RESULTS OF AN INNOVATIVE APPROACH TO LEARNING VIA PEER-TO-PEER UNDERGRADUATE MENTORING IN ENGINEERING TECHNOLOGY LABORATORIES

There is a need for skillful technologists with creative design and application aptitude for both hardware and software. Project-based labs, developed collaboratively with the industrial board of advisors, supplementary and background information delivered with the help of peer leaders had been proposed to promote increased inquiry-based learning and overall student engagement, and provide students with a window into the industrial world.

To promote best practices, a hands-on approach was introduced to motivate and engage students in their laboratory work. The CLABS model was implemented in the development of new laboratory assignments for creative activities with special attention to cognitive process and diverse learning styles. Concept Maps (CMAPS) were used to engage the students with content and facilitate learning.

This presentation displays the CLABS experiment model; assessment activities and how they tie to project objectives; sample student grades and class average scores to demonstrate the success of the methods; the first year's findings; and future directions.

FUTURE PLANS

Through mentoring, CMAPS and CLABS,

- mentees became more knowledgeable about their experiments
- mentees could technically explain their solutions
- more interaction among teams was observed
- mentees demonstrated enhanced base knowledge retention
- mentees could discuss and analyze various CMAPS in the context of concepts learned
- mentees showed desire to become mentors
- combination of tutoring and mentoring increased mentees' engagement
- informal mentoring sessions increased mentees' participation

This project is supported by National Science Foundation CCLI Program Under Award DUE 0737526