

Cooperative Learning and Assessment – Overview –

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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, and assess!

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Evaluation Methods ¹¹		
	Engineering Faculty	All Faculty
Grading "on the curve"	43%**	22%
Research/ Term papers	19	33
Multiple choice exams	10*	32
Essay exams	21	43
Student presentations	15	27
<i>Percent of those using the technique in all or most classes</i> **highest of all fields * lowest of all fields		

¹¹Astin, Alexander W. 1993. Engineering outcomes. *ASEE PRISM*, 3(1), 27-30.

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UCLA-HERI Faculty Survey

The American College Teacher:

National Norms for 2007-2008

Methods Used in "All" or "Most"	All – 2005	All – 2008	Assistant - 2008
Cooperative Learning	48	59	66
Group Projects	33	36	61
Grading on a curve	19	17	14
Term/research papers	35	44	47

<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)

Bloom, B. S., Madaus, G. F., and Hastings, J. T.,
Evaluation to improve learning. New York, NY: McGraw-
Hill, 1981.

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^[1]

^[1]Milton, O., Pollio, H.R., and Eison, J.A. 1986. *Making sense of college grades*. San Francisco: Jossey-Bass.

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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.

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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 . . .

Angelo, T.A. & Cross, K.P. 1993. Classroom assessment techniques: A handbook for college teachers. San Francisco: Jossey Bass.

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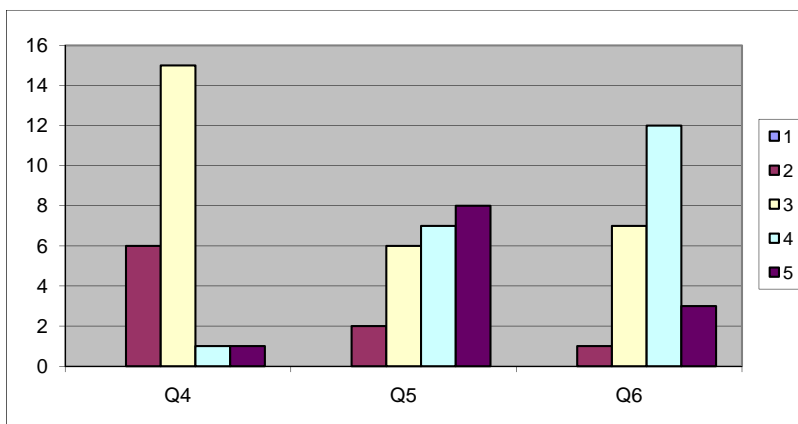
Session Summary (Minute Paper)

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

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MOT 8221 – Spring 2011 – Session 1 (3/25/11)



Q4 – Pace: Too slow 1 5 Too fast (2.9)

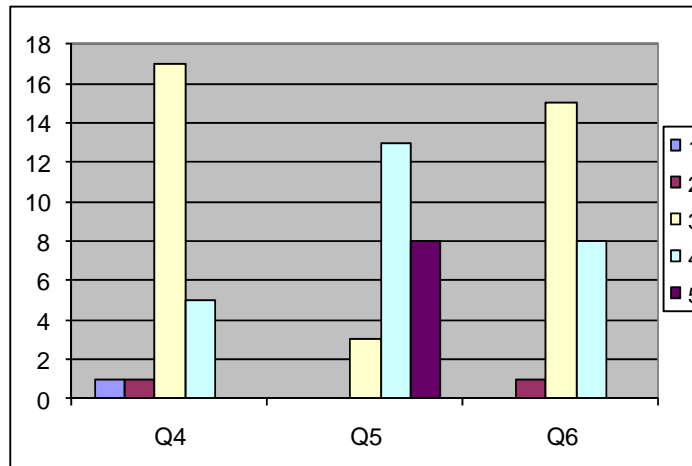
Q5 – Relevance: Little 1 . . . 5 Lots (3.9)

Q6 – Format: Ugh 1 . . . 5 Ah (3.7)

Minute Paper – Reflection

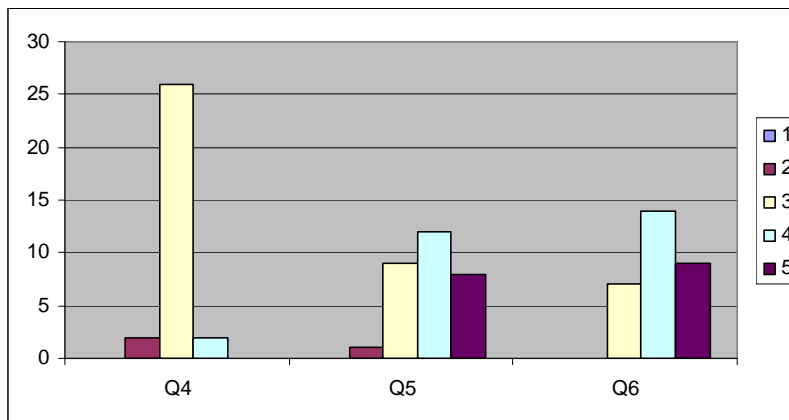
1. Most interesting, valuable, useful thing you learned.
2. Question/Topic/Issue you would like to have addressed
3. Current challenge, comments, suggestions, etc.
4. Pace: Too Slow 1 2 3 4 5 Too Fast
5. Relevance: Low 1 2 3 4 5 High
6. Discussion Control: Too Low 1 2 3 4 5 Too High

MOT 8221 – Spring 2011 – Session 2 (4/8/11)



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)

MOT 8221 – Spring 2010 – Session 1 (1/29/10)



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

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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.

