

Project Title :	Reinforcing the Importance of Academic Integrity and Ethics in Students with Blended Learning – A Deployment of Augmented Reality Applications
Leading University :	Hong Kong Baptist University
Participating UGC-funded University(ies) :	The Chinese University of Hong Kong, The Education University of Hong Kong, The Hong Kong Polytechnic University
Project Leader(s) :	Dr Eva Wong, Centre for Holistic Teaching and Learning, Hong Kong Baptist University

Layman Summary of Proposal

Classes, tutorials and learning activities to help students understand the meaning and importance of academic integrity and ethics are now common practices in many, if not all, tertiary institutions. Their aim is to emphasise to students that being a university graduate goes beyond studying and getting good grades; having sound academic integrity and behaving ethically requires proper conduct for their personal development and also their future profession and career. Yet, despite our efforts, even with enforcement of students' declarations and severe penalties for misconduct, cases of plagiarism, disregard for intellectual property, data fabrication and breaching of rules specified for the conduct of examinations still arise with alarming regularity. Worse still, the advent of information technology (IT) seems to have exacerbated the issue of observing academic integrity. While there are seemingly unlimited information and resources readily available on the internet, guidelines and principles on how to properly use such resources are sparse and often unclear.

This project aims to make use of IT to combat an important issue brought on and worsened by IT itself. It will make use of the latest advances in augmented reality (AR), coupled with mobile technology where appropriate, to bring scenarios of academic integrity and ethics to real-life situations for students.

The scenarios can be developed based on subject matter, e.g. in health sciences or medicine, where students will face cases of ethical dilemmas specific to their disciplines. In a general situation, for example, with geolocation data mapped out for

a university campus, students can walk through an ‘ethical induction’ learning trail. Students can make use of their mobile devices to retrieve different information, produce different responses, and even consider different ethically related decisions under different circumstances and in different locations. Furthermore, their responses can be gathered and further discussed online within a learning management system (LMS), or in-class within relevant ethics-related courses.

By immersing students into situations where additional information and resources are available via AR applications, and the consequences of their decisions and actions can be played out, it is envisaged that such an approach, particularly when used to support and complement classroom engagement, will reinforce the links between theoretical learning about academic integrity and ethics, and the practical application of such learning in real-life contexts.

Layman Summary of Final Report

To better educate students in the 21st century, it is essential for universities to put a special emphasis on academic integrity and ethics (AIE) to assist students in their personal development and future professional careers. This UGC-funded, 4-year project aims to enhance teaching and learning by immersing students in a learning environment supported by innovative digital technologies whereby students will be motivated to learn about AIE issues, engage in learning activities, and share their experiences in making ethical decisions and acting with integrity.

To this end, the project employed an AR interface accessed on mobile devices to bring AIE scenarios to life for students in everyday campus contexts. Mobile learning paths called ‘Trails of Integrity and Ethics’ (TIEs) have been established on Hong Kong university campuses. While exploring a TIE using an AR app, students would walk through locations where ethical dilemmas might arise, they could then analyse and respond to a range of problematic cases. Apart from a TIE-General covering common AIE issues, subject-specific TIEs have been developed in which students face ethical dilemmas specific to their disciplines and are tasked with responding according to professional norms and standards.

During the course of the project, a total of 11 TIEs have been established and over 6 200 university students from the four partnering institutions had experienced the TIEs. Analysis of data from their mobile device clickstreams, pre- and post-trail reflective texts, and user experience surveys suggested that the trails have been effective in

helping students link abstract conceptual knowledge with everyday realities. Students have become more actively engaged in their learning; developed more personalised understandings of AIE; and, particularly through generating learning content for their peers, have enhanced their own learning.

In terms of outcomes and impact, the project is very successful. The experience of the project and positive results from the data analysis have been disseminated widely in academic conferences (including two keynote presentations in 2017 and 2018) and publications by all members involved. The project has also received international recognition through awards and showcases. Full details of publication and awards are included in the project website, URL – <https://arlearn.hkbu.edu.hk/>. Pertinent examples include:

Year	Awards & Showcases
2015	Silver Award (Regional Award Asia) , the second Wharton-QS Stars Reimagine Education Awards
2016	Certificate of Merit , e-Learning Excellence Awards, Academic Conferences and Publishing International (ACPI)
2017	Showcased on Drexel University Online’s “Virtually Inspired” website, a website showcasing innovations in online learning
2017	Best Chapter Award , <i>IAmLearning: Mobilizing and Supporting Educator Practice</i> (an open-access e-Book publication)

The developed TIEs and the associated teaching and learning activities have continued to be operational beyond the end of the project to benefit more students. Furthermore, interests have been shown by other institutions both locally and abroad in adopting the TIE model developed by this project into their respective environment. Based on the success of the TIE-Business in bringing this AR-learn approach to secondary schools, further initiatives to facilitate university students to engage secondary school students in learning have been planned for ensuing years. It is envisaged that the outcomes and benefits of this project will continue to be impactful in the education sector within and outside Hong Kong.