Pilot Empirical Studies of the Use of Wait-time for Adaptive Active Learning

Project Number: 6000358

Principal Investigator: Dr Alvin Chi Keung LAI

Grant Type: TDG

Abstract:

Wait-times, the pauses before and after a student response, in teacher-student interactions are known to be related to deep reflective thinking in diverse disciplines. From 1970 onwards, evidential studies have been mainly observational and passive. A new timing tool will enable another dimension of empirical studies. For the first time, timing can be controlled as an independent variable in real-time experiments in face-to-face interactions. In addition, the timing tool can be incorporated into online learning activities and assessments.

Pilot experiments will be designed for I BC course and I CS course. The data collected will be analyzed and correlated with learning levels and student abilities to provide preliminary empirical evidence that wait-time is indeed an important tool for active learning. The evidence will support new instructional designs for in-class and online learning.

Subsequently, trial experiments will be conducted with one inter-institutional collaborator.

For online learning, the timing tool will mitigate some previously perceived disadvantages of the asynchronous delivery mode. We would initiate applications in online debates or contests for BC design projects.

We shall investigate deploying the timing tool on mobile learning devices.

Outcomes will be evaluated by the team, external collaborators and students for user-friendliness and effectiveness for reflective learning. Deliverables will include the timing tool and two conference papers.