

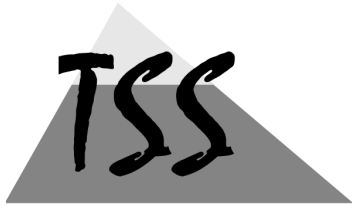
Teaching Support Services

New Faculty Luncheon Series

Student Assessment

Wednesday, February 23rd, 2000
Teaching Resource Centre
Day Hall, Rm. 125

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Assessment – Quotes to Live By

“From our students’ point of view, assessment always defines the actual curriculum.”

(Routledge, 1992)

“Assessment is at the heart of the undergraduate experience. Assessment defines what students regard as important, how they spend their time, how they come to see themselves as students, and then as graduates.”

(Brown and Knight, 1994)

Definition of Assessment

Assessment is an ongoing process aimed at understanding and improving student learning. It involves making our expectations explicit and public; setting appropriate criteria and high standards for learning quality; systematically gathering, analyzing and interpreting evidence to determine how well performance matches those expectations and standards; and using the resulting information to document, explain and improve performance. When it is embedded effectively within larger institutional systems, assessment can help us to focus our collective attention, examine our assumptions, and create a shared academic culture dedicated to assuring and improving the quality of higher education.

Source: T.A. Angelo, November, 1995, AAHE Bulletin v. 48, n. 3, p. 7.

An Assessment Manifesto

(Source: Brown, B.; Race, P.; Smith, B. (1996). *500 Tips on Assessment*. Kogan Page.)

1. Assessment should be based on an understanding of how students learn. Assessment should play a positive role in the learning experiences of students.
2. Assessment should accommodate individual differences in students. A diverse range of assessment instruments and processes should be employed, so as not to disadvantage any particular individual or group of learners. Assessment processes and instruments should accommodate and encourage creativity and originality shown by students.
3. The purposes of assessment need to be clearly explained. Staff, students, and the outside world need to be able to see why assessment is being used, and the rationale for choosing each individual form of assessment in its particular context.
4. Assessment needs to be valid. By this, we mean that assessment methods should be chosen which directly measure that which it is intended to measure, and not just a reflection in a different medium of the knowledge, skills or competencies being assessed.
5. Assessment instruments and processes need to be reliable and consistent. As far as is possible, subjectivity should be eliminated, and assessment should be carried out in ways where the grades or scores that students are awarded are independent of the assessor who happens to mark their work. External examiners and moderators should be active contributors to assessment, rather than observers.
6. All assessment forms should allow students to receive feedback on their learning and their performance. Assessment should be a developmental activity. There should be no hidden agendas in assessment, and we should be prepared to justify to students the grades or scores we award them, and help students to work out how to improve. Even when summative forms of assessment are employed, students should be provided with feedback on their performance, and information to help them identify where their strengths and weaknesses are.
7. Assessment should provide staff and students with opportunities to reflect on their practice and their learning. Assessment instruments and processes should be the subject of continuous evaluation and adjustment. Monitoring and adjustment of the quality of assessment should be built in to quality control processes in universities and professional bodies.
8. Assessment should be an integral component of course design, and not something bolted on afterwards. Teaching and learning elements of each course should be designed in the full knowledge of the sorts of assessment students will encounter, and be designed to help them show the outcomes of their learning under favourable conditions.
9. The amount of assessment should be appropriate. Students' learning should not be impeded by being driven by an overload of assessment requirements, nor should the quality of the teaching conducted by staff be impaired by excessive burdens of assessment tasks.
10. Assessment criteria needs to be understandable, explicit and public. Students need to be able to tell what is expected of them in each form of assessment they encounter. Assessment criteria also need to be understandable to employers, and others in the outside world.

Student Assessment – Considerations

Whenever learning goals and outcomes are newly formulated, assessment procedures should similarly be addressed (Diamond, 1997). *How* we assess is as important as *what* we assess.

Wlodowski and Ginsberg (1995) recommend the following norms for developing an assessment philosophy.

- the assessment process is connected to the learner’s world, frame of reference, and values
- demonstration of learning includes ways of representing knowledge and skills, and allows for attainment at different points in time
- self-assessment is essential to the overall assessment process

There is no ONE right way to assess students.

A balanced curriculum requires a balanced approach to assessment. “Good assessment reliably measures something beyond the specific tasks that students are asked to complete. The results of good assessment identify what students can do in a broad knowledge or skill domain. The skills that students develop and exhibit in the assessment situation should transfer to other situations and other problems” (Herman, Aschbacher, & Winters, 1992).

