Symposium on Engaging Undergraduates in Research and Inquiry:

A Scholarly Dialogue, May 20, 2011, HKUST

1. Project/Course title

Teamwork Development through Inquiry-based Learning in Laboratory Courses and Final-year Projects in Chemical and Biomolecular Engineering (CBME)

2. Project/Course team

Name	Institute	Post	Department/ Division	E-mail
Course Instructor/Project leader: Prof Edmond KO		Director	Center for Engineering Education Innovation	keedko@ust.hk
Members (if any): CBME faculty				

BEFORE

3. Project/Course objectives (Intended Learning Outcomes)*(Suggested number of words 30-40 words)*

What did you intend students to learn from this project/course?

The project objective is to develop students' teamwork skills systematically through explicit instruction, opportunities to practice, and formative feedback in two laboratory courses during their second year and on final-year projects during their third year in the Department of Chemical and Biomolecular Engineering.

DURING

4. Inquiry Based Learning Activities(*Suggested number of words: 75-85 words*)

What did students do (inquiry-based learning activities) during the course/project?

Teamwork training, with an emphasis on active listening and establishing trust, was provided in the first laboratory course and reinforced in the second laboratory course and final-year projects. Students were asked to reflect on their individual and team performances and carry out self and peer assessments periodically by using surveys and an assessment rubric. The evaluation results were shared with them and specific suggestions were made on areas that they could improve.

AFTER(*Suggested number of words for items 5&6: 50-60 words*)

5. How did you assess the effectiveness of students' learning?

Please give an account of the assessment methods and results.

Students' learning is assessed by: (i) pre- and post-test of students' knowledge of teamwork skills; (ii) quantitative data derived from surveys on the performances of team members and the team as a whole; (iii) evaluation with an assessment rubric by self, peers, and faculty; and (iv) focus group interviews conducted by staff of the Center for Enhanced Learning & Teaching.

6. What were the major outcomes of this project/course? Do they match with your

   Intended Learning Outcomes (objectives)?

Examples of outcomes include educational software, improvement in student learning or change in student attitude.

Assessment data show that students' awareness towards teamwork skills has been enhanced. Receiving timely feedback and having the opportunity to practice helped them build trust and deal with conflicts constructively.   Many students, however, viewed teamwork as a mere division of labor. There is a need to improve communication among team members and promote collaborative learning in future work.