The Ripple Effect: Getting Faculty Involved in Assessment

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Presentation Outcomes

By the end of this session, participants will be able to:

- Analyze issues around engaging faculty in assessment in their institution
- Discuss best practices for engaging faculty
- Identify ways to overcome some of the common barriers for assessment in their institution
Exercise 1: SWOT Analysis of Faculty Engagement

- **Strengths** – List strengths of your program assessment process that relates to faculty engagement.
- **Weaknesses/Threats** – List weakness/threats of your program assessment process that relates to faculty engagement.
- *(When you go home, think about what are some opportunities to engage faculty.)*
Best Practices

- Shared Vision
- Keep It Simple; Streamline the Process
- Faculty Driven – Faculty Shared
- Resources
- Publicize Success Stories
Shared Vision

- Develop a vision of ASSESSMENT - what do you envision assessment to be for your program

- Examples:
  - “The assessment of student learning plays a pivotal role in understanding the successes of students, courses, and programs.”
  - “Meaningful assessment promotes the improvement of teaching and learning.”
  - “For faculty, assessment information guides course sequencing,… encourages dialogue about excellent teaching, and provides a continuous source of the knowledge essential for improvement of instruction and academic programs.”
Each program’s educational objectives and outcomes are:

- comprehensive and measurable;
- clearly tied to mission;
- responsive to constituent needs;
- systematically reviewed and updated.
Shared Vision: Curriculum

- Based on **meaningful** learning outcomes
- Relates to outcomes
- Periodically evaluated
- Assessment is a **collaborative** effort: Review of curriculum related to what students should learn engages faculty in discussions of who is teaching what, when
- Ties assessment decisions to curricular improvement
How Would You Relate the Courses to the Outcome? What Criteria?

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## Course Contribution to Program Outcomes

- **Major (4):** Topics are fully introduced, developed and reinforced throughout the course in course lectures, labs, homework assignments, tests, exams, projects; an "application knowledge"
- **Moderate (2):** Topics are introduced and further developed and reinforced in course lectures, labs, assignments, tests, etc; a "working knowledge"
- **Minor (1):** Topics introduced in course lectures, labs, assignments, etc; a "talking knowledge" or "awareness"

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## LEARNING OUTCOMES

### COURSE USED TO IMPLEMENT OUTCOME

|   | Chemistry | Physics | Math, CSC | Eng., H & SS | Tech. Writing | ECE 331 | Basic Sci. | MAT 201 | MAT 210 | MAT 225 | MAT 231 | MAT 241 | MAT 301 | MAT 310 | MAT 321 | MAT 324 | MAT 330 | MAT 331 | MAT 350 | MAT 423 | MAT 424 | MAT 431 | MAT 434 | MAT 443 | MAT 450 | MAT 460 | MAT 491 |
|---|-----------|---------|-----------|-------------|--------------|----------|-----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1a. | Apply math skills |          |          | A?          | I A         |          |          |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| 1b. | Chemistry and physics | I I | I I | I & A | I A | A |
| 1c. | Thermodynamics of materials | A A I | I |
| 1d. | Statics and solid mechanics | I & A |
| 1e. | Grad. school preparation | I I I I | I I | I |
| 2a. | Structure-property metals | I I I I | I & A | I |
| 2b. | Structure-property ceramics | I I I I | I & A | I |
| 2c. | Structure-property polymers | I I I I | I & A | I I |
| 2d. | Structure-property electr. mat. | I I | I & A | I I |
| 3a. | Apply numerical methods | I A A I | A |
| 3b. | Materials selection | I I & A | I I I I | I |
| 3c. | Processing methods, matl.-specific | I | I & A | I A | I & A | I & A |
| 4a. | Team skills | I I & A |
| 4b. | Oral communication | I | I & A | I & A | I I | A |
| 4c. | Written communication | I | I & A | A A | A A | A | I |
| 5a. | Computer-based tools | I I & A | I | I A | A A | I |
| 5b. | Microscopy and diffraction | I & A | I & A | I |
| 5c. | Mechanical and thermal methods | I I & A | I & A | I |
| 5d. | Elec., mag., optical methods | I | I & A | I |
| 6a. | Discuss social issues | I |
| 6b. | Prof. and ethical responsibility | I | I & A |
| 6c. | Global impact of engineering | I |
| 6d. | Contemp. issues/life-long learning | I | I & A |
Exercise 2 – Shared Vision

