Design, Implementation, and Assessment of High Performance Learning Environments

**Session Goals and/or ABET Criterion (Criteria) Addressed**
The learning environments and subsequent assessment presented in this workshop are related directly to the a-g, i, and k ABET Criteria. The goals of this session are to equip faculty with the necessary tools to implement and appropriately assess a student driven learning environment that incorporates hands-on experiences, teamwork, oral and written communication with traditional courses.

**Presentation Format**
Primarily an interactive workshop with periodic breaks for discussions, observations, and feedback.

**Session Summary**
ABET EC2000 reviewers want to see greater dynamics in the engineering learning environment with increased student participation. In fact, these environments must have characteristics that more closely relate to the practical aspects of the profession such as teamwork abilities, excellent communications skills, and motivation for life-long learning. One of the most frequently overlooked aspects in the training of engineering students is teamwork within synergetic collaborative learning approaches that a student-centered environment can develop. Teamwork, however, is not easy to teach, is time consuming to implement and very difficult to evaluate and, yet, crucial in the development of a well-rounded engineer. Training students in teamwork requires a completely new type of class (and beyond) environment with totally different activities and instructor teaching practices. In particular, the instructional practices are more closely aligned to that of a “sports coach” with the ability to change the learning pace, promote students’ activities, and with a strong command of the psychology of learning. Teamwork also requires the development of new student training approaches and new assessment methodologies.

In this workshop, participants will be introduced to learning environments where the student (and not the instructor) is in the driver’s seat of the learning process. These environments are based on five components (i.e., classroom instruction, experimental prototype, industrial contacts, teams, and communications) and four elements (faculty, students, time, and assessment). The effective assessment of these hybrid environments is a focal topic in the workshop.

**Key Words**
Student driven learning; hybrid learning environments, synergetic collaborative learning, teamwork assessment
Bibliography


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