Two Types of Evaluation

(Taken from: *Charting Your Course: How to Prepare to Teach More Effectively*)

Summative Evaluation

- performed at the end of the course (or learning activity), presumably after learning has taken place
- signifies the end of the learning process (does not encourage students to return to material)
- requires instructor to make a final judgement as to whether or not a student has achieved the desired learning objectives (outcomes)
- aims to grade students (rank) from strongest to weakest – it does not help students successfully learn material
- takes place mostly within a framework of normative reference (comparing students against their peers), but it can also be criterion referenced (comparing students against predetermined criteria)

Advantages	Disadvantages
<ul style="list-style-type: none">• fewer tests to design• potentially less marking if the number of summative tests is limited and the format is multiple choice versus essay	<ul style="list-style-type: none">• does not promote learner-centredness• does not promote continuous, meaningful learning; but rather, spurts of study/cramming• stressful for students, viewed as punitive• does not encourage integration of learning; students are more likely to forget material

Formative Evaluation

- takes place during a learning activity/process
- aims to improve student learning
- provides feedback to students, encouraging them to return to the material for further study (graded or non-graded) before summative evaluation takes place (frequent feedback is best)
- takes place within a criterion reference framework (students are measured against predetermined criteria)

Advantages	Disadvantages
<ul style="list-style-type: none">• students and faculty see progress more readily as a result of regular feedback• since formative evaluation is frequent, students work more regularly• students are less anxious since they have room to improve• opportunity for self/peer evaluation• students tend to view formative evaluation less punitively and faculty less judgmental	<ul style="list-style-type: none">• increased faculty workload (marking), especially in large classes or with limited TA resources• if incorporating self/peer evaluation – an initial investment of time is needed to orient students to this process

Three categories of evaluation instruments

1. examinations/tests (written/oral)
2. assignments/projects (theoretical/practical)
3. exercises/learning activities

Selection Criteria

There are several factors to consider when choosing among evaluative instruments. Most importantly instructors need to focus on the intended learning objectives (outcomes) of the course (unit of study). To aid in the selection process consider the following factors:

- ◆ the taxonomic level of objectives (knowledge – comprehension – application – analysis - synthesis – evaluation)
- ◆ the number of students
- ◆ the number of hours needed to prepare x number of tests, assignments, or exercises
- ◆ the number of hours needed to evaluate x number of tests, assignments, or exercises
- ◆ the availability of teaching assistants to help with marking

Making Assessment Meaningful – A Course Planning Approach

(Modified from: *Effective Grading: A Tool for Learning and Assessment* and *A Practical Guide to Alternative Assessment*)

1. Decide what you want students to learn (learning outcomes).

2. Specify nature of skills, accomplishments, and achievements (level and type – affective, cognitive, psychomotor).
3. Specify criteria and standards for judging skills, accomplishments, and achievements.
4. Develop a reliable rating (grading) process.
5. Choose learning activities (assignments and exams too) that teach and test the learning you value most.
6. Design assignments and exams that follow the sequence of ideas and skills presented in the course.
7. Ensure that learning activities, assignments, and exams fit your course objectives and are feasible in terms of the workload they represent and the percentage of the final grade that will be attributed to them.
8. Give students explicit directions for their work/assignments.
9. Use test results and assignment feedback to refine assessment and improve curriculum and instruction.
10. Work smarter, not harder!

Innovative Ideas for Student Assessment

1. *Exams and Grades*, adapted by Eileen Gregory (The Teaching Professor, January 1998).

Instead of returning a multiple choice (MC) exam with the answers marked incorrect; identify only those which the student missed. Offer students the opportunity to re-do any questions answered incorrectly within a 24-hour period. Encourage them to use their notes, the texts, and fellow classmates as resources for their review analysis. When the exam is returned a second time, add points to their original score depending on the number of correct answers (now) and the value assigned to each question. Eileen Gregory, who adapted this approach for one of her biology courses, feels this is a better method than bell curving exam results and benefits students who do poorly on MC exams.

2. *Guided Essay Exams*, Susan Takata (The Teaching Professor, December 1994).

To help students focus/structure their essay answers in an exam setting, Takata proposes the guided essay exam. “Students are given a basic outline with space provided for an introduction, for five topic statements developed further in subtopic statements, and for a conclusion.” She prefers this approach as it saves time when marking and emphasizes logic, reasoning, and critical thinking. She feels it further helps students learn to dissect essay questions into logical parts. To prepare students for this approach, Takata introduces the format and allows students to practice in class using potential exam questions. She also gives students the option of writing rough drafts of their guided essay exam for feedback – not many people take her up on this option. Takata uses this approach successfully in both introductory and senior-level courses, but is always looking for ways to improve her approach.