- What is your vision about assessment and how assessment can benefit your program (unit)?
Best Practices

- Shared Vision
- Keep It Simple; Streamline the Process
- Faculty Driven – Faculty Shared
- Resources
- Publicize success stories
Keep it Simple

- Start with something on paper - get examples within your discipline or closely related
  - Internet Resources for Higher Education Outcomes Assessment: [http://www2.acs.ncsu.edu/UPA/assmt/resource.htm](http://www2.acs.ncsu.edu/UPA/assmt/resource.htm)
  - NC State’s Program Review: [http://www.ncsu.edu/provost/academic_programs/uapr/UAPRindx.html](http://www.ncsu.edu/provost/academic_programs/uapr/UAPRindx.html)
  - Guidelines for developing objectives and outcomes in engineering: [www.engr.ncsu.edu/abet](http://www.engr.ncsu.edu/abet)

- Relationship of ALL Processes at your institution - Ensure that all assessment processes map and match
ABET Process
Terminology was defined that matched both processes
Engineering piloted workshops that were offered to other faculty
Course based assessment pushes other programs to consider course assessment

UAPR Process
(Undergraduate Academic Program Review Process)
Cooperation among departments such as mathematics and engineering helps all programs
Faculty Facilitators: more training for faculty in engineering
Parallel Process

ABET Process
- Began Fall 1998
- ABET Team
- Visit Fall 2004
- Outcomes Oriented
- Faculty Oriented
- Shared Faculty
- Timelines & Documentation Coordinated

UAPR Process
- Began Spring 1999
- CUPR Team
- Due Fall 2005

Undergraduate Academic Program Review Process
Streamline the Process

- Conduct training on assessment
- Develop course-based assessment
- Find assessment data that already exist
- Use same method for multiple outcomes
- Spread workload
- Meet with all faculty in program once or twice a year to discuss results and improvements to be made to program
- Develop and maintain common location of data, documentation
Conduct Training on Assessment

- Workshops and training modules help faculty discuss these ideas openly and come to consensus on method.
- Time effective, as get issues out in the open and everyone knows “how-to” by end of training.
Develop Course-based Assessment

- Pilot in two courses, first year
  1. Curriculum Matrix
  2. Faculty for the chosen courses define and map their course objectives to program outcomes
  3. Develop course-based assessment methods (define who, when, what)
  4. Each faculty who is doing this gathers summary data on their course
  5. Feed data into other data for assessment system and decision making
Find Assessment Data That Already Exist and Modify to Fit Your Situation

- Information About Students
- Student’s Ability Reported by Students
- Student’s Ability Reported by Employers
- Information about Faculty & Courses
- Course Assessments
- Satisfaction Reported by Students
- Nationally Normed Tests
- Information about Facilities & Equipment
Use Same Assessment Method for Multiple Outcomes

- Can use same student work and assessment method for multiple outcomes (for example, content outcome, outcome on written communication, and outcome on ethics)
Spread Workload

- One faculty responsible for only one measure
  - This helps with engagement
- Spread assessment over time - make it sustainable
  - Example:
    - “even numbered objective – even years” “odd numbered objectives – odd years”
    - “Focus on one that we are sure to met and one that we are concerned about”
Meet Yearly with Entire Faculty Membership

- One meeting a year to discuss results and improvements to be made to program
- Don’t meet too often!
Develop Common Location for Data and Documentation

- Ineffective practice is to have data and documentation in multiple places, e.g. with multiple faculty
- Put it all on the computer, using websites or commercial software
- Or a notebook
Examine List of Weaknesses/Threats