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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.

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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.

AAHE Assessment Forum, 1992.

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Assessment at the Course Level

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

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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?

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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): (use additional space if necessary).

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 = Moderate coursework/self study/experience in this area
- 4 = (Between 3 & 5).
- 5 = A great deal of coursework/self study/experience in this area.

Project Management	1	2	3	4	5
PMI-PMBOK	1	2	3	4	5
Knowledge Management	1	2	3	4	5
Leadership	1	2	3	4	5
Engineering Systems	1	2	3	4	5
IE/OR	1	2	3	4	5
Modeling/Simulation	1	2	3	4	5
Complex Adaptive Systems	1	2	3	4	5
Mgmt Science	1	2	3	4	5
Six Sigma/ TQM	1	2	3	4	5

Computing Experience:

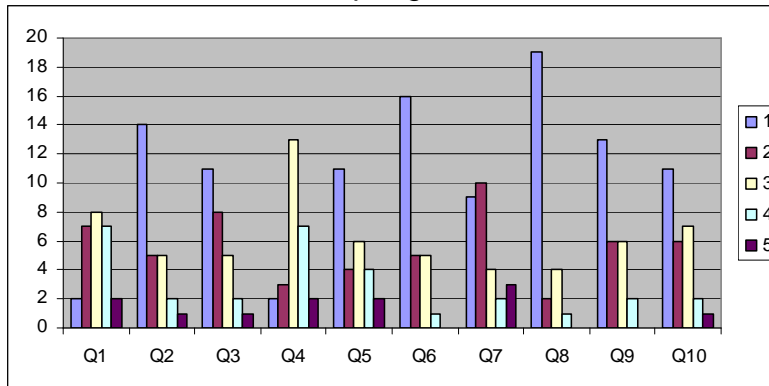
For each of the following, rate your proficiency and list any computer software:

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

	Rating				Specific Packages
	1	2	3	4	
Spreadsheet	1	2	3	4	
Project Management	1	2	3	4	
Statistical	1	2	3	4	
Modeling/simulation	1	2	3	4	
Data base	1	2	3	4	
Programming language	1	2	3	4	
Knowledge Map/Expert System	1	2	3	4	

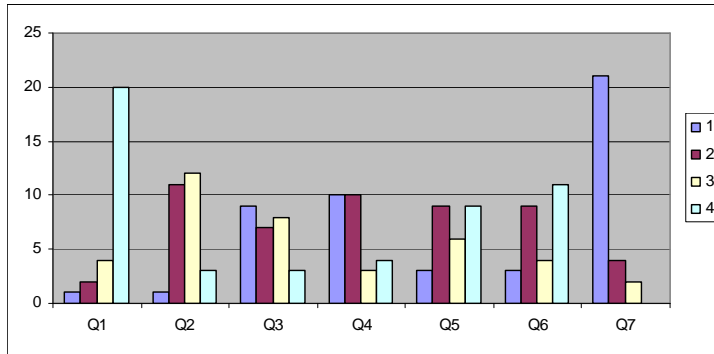
Expectations from the course (use additional space if necessary):

MOT 8221 – Spring 2007 – 27/30



PM	Q1	IE/OR	Q6
PMI-PMBOK	Q2	Mod/Sim	Q7
KM	Q3	CAS	Q8
Leadership	Q4	MgmtSci	Q9
EngSys	Q5	6 Sigma	Q10

MOT 8221 – Spring 2007 – 27/30



Spread	Q1	DB	Q5
PM	Q2	Prog	Q6
Stat	Q3	KM/ES	Q7
Mod/Sim	Q4		

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Knowledge Survey

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

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U of M: Course Evaluations - Microsoft Internet Explorer

Mid-Term Review

Address: https://eval.umn.edu/showTemplates.pl?templateid=1060

UNIVERSITY OF MINNESOTA

University Course Evaluations

Sample Form

Student Evaluation of Teaching (SET) - Early Semester Form B

The purpose of this survey is to provide the instructor with information that may help to improve this class. The results will be reported only to the instructor; they will not be used in tenure, promotion, and salary decisions. Your thoughtful written comments are especially requested.

Unsatisfactory	Marginal	Fairly Good	Very Good	Excellent	
↓	↓	↓	↓	↓	
(1)	(2)	(3)	(4)	(5)	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Your understanding of what is expected of you in this course.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	The instructor's clarity in presenting or discussing course material.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	The instructor's use of examples or illustrations.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	The instructor's encouragement of students to think about course material.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	The instructor's ability to speak clearly and audibly.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	The instructor's success in getting you interested or involved.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	The instructor's availability to answer questions or provide help.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	The instructor's respect and concern for students.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Your comfort in asking questions or expressing an opinion in class.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Helpfulness of feedback on assignments or class work.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Degree to which evaluation procedures (e.g. exams, quizzes) measure your knowledge and understanding.

