ABET ANNUAL CONFERENCE
BRAINSTORMING SESSIONS

“How Can ABET Better Foster Innovation in Curriculum Design, Student Engagement, and Workforce Development?”

Tremont Grand Hotel
Baltimore, MD
Friday, October 28, 2011
Chapter Room
Brainstorming Facilitator: Larry Jones

What do you mean “we”?

- ABET volunteers
- Programs
- All of us together
Chapter Room
Brainstorming Facilitator: Larry Jones (cont.)

How Can We Foster Innovation in Curriculum?

- **General**
  - Innovation is risky
  - Junior faculty may find attempting to innovate is counter to their best interests

- **Program-oriented suggestions**
  - Introduce practice-based problems
  - Innovation with technical electives
  - Have interdisciplinary programs
  - Value innovation in curriculum in tenure decisions
  - Hold professional development education in innovation for professors

- **ABET-oriented suggestions**
  - Perceived “bean counting” about form rather than substance stifles innovation
  - Create awards to recognize innovation
  - ABET could be more explicit about what innovation could look like as part of a program – more explicit direction and told how students can be brought along
  - Explicitly ask for examples in self-study – share examples with visit team
  - Help programs understand the areas where innovation is “permitted” (or won’t conflict with essential elements of “compliance”)

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[ABET logo]
How Can We Foster Innovation in Student Engagement?

- More hands-on discovery. Let them discover first and then discuss.
- Encourage more research in innovation to try to understand what methods work for different student learning styles.
- Use social “food” activities (international nights, co-op posters, presentations) to get students more involved. Require faculty to participate.
- Have students be in charge of faculty activities (career/engineering day, etc.)
- Ask the students how they want to be more involved.
- Give the students purpose behind their innovative projects (attach it to the real world) – service projects, etc.
- Share experiences from co-ops or working in different settings to discuss what is/is not innovative – either students, former students, employers (evaluate organization’s level of innovation).
- Recognize student work in professional societies and highlight some of the things they are doing in visit statements.
How Can We Foster Innovation in Workforce Development?

- **Program-oriented suggestions**
  - Actively create opportunities for internships and use industry partners more
  - Encourage industry advisory committees to join programs for campus visits
  - Establish connections among universities worldwide – facilitate study abroad programs
  - Use tech elective design tailored for a particular company
  - Create more partnerships between 2- and 4-year institutions
  - Incorporate graduates and current students into industrial advisory board meetings
  - Offer special topics course that students can take that are tailored as late as possible
  - Workforce development should also include continuing education

- **ABET-oriented suggestions**
  - Create an ABET-wide program where we engage earlier parts of educational system k-12
  - Continuous improvement of desired student outcomes… a reexamination of desired outcomes for graduates (EC2000) may be in order to see if criteria need adjustment
Oriental Room
Brainstorming Facilitator: Bob Herrick

Overview

- This is a package deal
  - All of these topics must be considered together
- Redefine career success
  - Broaden the definition of success
- Celebrate innovative initiatives
  - Innovation means trying new things, even though they won’t always work
- Peer mentoring
- Wag more – bark less
Curriculum

- Broaden the definition of success
  - What should a technical professional look like?
- Innovation means trying new things, even though they won’t always work
  - ABET should give credit to programs that try something new, even if it fails.
- Peer mentoring
  - Shorten the time to introduce new and complex concepts to students
Student Engagement

- Start with the k-12 community, especially high school
  - Improve the kinds of students who are entering technical programs
  - Have current students mentor high school students
- Help students understand the role of their professions in society
  - ABET criteria does some of this, but the faculty have to get this across to students
- Role of the PEV – Programs wish that they can get rewarded for doing things well
  - On most visits, they mostly tell them deficiencies, not anything encouraging or could inspire other programs
Workforce Development

- Student resourcefulness is a good indicator of lifelong learning
- ABET should provide more best practice guidelines
  - More self-study examples, etc.
  - In progress, more examples coming at next Symposium
Curriculum

- Insist that program have more than A-K outcomes based on constituency needs
- ABET should be contacting industry and keep academia informed on their needs/requirement with regard to accreditation
  - Provide links with specific industry needs and match with specific institution
- ABET is still too prescriptive
- ABET should practice what it preaches – Create workshops and other activities showcasing best practices in innovative curriculum. An example would be project-based learning.
- ABET should assess the appropriateness of outcomes A-K
- Provide more specific guidance for non-technical outcomes
- Provide references on how to incorporate new technologies into curricular without jeopardizing their accreditation status.
- More guidance on how to make curricular more interesting to students
- ABET should review policy on 1 graduate needed to apply for accreditation. What is the value? Inhibiting new programs growth.
- Better guidelines on how to manage transitions without putting accreditation status in jeopardy
- A program should be able to offer as many tracks as possible to make that program more flexible and more attractive to the students and not put accreditation status in jeopardy
- Industry certifications should be given as credit for prior learning in substitution for program content. Example – Excelsior College
Student Engagement

- ABET should collaborate with industry to give graduates from ABET-accredited programs more advantage on easier certification
- ABET should use media to attract more students to accredited programs. Should make more public the importance and value of accreditation
  - Should focus more on prospective students and parents
- More branding of ABET accreditation
  - Make more important with industry with regard to hiring ABET graduates, specifically in computing
- At ABET conference and events, special recognition should be given to those institutions who have shown extraordinary innovative student engagement.
- More evidence should be required that students are engaged – possibly add to outcomes
  - Student engagement should be assessed during the visit process
- Program criteria should add a section regarding project-based learning – encouraged throughout that curriculum
- More student participation during the accreditation process
  - i.e. Student Advisory Committee
Workforce Development

- In the spirit or continuous improvement outcomes A-K should periodically be reevaluated by industry, not academia
- ABET does not clearly try to differentiate between the engineer and the technologist
- ABET should require the faculty to include a scholarship of researcher, application, innovation and teaching
- Government does not acknowledge the importance of ABET-accreditation for areas other than engineering
- ABET should coordinate and make available serious keynote speakers from industry to speak at institutions and advise students on the needs of industry
- ABET should proactively encourage student co-ops and internships
- ABET should spearhead finding a core set of fixed knowledge that remains fairly constant, where the other set of knowledge could rapidly change to satisfy industry needs.
Curriculum

- Allow programs to request special focus of accreditation teams on a particular curriculum area or format.
- For the ABET Board: What exactly is the phrase “stimulate innovation” in the ABET logo intended to mean?
- Explore/encourage joint accreditation visits with allied professional accrediting organizations.
- Allow some flexibility in the template for the self-study reports.
- Encourage member societies to slow or reverse the trend of adopting more specialized criteria.
- Several organizations (ASEE, some of the societies, ABET to some degree) work to identify and disseminate best and creative practices. Why have the changes been evolutionary instead of revolutionary.
Student Engagement

- ABET role in this is limited.
- Accelerate development and dissemination of ABET policies and procedures that pertain to distributed learning.
- Help programs find ways to objectively measure student engagement.
- Showcase creative and innovative practices to deans, department chairs, and faculty
Workforce Development

- ABET has made a contribution by elevating the role of industry advisory councils.
- Continue/expand ABET industry and academic advisory councils
- Continue and expand global accreditation outreach
- Problem: how to reconcile the list of desired knowledges, skills, and abilities of new grads articulated by the senior execs in the morning session.
- ABET should seek to engage NCATE, to reflect employers expectations to these groups.