Symposium on Engaging Undergraduates in Research And Inquiry:

A scholarly Dialogue, May 20, 2011, HKUST

1. Project/Course title

Inter-University Robocon Robot Contest

2. Project/Course team

Name	Institute	Post	Department/ Division	E-mail
Course Instructor/Project leader:				
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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 activity aims to help the students to:

- Integrate and apply multidisciplinary knowledge to design and build complex systems
- Develop critical thinking skills and innovative ideas for problem solving
- Develop teamwork and communication skills
- Achieve the optimal goal and design by project management skill on the limited resources and time constraint
- Develop a positive approach and attitude towards lifelong learning
- Re-enforce their learning through exchanging knowledge and experience with other team members and also with other teams from different universities.

DURING

4. develop the attitude of life time learning (*Suggested number of words: 75-85 words)*

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

During this contest, students were required to work in teams and developed their robots to compete with other university teams. The theme and rules are unique every year, depending on the organizing country of the Asia-Pacific Broadcasting Union of that year. Therefore the contest itself was very challenging, and it took many brainstorming meetings among students, technical staff and team instructors to discuss the strategies, methods and technologies required to achieve the goal. The technical staff and team instructors were mainly acting as facilitators, and students were required to identify appropriate technologies, gather useful information, source suitable components, and design and build the robots. During the design process, prototypes were often firstly built to test concepts and ideas. A special room was set aside in the laboratory for students to work on the robots whenever they were free to do so. Students from different teams were encouraged to share knowledge and information. After the robots were built, the students were required to test the robots on a section of the game field, rehearse the procedures of the contest and streamline the robot repair process during the competition.

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.

The students' design and strategies were tested during the competition. Afterwards, reflection meeting was organized to reflect on the learning experience and also discuss the improvement needed for the future competition. Experience sharing meeting organized by the competition organizer also helped students to learn from other universities. Informal visits to other universities were held after the competition every year and these visits also helped students to widen their horizons and reflect on their ideas and achievements.

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.

The robots, game strategies and streamlined repair process developed by the students are the concrete evidence to show students' achievement of students having achieved the intended learning outcomes. In addition, the team spirit and friendship developed among students help them to form future learning partnership.