Much less Less About the same More Much more
 ↓ ↓ ↓ ↓ ↓
 (1) (2) (3) (4) (5)

How much does the amount of work required in this class compare with that in similar classes you have taken?

<http://eval.umn.edu>

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.

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

Wm. Campbell & Karl Smith. *New Paradigms for College Teaching*. Interaction Books, 1997.

New Paradigms For College Teaching

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CTLS Center for Teaching and Learning Services

Services

- Ask a Quick Teaching Question
- Assessment of Learning (SGIDs)
- Teaching Consultations
- Thank A Teacher

Workshops

- Teaching Enrollment Series
- Online Workshops
- Customized Workshops

Programs

- For Graduate Students
- Preparing Future Faculty
- International TA Program

For Faculty

- Early Career Teaching Program
- Mid-Career Teaching Program
- Senior Teaching Fellow Program
- Making Meaning of a Life in Teaching
- Multi-Cultural Teaching Program
- Push Internationalizing the Curriculum
- Push Innovative Teaching w / Tech

Resources

- Connect with A Colleague
- Critical Thinking Source
- Diversity Toolkit
- English Proficiency Exam (SPEAK)
- Faculty & TA Handbook
- Journals & Resources
- Non-Native Eng. Speaker Resources
- Peer Review Resources
- Syllabus Tutorial
- TA & TA Supervisor Resources
- Teaching Guides

Newsletters & Essays

- The Teaching Professor
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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 consensus to generate clear, prioritized, and confidential student feedback on classroom instruction or curriculum. When you request an SGID, a consultant from the Center for Teaching and Learning Services guides your students through a two-step consensus-generating process.

First, students work in small groups to agree upon answers to the questions:

- "What are the strengths of this course that help you learn?"
- "What changes would improve your learning? How should these changes be implemented?"

Next, as groups share their ideas with the class, the consultant clarifies and facilitates group discussion on each point before conducting a class-wide vote to determine extent of agreement. When changes are suggested, the consultant probes for specifics on how the changes could best be implemented.

Why request an SGID?

For course improvement, request an SGID in the third or fourth week of the semester

By finding out early in the semester what helps students...

"The SGID helps me identify issues and concerns which are common to the entire class without having to run statistics on the feedback I get from individual students or worrying that I might be being unduly influenced by a vocal minority."

"Students have commented to me that they thought the process was useful because it enabled them to voice their concerns and also to hear other students' reactions to the class."

"The consensus

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PEER REVIEW OF TEACHING

- Peer Observation Guidelines and Recommendations
- Links to Peer Review Resources
- Classroom Observation Instruments

Introduction

Peer review of teaching is a form of evaluation designed to provide feedback to instructors about teaching and learning in their courses. Peer review may be used either as a means to help instructors improve teaching and learning in their courses, known as a **formative review**, or it may be part of a formal reward system used in tenure and pay decisions, known as a **summative review**.

In general, peer review is a collaborative process in which the instructor under review works closely with a colleague or group of colleagues to discuss his or her teaching. The format of a peer review will vary depending on its purpose. In some cases, colleagues may evaluate and discuss teaching materials and curricula; in other cases, they may visit a class session to observe the teacher in action.

The peer review process yields important information that can be combined with other sources to provide a comprehensive view of an individual's teaching. Other materials that can be used in concert with peer review are student evaluations, administrator assessment, feedback on student work, or self-assessment documentation such as a teaching portfolio.

The University of Minnesota has adopted a formal policy on peer review. To read the senate policy, visit [protocols for Student Evaluation and Peer Review of Faculty Teaching Contributions](#).

The Purpose of This Site

This web site is intended to:

- help departments establish and implement a peer review process;
- help departments improve their current peer review process;
- prepare individuals to participate in the peer review process by helping them document their teaching, gather appropriate materials, etc.
- prepare individuals to carry out a peer review of their colleagues;
- provide examples of peer review systems currently in use at the University of Minnesota (forthcoming).

CTLS Can Help

The Center for Teaching and Learning Services is committed to improving the quality of teaching at the University of Minnesota. Staff members are available to assist individuals, departments, or programs in developing and implementing a peer review process. The Center offers consultation services, specialized workshops, forms for peer observation and review, and a variety of online resources. For more information, or to speak with a consultant, contact the Center at (612) 625-3041.

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

- Angelo, T.A. and Cross, K. P. 1993. *Classroom Assessment Techniques: A Handbook for College Teachers*. San Francisco: Jossey-Bass.
- Johnson, David W. and Johnson, Roger T. 2004. *Assessing Students in Groups: Promoting Group Responsibility and Individual Accountability*, Corwin.
- Maki, P.L. 2004. *Assessing for learning*. AAHE/Stylus
- Walvoord, B.E. and Anderson, V.J. 1998. *Effective grading practices: A tool for learning and assessment*