Cooperative Learning and Assessment
– Overview –

Karl A. Smith
Engineering Education – Purdue University
Civil Engineering - University of Minnesota
ksmith@umn.edu
http://www.ce.umn.edu/~smith

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Session Objectives

• Participants will be able to describe key elements of:
  – Cooperative learning and assessing student learning
  – Classroom assessment
  – Trade offs between meaningful and manageable assessment

• Participants will begin applying key elements to the design on a course, class session or learning module
Cooperative Learning and Assessing Student Learning

1. Use a criterion-referenced system for all assessment and evaluation
2. Use a wide variety of assessment formats
   - performance-based assessment
   - authentic assessment
   - total quality learning
3. Conduct assessment and evaluation in the context of learning teams
4. Directly involve students in assessing each other’s level of learning
5. Assess, assess, assess, assess, assess, and assess!

<table>
<thead>
<tr>
<th>Evaluation Methods</th>
<th>Engineering Faculty</th>
<th>All Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grading <em>on the curve</em></td>
<td>43%**</td>
<td>22%</td>
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<tr>
<td>Research/ Term papers</td>
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<td>33</td>
</tr>
<tr>
<td>Multiple choice exams</td>
<td>10*</td>
<td>32</td>
</tr>
<tr>
<td>Essay exams</td>
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<td>43</td>
</tr>
<tr>
<td>Student presentations</td>
<td>15</td>
<td>27</td>
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</table>

*Percent of those using the technique in all or most classes
**highest of all fields
* lowest of all fields

UCLA-HERI Faculty Survey
The American College Teacher:
National Norms for 2007-2008

<table>
<thead>
<tr>
<th>Methods Used in “All” or “Most”</th>
<th>All – 2005</th>
<th>All – 2008</th>
<th>Assistant - 2008</th>
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<tbody>
<tr>
<td>Cooperative Learning</td>
<td>48</td>
<td>59</td>
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<tr>
<td>Group Projects</td>
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<td>61</td>
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<tr>
<td>Grading on a curve</td>
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<td>14</td>
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<tr>
<td>Term/research papers</td>
<td>35</td>
<td>44</td>
<td>47</td>
</tr>
</tbody>
</table>

http://www.heri.ucla.edu/index.php

Bloom’s Distribution

If we are effective in our instruction, the distribution of achievement should be very different from the normal curve. In fact, we may even insist that our educational efforts have been unsuccessful to the extent that the distribution of achievement approximates the normal distribution. (p. 52)

Normal Distribution = Failure

*It is not a symbol of rigor to have grades fall into a 'normal' distribution; rather, it is a symbol of failure – failure to teach well, to test well, and to have any influence at all of the intellectual lives of students* – Milton, et al. 1986, p 225

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Types of Assessment

1. Diagnostic Assessment
   Conducted at the beginning of an instructional unit, course, semester... to determine the present level of knowledge, skill, interest... of a student, group or class.

2. **Formative Assessment**
   Conducted periodically throughout the instructional unit... to monitor progress and provide feedback toward learning goals.

3. Summative Assessment
   Conducted at the end of an instructional unit or semester to judge the quality and quantity of student achievement and/or the success of the instructional unit.
Minute Paper
(Classroom Assessment Technique)

- What was the most useful or meaningful thing you learned during this session?
- What question(s) remain uppermost in your mind as we end this session?
- What was the “muddiest” point in this session?
- Give an example or application
- Explain in your own words . . .


Session Summary
(Minute Paper)

Reflect on the session:

1. Most interesting, valuable, useful thing you learned.
2. Things that helped you learn.
3. Question, comments, suggestions.
4. Pace: Too slow 1 . . . 5 Too fast
5. Relevance: Little 1 . . . 5 Lots
6. Instructional Format: Ugh 1 . . . 5 Ah
Minute Paper – Reflection

1. Most interesting, valuable, useful thing you learned.
2. Question/Topic/Issue you would like to have addressed
3. Current challenge, comments, suggestions, etc.
4. Pace: Too Slow 1 2 3 4 5 Too Fast
5. Relevance: Low 1 2 3 4 5 High
6. Discussion Control: Too Low 1 2 3 4 5 Too High
Q4 – Pace: Too slow 1 . . . 5 Too fast (3.1)
Q5 – Relevance: Little 1 . . . 5 Lots (4.2)
Q6 – Discussion Control: Too Low 1 . . . 5 Too High (3.3)

Q4 – Pace: Too slow 1 . . . 5 Too fast (3.0)
Q5 – Relevance: Little 1 . . . 5 Lots (3.9)
Q6 – Format: Ugh 1 . . . 5 Ah (4.1)
Assessment Formats

1. Performance-Based Assessment
   Students demonstrate what they know and can do by performing a procedure or skill

2. Authentic Assessment
   Students demonstrate a procedure of skill in "real life" context (See “approximations of practice”)

3. Total Quality Learning
   Continuous assessment of the process of learning (and teamwork) to improve it

Making Assessments Meaningful

1. To be meaningful, assessment has to have a purpose that is significant

2. Assessments are meaningful when students are involved in conducting the assessment.

3. Meaningful assessments provide a direction and road map for future efforts to learn.
Making Assessments Manageable
-- Involve Students --

Myths About Team-Based Assessment

1. If you assess student learning, you have to give students grades.
2. Faculty must read every student paper and provide feedback.
3. Students are not capable of meaningful involvement in assessment.
4. Involving students in assessment takes valuable time away from learning and lowers their achievement.
5. Assessment is a faculty responsibility, not to be done by students.
6. Individual assessment is lost in team-based approaches to assessment.

