Bioethics is a core curriculum in medical education whose primary goal is to enhance students' ability to care for patients and families, and their communities. Bioethics curriculum covers a wide range of ethical issues in biomedical sciences, clinical practices, medical professionalism, public health, and law and policy. With bioethics as a tool, students and clinicians are able to address ethical problems in everyday practice.

Quality bioethics education is challenging due to a lack of time in the medical curriculum, qualified teachers and coordinated scholarship across disciplines, and objective/validated assessment and evidence-based evaluation. All these barriers result in inconsistency and incoherency in teaching of normative accounts and value-driven bioethics. Bioethics is one of the disciplines requiring an innovative pedagogy to stimulate medical students' interest in learning and exercising moral reasoning.

The primary goals of this project are to develop a blended e-learning bioethics course and evaluate the course using pre- and post-course survey and focus group discussion. There is a paucity of evidence regarding its effectiveness of bioethics education and clearly defined evaluation. Few studies demonstrated the evaluative outcomes in terms of knowledge retention, attitude changes, and enhanced ethical competency. In line with the university aim of evidence-based e-learning, we propose to evaluate the effectiveness of the course and identify the suggestions for improvement.

This project developed materials for the e-learning and in-classroom tutorials. Each video lasts about 5-10 minutes and students are expected to watch the online video and do the readings before attending the in-classroom lecture, tutorial, and discussion. Topics covered common ethical challenges encountered in medicine and related to biomedical technologies. ranges of topics, including 1) biomedical principles, 2) medical ethics, 3) genetic disclosure, 4) care for the elderly, 5) public health, 6) resource allocation (organ donation) and 7) research ethics.

The study found students' positive attitudes towards bioethics e-learning courseware. The e-learning courseware helpful in acquiring more knowledge in bioethics, critical thinking and problem-solving skills. Students valued flexibility account of integrating e-learning platform in the schedule and exploring knowledge initiatively. Significant increases in self-efficacy of ethical reasoning were found. After taking the course, students reported that they were more confident in conducting decision-making. However, about 20% students found it difficult to discuss the assignment with peers actively. Focus group evaluations identified the factors that determine the quality of the e-learning, including duplication of learning materials, lack of clear explanation on ethical dilemmas, local relevance and career prospects.

The course provided students with active learning not only as adaptive, individually tailored to the level of students' knowledge but also collaborative via interactions among students utilizing IT technologies and classroom. Students had a unique opportunity to learn bioethics by interacting with internationally renowned bioethics teachers. Based on the findings from the focus group evaluation, the e-learning modules will be refined. In the curriculum of senior clinical years, we hope that students will apply knowledge learned in the pre-clinical years to analyse case studies in conjunction with the clinical modules.