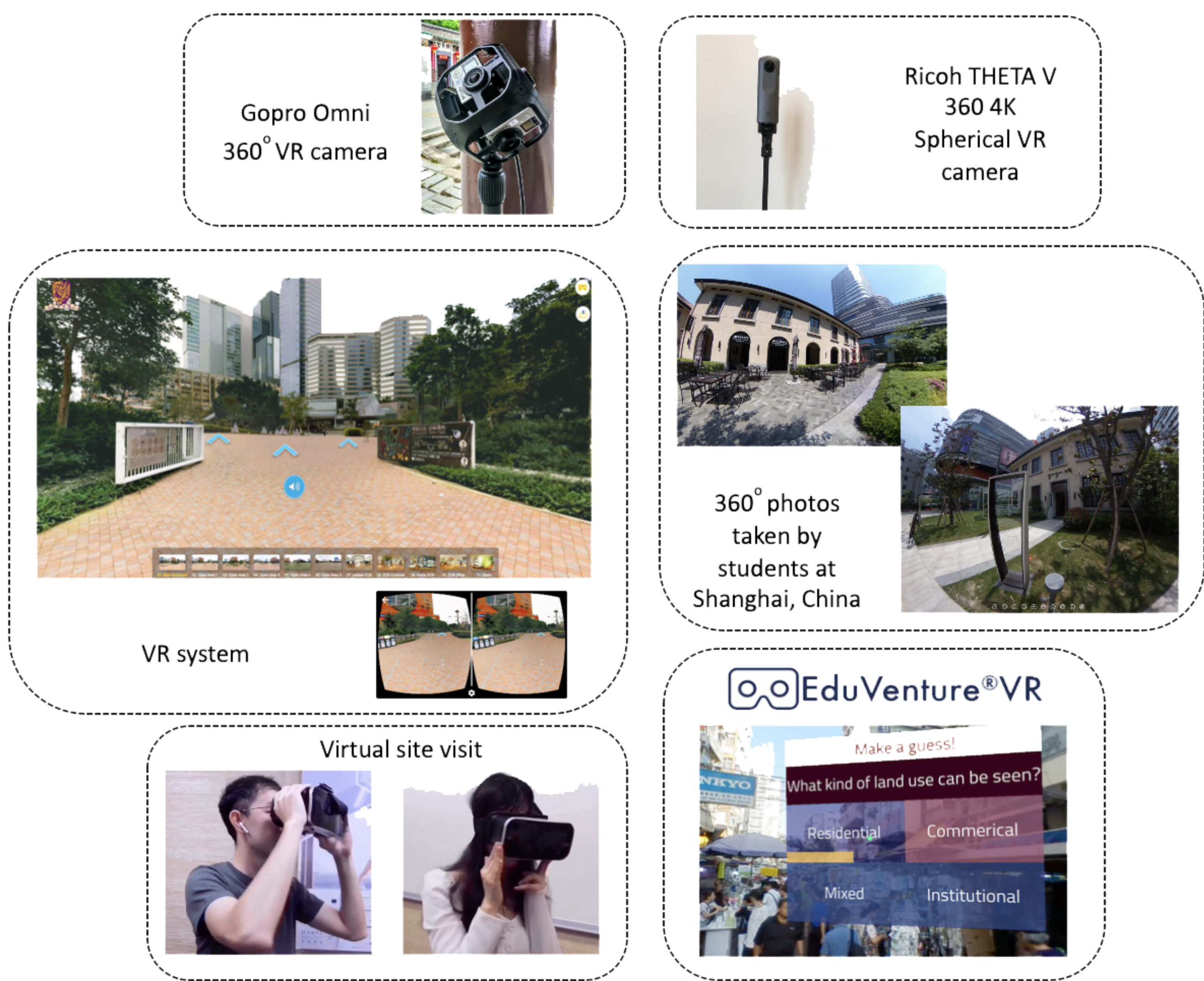


Figure 2. Demonstration of the model development and student engagement

## 4. Students' Perception

Table 1. Questionnaire instruments and results for satisfaction survey

Questionnaire instrument	Mean	Std. Deviation	Number of students
1. Sense of achievement post VR material viewing	3.50	.933	24
2. Interest development due to enjoyment of the VR material.	3.29	.690	24
3. Appreciation of the VR material as supplementary in the course	3.96	.955	24
4. Creation of a sense of meaningfulness through the VR experience.	3.54	1.062	24
5. Personal enjoyment due to opportunity to view the VR material.	3.83	.963	24
6. Enjoyment of the VR material for its elaborating design.	3.83	1.007	24

Table. 2 Range of satisfaction level

		Level of satisfaction				Cronbach's Alpha	Mean
		High	Upper medium	Medium	Low		
Satisfaction (6 items)	Scores	4.0-5.0	3.5-3.99	3.0-3.49	<3.00	.769	3.66
	No. of students	9	8	4	3		
	Percentage	37.5%	33.3%	16.7%	12.5%		

Table 1 and 2 indicates students' satisfaction level of the virtual site visit. The Cronbach's Alpha is 0.769, which indicates that the 6 questions have relatively high internal consistency. As Table 1 shows, the highest score is question 3 (M=3.96), and the lowest score is in question 2 (M=3.29). Table 2 shows that 37.5% of students have a high satisfaction level and 33.3% of students' satisfaction level is between 3.5 and 3.99, falling in an upper medium level. 12.5% of students have a low level of satisfaction towards the virtual site visit. It indicates that students were overall satisfied with the virtual site visit.