Principles of Good Practice for Assessing Student Learning

1. The assessment of student learning begins with educational values.
2. Assessment is most effective when it reflects an understanding of learning as multidimensional, integrated, and revealed in performance over time.
3. Assessment works best when the program it seeks to improve have clear, explicitly stated purposes.
4. Assessment requires attention to outcomes but also and equally to the experiences that lead to those outcomes.
5. Assessment works best when it is ongoing, not episodic.
6. Assessment fosters wider improvement when representative from across the educational community are involved.
7. Assessment makes a difference when it begins with issues of use and illuminates questions that people really care about.
8. Assessment is most likely to lead to improvement when it is a part of a larger set of conditions that promote change.
9. Through assessment, educators meet responsibilities to students and to the public.

Assessment at the Course Level

- Knowledge Survey
- Classroom Assessment (minute paper)
- Mid-Term Review
- Student Management Team
- Peer Review

Knowledge Survey

- Example from MOT 8221, Management of Technology (MS) Project and Knowledge Management
- What would you like to know about the students in your courses?
### Participant Information

**MOT 8221, Project and Knowledge Management, Spring 2007**

**Name:**

**Current Title and Job Description: (Please append a recent resume):**

**Work Experience (describe briefly):**

**Previous Coursework/Experience in Project Management, Knowledge Management, Leadership, Engineering Systems, Industrial Engineering/Operations Research (IE/OR), Management Science, and Quality Management (Six Sigma/TQM):**

For the following areas, please rank your level of understanding according to the following scale:

1 = Little or no coursework/self-study/experience in this area.
2 = (Between 1 & 3).
3 = (Between 3 & 5).
4 = A great deal of coursework/self-study/experience in this area.

<table>
<thead>
<tr>
<th>Area</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Management</td>
<td>1</td>
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<tr>
<td>PMI-PMBOK</td>
<td>1</td>
</tr>
<tr>
<td>Knowledge Management</td>
<td>1</td>
</tr>
<tr>
<td>Leadership</td>
<td>1</td>
</tr>
<tr>
<td>Engineering Systems</td>
<td>1</td>
</tr>
<tr>
<td>Modeling/Simulation</td>
<td>1</td>
</tr>
<tr>
<td>Country Adaptability Systems</td>
<td>1</td>
</tr>
<tr>
<td>Six Sigma/TQM</td>
<td>1</td>
</tr>
</tbody>
</table>

**Computing Experience:**

For each of the following, rate your proficiency and list any computer software:

1 = Never have used it.
2 = Know a little about it.
3 = Have used it some.
4 = Am very comfortable using it.

<table>
<thead>
<tr>
<th>Package</th>
<th>Rating</th>
</tr>
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<tbody>
<tr>
<td>Spreadsheet</td>
<td>1</td>
</tr>
<tr>
<td>Project Management</td>
<td>1</td>
</tr>
<tr>
<td>Statistical</td>
<td>1</td>
</tr>
<tr>
<td>Modeling/Simulation</td>
<td>1</td>
</tr>
<tr>
<td>Programming language</td>
<td>1</td>
</tr>
<tr>
<td>Knowledge Map/Expert System</td>
<td>1</td>
</tr>
</tbody>
</table>

**Expectations from the course (use additional space if necessary):**
Knowledge Survey

What would you like to know about the background knowledge of students in your courses?
Student Management Team

A student management team will be used in this course to operationalize Total Quality Management principles. The attributes of student management teams are described below, and the operation of the team is based on shared responsibility:

Students, in conjunction with their instructor, are responsible for the success of any course. As student managers, your special responsibility is to monitor this course through your own experience, to receive comments from other students, to work as a team with your instructor on a regular basis, and to make recommendations to the instructor about how this course can be improved. (Nuhfer, 1990-1995).
Attributes of Student Management Teams

- 3 - 4 students plus teaching team.
- Students have a managerial role and assume responsibility for the success of the class.
- Students meet weekly; professor attends every other week. Meetings generally last about one hour.
- Meet away from classroom and professor's office.
- Maintain log or journal of suggestions, actions and progress.
- May focus on the professor or on the content.
- Utilize group dynamics approach of TQM.

Chapter 8: Student Management Teams: The Heretic’s Path to Teaching Success by Edward B. Nuhfer

SGID: Small Group Instructional Diagnosis

A consensus approach to student feedback

What is an SGID?

Small Group Instructional Diagnosis (SGID) is a technique that uses guided discussion and assessment to generate clear, prioritized, and confidential student feedback on classroom instructional practices, teaching strategies, and administrative policies. SGID helps identify issues, which, if not addressed, may undermine teaching and learning on a broad scale. SGID involves students in a constructive evaluation process.

First, students work in small groups to evaluate answers to questions:

- What are the strengths of the course that help students learn?
- What are the weaknesses of the course that inhibit student learning?

Second, groups compile their responses to form a shared understanding of their course experience.

Third, groups share their insights with the class, discuss strengths and weaknesses, and consider suggestions for improvement.

Why request an SGID?

For course improvement, request an SGID in the third or fourth week of the semester. By helping to identify problems early in the semester, SGID can guide instructors in making necessary changes.

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Reflection and Next Steps

- What is the most useful/valuable thing you have learned in today’s workshop?
- What is one thing you will implement?
- What questions do you still have?

Resources