3. *Taking the Angst Out of Returning Papers*, Sandy Middleton, Zoology, CBS

I no longer put scores on returned papers; instead, I provide positive and constructive comments along with an overall response. In advance of submission I provide students with the rating scale that will be used to assess their papers. When grading is complete, I return the papers and ask the students to score their work on the basis of my comments and according to the rating scale. When the task is completed, they are invited to visit my office to indicate how they have rated their paper and what score they feel is merited. I then reveal my assessment. It is always surprising how close we are in scores.

This approach has removed the disappointed looks and unread papers. Students have responded positively to the exercise. Furthermore, we part on good terms with a sense of joint ownership for the final grade.

4. *An Abstract in Laboratory Reports*, by Wilfried E. Rauser, Botany, CBS

Students in Plant Physiology don't prepare traditional lab reports. Instead, the lab write-ups of prescribed exercises include summary data and a descriptive abstract. The abstract must contain five elements: What is the question you are addressing? How did you do this? What did you find out? What do you conclude from all the data? and, How does the conclusion relate to the function of the entire plant? Students have limited space on the report sheet to prepare their abstract, forcing them to summarize the lab exercise efficiently in their own words. Each abstract is assessed for conciseness

and quality of prose; question, method, and findings; as well as conclusions and relation to plant function. A score of 1 to 5 is used for each category.

Lab reports may be completed within groups of up to three students. The final lab write-up is left to the group's scribe – a position that is rotated weekly to another member - effectively eliminating plagiarism amongst individuals within a group. Given they come prepared to class, groups normally have time leftover to discuss and debate amongst themselves, while instructional assistance is available to interpret and discuss experimental results. After two or three times, students find the abstracts easier to prepare and beneficial in providing excellent recall during study. I, myself, am amazed at how this writing requirement crystallizes student thought and promotes understanding. From a faculty perspective, it also reduces time spent on marking.

5. *An Exam Question Alternative*, The Teaching Professor, October 1989

As you prepare your midterm or final, include space at the end of the exam for students to contribute a test question they wanted to see on the exam (or one they have studied for) and ask them to provide an answer or solution to the problem. Grade on the basis of quality both for their question (e.g. level of difficulty/appropriateness) and their answer. This approach allows students to demonstrate mastery of material. Professors like this approach because it provides feedback as to what students are studying and what students thought they needed to know for the exam. It also provides a pool of potential exam questions for future use.

6. *Collaborative Testing and Grading*, by Charles Cassini (The Teaching Professor, April 1994)

To help students understand course material and reduce exam anxiety, Cassini uses two collaborative activities in his metaphysics class. On the day of the exam, Cassini passes out his essay questions and allows students 20 minutes to consult their notes and discuss the questions with their peers. After this initial exchange, students use the remaining 90 minutes to answer the exam questions using any notes/outlines prepared during the opening 20 minutes.

Students also collaborate with grading. Cassini initially reviews each exam, offering feedback on a comment sheet (his grade is not included)*. The comment sheet is returned to each student without a grade with another piece of paper on which he prints: "I have read the comments on my test and (a) accept them essentially as they stand, or (b) would like to add the following comment(s) for consideration." Space is left for student comments at the bottom of the page, along with the following statement. "I evaluate my tests as deserving a letter grade of ____." Cassini has found that with each test he gives over the course of a semester (using this approach), disparity between marks decreases.

Overall, his students like this form of collaborative testing and grading, and think it is both fairer and more conducive to learning. Personally, Cassini feels this approach helps motivate students to think more, apply content, and retain material better.

* TIP - Cassini uses word processing software to recycle comments and write more on each students' sheet.

Ensuring Your Grading System is Understandable

(Svinicki, M.D. 1996. "Helping Students Understand Grades." *College Teaching*, 46 (3), 101-105)

"When students see grades as a means to an end rather than an end in themselves, we are less frequently placed in the position of having to defend grading, and we can spend more time working with the student to understand content (p101)."

Whatever your grading system, ensure that it is....

- ◆ Based on PERFORMANCE BENCHMARKS that are clearly articulated to your students (e.g. A,B,C...).
- ◆ VALID (i.e. tied to course goals) and RECOGNIZABLE to both yourself and your students.
- ◆ RELIABLE – (i.e. whatever your chosen measurement – ensure it provides the same approximate results over time, no matter who scores/grades the test or assignment) and CONSISTENT (i.e. grading is perceived as fair by students).
- ◆ LOGICAL and based on REAL DIFFERENCES IN PERFORMANCE (e.g. can you explain the difference between 85% and 90%?)

