Part B. Project Summary

Project Title:	Project Number:
Flipping the classroom to boost student-led learning through an intelligent tutoring system	2013/0518(Revised)

Name of Organization: Queen's College

Goals and Objectives:

This project aims to harness the power of knowledge management and advocate the idea of assessment of learning in order to enhance the learning & teaching of students and teachers through the use of an intelligent tutoring system. This project involves teachers making pre-recorded mini-lectures to co-teach a Liberal Studies course at Form 2. Through flipped pedagogy, students will prepare the readings and view the mini-lectures before class. Jotting down notes and questions, students come in to class prepared for group discussion and collaborative learning. Class time will be directed to student-led learning instead of didactic pedagogy. Since students in Queen's College are mainly high achievers and willing to try different pedagogies in order to facilitate their learning, it is believed that this project can guide them to learning independently and proactively.

The detailed goals and objectives for each party are listed as follows:

(a) Students
i. Review pre-recorded lectures with lecture notes on an intelligent tutoring system
ii. Comment or highlight questions directly on course notes that are downloadable and printable through an intelligent tutoring system which aims to promote the critical thinking skills of students
iii. Fully take charge of the lesson by preparing before class, and raising discussions in class to achieve student-led learning
iv. By implementing the student-centered learning approach, students are able to become active learners which is important for their life-long development

(b) Teachers
i. Pre-record mini-lectures through motion-recording technology enabled by an intelligent tutoring system
ii. Facilitates knowledge capturing of students' questions through the Q&A system on an intelligent tutoring system so that teachers have a better understanding of the difficulties that students have in their learning
iii. Monitor students' progress through Q&A system and after-reading quizzes
iv. Alleviate the burden of sacrificing after-work hours to deliver tutoring sessions for students falling behind
v. Encourage co-teaching of LS curriculum (each teacher can take charge of a specific topic across the whole form)
vi. Review mini-lectures conducted by other teachers to achieve peer learning and knowledge sharing

(c) Schools
i. Raising teachers' morale through dramatically reducing the demand on teacher-led tutoring sessions after school
ii. Pooling resources and expertise to make a larger impact
iii. Flipping the classroom by turning traditional lecturing style to a student-led learning environment

Targets: S.2 students and teachers of Liberal Studies course

Expected number of beneficiaries:

Students, and LS teachers involved in 4 classes of S.2 = 144 students + 4 teachers = 148 beneficiaries

Implementation Plan

Duration: 15 months; Schedule: Jan 2015 - Mar 2016;
Collaboration with other parties: An Associate Professor of a local university as consultant

Products and deliverables
(a) Training workshops of one and a half hour duration organized by a local university will be offered to teachers and students (more workshops can be arranged if necessary)
(b) Pre-recorded mini-lectures and notes
(c) A book on a new mode of teaching and learning - flipping the classroom
(d) 2-hour seminar / workshop to share with local teachers and educators on how this project can be implemented in other schools

Budget

Staff	Services	Equipment	General Expenses	Contingency	Total
$170,100	$50,000	$57,000	$8,000	$3,500	$288,600

Evaluation (performance indicators and outcome measurements)
(a) Effectiveness of flipped pedagogy through comparison of students' performance (pre- and post-intervention)
(b) Program effectiveness evaluated through questionnaires and interviews with different parties