

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.”

Shared Vision – Objectives & Outcomes

- 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?

	MAT 201	MAT 225	MAT 245	MAT 301	MAT 345	MAT 395	MAT 442	MAT 495
Outcome 2a	I				I		A	
Outcome 2b	X			X				
Outcome 2c		X						
Outcome 2d	Basic					Major		

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"

Out come	IE 210	IE 216	IE 311	IE 316	IE 352	IE 361	IE 401	IE 408	IE 416	IE 417	IE 441	IE 443	IE 452	IE 453	IE 498	Total	
a	1	2	4	2	4	4	4	4	2	2	2	4	4	2	4	45	
b	0	1	1	1	2	1	1	1	1	1	4	2	2	1	1	20	
c	4	2	2	4	4	1	2	2	2	4	4	4	2	4	4	45	
d	0	4	1	1	2	1	2	2	1	0	2	1	2	2	4	25	
e	2	2	4	4	2	4	4	4	4	4	4	4	4	4	2	4	52
f	1	1	2	1	2	1	1	2	1	1	1	2	2	2	2	22	
g	4	4	1	2	1	1	2	2	2	1	2	2	2	1	4	31	
h	1	4	2	4	4	1	4	4	4	1	2	4	4	2	4	45	
I	1	1	1	1	1	1	1	1	1	2	1	1	1	2	2	18	
j	1	2	2	2	2	0	1	2	2	1	1	1	1	1	1	20	
k	2	4	2	4	1	4	2	4	4	4	4	2	2	4	4	47	

Another Example

	NON-MATERIALS COURSES											MATERIALS SCIENCE & ENGINEERING COURSES																
LEARNING OUTCOMES	Chemistry	Physics	Math, CSC	Eng, H & SS	Tech. Writing	ECE 331	Basic Sci.	MAT 201	MAT 210	MAT 225	MAT 310	MAT 321	MAT 324	MAT 330	MAT 331	MAT 350	MAT 423	MAT 424	MAT 425	MAT 431	MAT 434	MAT 435	MAT 440	MAT 445	MAT 450	MAT 455	MAT 460	MAT 491
1a. Apply math skills			I									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&A			I		I			
2b. Structure-property ceramics								I													I	I&A		I	I			
2c. Structure-property polymers								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	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	I				A
5a. Computer-based tools								I		I&A		I				I	A	A			I				I			
5b. Microscopy and diffraction									I&A				I&A												I			
5c. Mechanical and thermal methods								I	I&A				I&A									I&A						
5d. Elec., mag., optical methods						I			I&A						I													I
6a. Discuss social issues				I																								
6b. Prof. and ethical responsibility				I													I&A											
6c. Global impact of engineering				I																								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>
 - NC State's Program Review: http://www.ncsu.edu/provost/academic_programs/uapr/UAPRindx.html
 - Guidelines for developing objectives and outcomes in engineering: (www.engr.ncsu.edu/abet)
- Relationship of ALL Processes at your institution - Ensure that all assessment processes map and match

Influences



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



UAPR Process

Undergraduate Academic Program
Review Process

Began
Fall
1998

Outcomes Oriented

Began
Spring
1999

ABET
Team

Faculty Oriented

CUPR
Team

Shared Faculty

Visit
Fall
2004

Timelines &
Documentation
Coordinated

Due
Fall
2005

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

Course Assessments

Student's Ability Reported by Students

Satisfaction Reported by Students

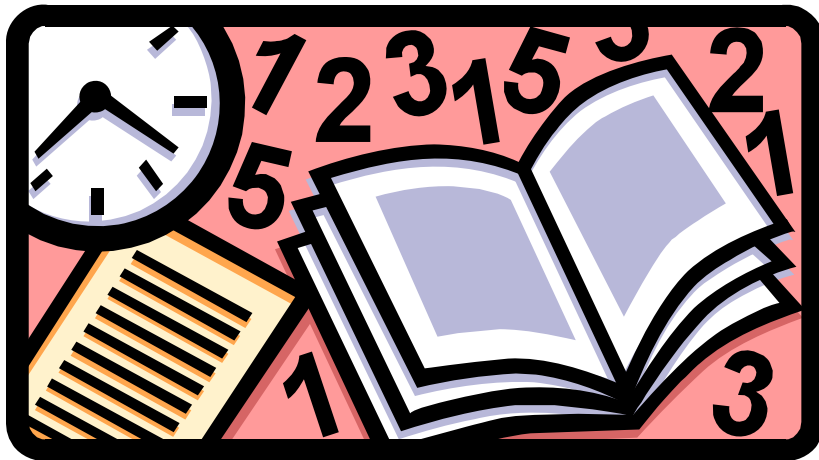
Student's Ability Reported by Employers

Nationally Normed Tests

Information about Faculty & Courses

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

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

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

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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

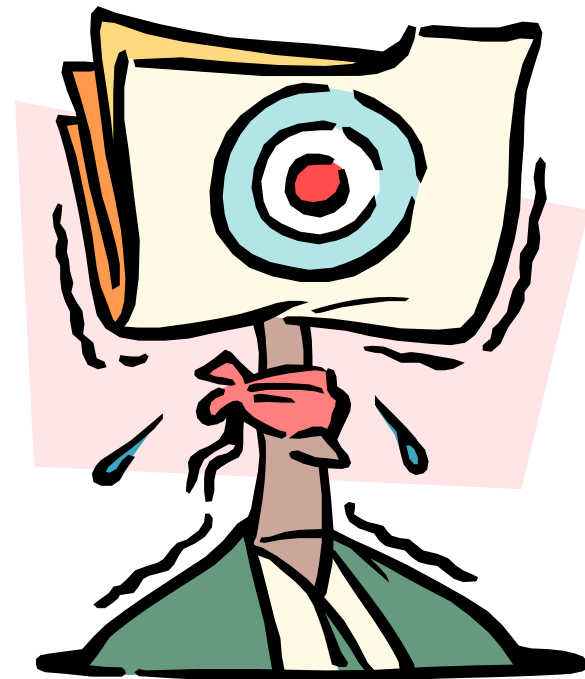
Celebrate!



- 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)