To help students understand your grading system, Svinicki proposes the following five suggestions.

- ◆ *Give students a written description of your grading system to compare with their own grade.* This helps prepare students when talking about grading in general or in advance of a discussion about specific grading concerns.
- ◆ *Impose time for thinking between the receipt of a grade and any discussion of it.* The time after a student receives a grade is often emotional. Imposing a time-out and asking students to submit their grading concerns in writing, before approaching the professor, provides the space and time for them to construct a logical (not an emotional) support for their position.
- ◆ *Have students attempt to apply the grading system with a common example.* You often understand something better after doing it. Svinicki suggests handing-out an essay or some other common piece of work along with a scoring sheet to practice grading. She finds this process helps students understand the grading decisions made by professors and also learn more about how to prepare a quality essay response.
- ◆ *Have students participate in the setting of general standards for grading.* Involve students as grading partners, particularly group settings where they are in a position to observe and evaluate their peers' contribution and participation. For example, have them create their own grading criteria and standards for participation or group process. Not only will it help students understand the grading process, but it will also give them a greater investment in the grading system.
- ◆ *In the actual discussion of grades, adhere to the rules of good communication.* When students approach you (e.g. at your office), use the opportunity to find solutions for the problems rather than becoming defensive about your grading system. Suggestions: listen carefully to their questions, restate

questions as you heard them (clarification), acknowledge legitimate points made by students, help students understand the material where their interpretation is poor, etc.



Resources

On-line

Nine Principles of Good Practice for Assessing Student Learning
<http://www.aahe.org/assessment/principles.htm>

Creating a Positive Assessment Environment (by Dr. Anthony Marini)
http://www.uottawa.ca/academic/cut/options/Dec_99/dec99marini.htm

Quizzes, Tests, and Exams (excerpt from Tools for Teaching)
<http://www.hcc.hawaii.edu/intranet/committees/FacDevCom/guidebk/teachtip/quizzes.htm>

Effective Grading
<http://www.uottawa.ca/academic/cut/options/jun99/effectivegrading.htm>

Grading: Suggestions for Maximizing Students' Perceptions of Fairness
http://www.umanitoba.ca/academic_support/uts/publications/grading.html

Student Peer Assessment in Tertiary Education: Promise, Perils, and Practice
<http://carmen.murdoch.edu.au/~zariski/peer1.html>

Assessment That Promotes Learning
<http://www.psu.edu/celt/Lowe.html>

Innovative Student Assessment
<http://www.lgu.ac.uk/deliberations/assessment/mowl.html>

TRC Online Searchable Database (search by: author, title, heading, keyword)
<http://www.tss.uoguelph.ca/scripts/search/index.cfm>

Text Resources

Baume, D. and Baume, C. (1996). *Assessing Students' Work*. Oxford: Oxford Centre for Staff Development (available: TRC).

Brown, S.; Rust, C. and Gibbs, G. (1994). *Strategies for Diversifying Assessment*. Oxford: Oxford Centre for Staff Development (available: TRC).

Cross, P. and Angelo, T. (1993). *Classroom Assessment Techniques: A Handbook for College Teachers*. San Francisco: Jossey Bass (available: TRC and at the library LB 2822.75.A54)

Davis, B.G. (1993). *Tools for Teaching*. San Francisco: Jossey Bass (available: TRC and library LB 2331.D37)

Gibbs, G. (1995). *Assessing Student Centred Courses*. Oxford: Oxford Centre for Staff Development. (available: TRC) * provides chapters on assessing group work, peer and self assessment, portfolios, and journals.

Jacobs, L.C. and Chase, C.I. (1992). *Developing and Using Tests Effectively: A Guide for Faculty*. San Francisco: Jossey Bass (available: TRC and the library at LB 2366.2.J33).

Svincki, M.D. (1998). "Helping Students Understand Grades." *College Teaching*, 46 (3), 101-105 (available: TRC and the library - L 11.I4)

Tobias, S. and Raphael, J. (1997). *The Hidden Curriculum: Faculty-Made Tests in Science*. New York: Plenum Press (available: Trellis – Q183.3.A1T58).

Walvoord, B. and Anderson, V.J. (1998). *Effective Grading: A Tool for Learning and Assessment*. San Francisco: Jossey Bass (available from the TRC and as an ERIC document - ED416810).