➢ Of the concepts we discussed so far, which address some of the concerns we listed earlier?
Best Practices

- Shared Vision
- Keep It Simple; Streamline the process
- Faculty Driven – Faculty Shared
- Resources
- Publicize success stories
Faculty Driven – Faculty Shared

- Make the process as relevant to yourself and your faculty as possible

- Teams of Faculty

- Faculty can easily relate to courses and curriculum—think about course-based assessment

- Teams within program, across programs, across the institution
Faculty Owned: Sharing Course-based Data for Program Assessment

<table>
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<tr>
<th>Program Learning Outcome Related to Course 205</th>
<th>Course Learning Outcome: Course 205</th>
<th>Assessment Methods within Course</th>
<th>Assessment Tools</th>
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<tbody>
<tr>
<td>Be able to design new systems, components, products to address needs</td>
<td>-Demonstrate ability to design and implement electrical systems to solve a problem</td>
<td>-Lab Practice, Lap Report</td>
<td>-Faculty will develop and use Rubric to analyze Lab Reports</td>
</tr>
<tr>
<td>Be able to demonstrate competency in use of modern engineering tools for desired solutions</td>
<td>-Demonstrate ability to use Analog and Digital tools of engineering to solve electrical problems (Matlab)</td>
<td>-Exam</td>
<td>-Grade on each problem will identify weaknesses across the class</td>
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<tr>
<td>Recognize an effective team</td>
<td>-Discuss how to help a team operate effectively -Define the value of diversity in team-based problem solving</td>
<td>-Group Exercise -Paper - discuss effectiveness of team as it relates to diversity</td>
<td>-Teams will complete a Rubric on each member of the team –Faculty will assess paper in terms of understanding diversity and team effectiveness</td>
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Ripple Effect: Teams

- Teams of faculty to discuss assessment issues – from “defining what is an outcome” to “best ways to assess specific outcomes”
- Representation from every program – responsible for ensuring process
- Discusses assessment issues and share examples monthly
- Each program adapts “best practices” that work for their program
- Each Representative works with teams within the program to discuss assessment
Director of Assessment’s Role

- Advisory/Consultant
- Provides tools & training
  - Assessment methods
    - Rubric development
    - Course-based assessment
  - Website (data available, by outcomes)
  - Data analyses
- Facilitates liaison with others
Building a Culture

- Assessment can be a “trust” issue.
- Acknowledge where we are in the process – SWOT analysis.
- Balance enthusiasm with reality.
- It takes time! Studies have shown it takes 4-6 years to begin to build the culture and trust.
Best Practices

- Shared Vision
- Keep It Simple; Streamline the process
- Faculty Driven – Faculty Shared
- Resources
- Publicize success stories
Resources

- Important from top administration
  - Use assessment results to make decision
  - Applies resources to decisions
- Institutional grants or awards for effective assessment activities
- Scholarship of Assessment – culture of studying assessment within the institution and using that research as important to Promotion and Tenure
Best Practices

- Shared Vision
- Keep It Simple; Streamline the process
- Faculty Driven – Faculty Shared
- Resources
- Celebrate! Publicize Success Stories
Celebrate!

- Improvements to program
- Benefits of assessment
- Successes and failures in process
- Internal acknowledgements
- External publicity
- Conferences
- Poster sessions
- Websites
- Blogs; Threaded Discussion Boards, etc
- Newsletter
Exercise 3: Address your Weaknesses

- What parts of the concepts shared will help with your “weaknesses” and “threats” in your SWOT analysis?
Contact Information

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- Internet Resource: http://www2.acs.ncsu.edu/UPA/assmt/resource.htm (by Ephraim Schechter)
- NC State’s Program Review: http://www.ncsu.edu/provost/academic_programs/uapr/UAPRindx.html
- Engineering Website: www.engr.ncsu.edu/assessment/ (see Terms, Presentations, Resources)