Chapter 4

EVALUATING LEARNING AND TEACHING

TESTING

Occasionally, you will find yourself wondering whether your students are concerned more about the grades they obtain in your course than about how much they actually learn in it. Commonly, student grades are based on performances on a number of tests, quizzes, projects, etc. Keep in mind that, just as it is important to state course objectives clearly, it is also important to make clear how you will evaluate this performance.

General Tips about Testing

Integrating test construction with other course-planning activities is a good idea. An essential part of each instructional component is a method for evaluating student progress. In performance areas, instructors can plan tests that will ask students to demonstrate learning of a given sequence, technique, or skill. In areas where written tests are used, instructors can compose test items as they progress through the term rather than all in one sitting. Doing so helps to avoid fatigue later and will result in questions that are posed closer to the way that the information was discussed in class.

Mixing types of items (multiple choice, true/false, essay) on a written exam or mixing types of exams (a performance component with a written component) is often advantageous, minimizing weaknesses connected with one kind of item or component or in students’ test taking skills.

Testing early in the term and considering discounting the first test if results are poor can also be helpful. Students often need a practice test to understand the format each instructor uses and to anticipate the best way to prepare for and take particular tests.

Frequent testing helps students to avoid getting behind, provides instructors with multiple sources of information to use in computing the final course grade (thus minimizing the effect of “bad days”), and gives students regular feedback.

It is important to test various topics in proportion to the emphasis they have been given in class. Students will expect this practice and will study with this expectation.

Proofread written exams carefully and, when possible, have another person proofread them. Tiny mistakes, such as incorrectly numbering the responses, can cause problems later. Collation should also be checked carefully, since missing pages can cause trouble.

Instructors should be cautious about using tests written by others. Often, items developed by a previous instructor, a textbook publisher, etc., can save time, but they should be checked for accuracy and appropriateness for the given course.

If enough test items are developed and kept out of circulation between tests, instructors can develop a test-item bank from which known effective items can be reused on multiple versions or offerings of a test.

Testing Tips

- Test Early
- Test Often
- Use Various Test Types
- Proofread Exams
Generally, on either a written or a performance test, try to avoid having separate items or tasks depend upon answers or skills required in previous items or tasks. Otherwise, a student's initial mistake will be perpetuated over the course of succeeding items or tasks, penalizing the student repeatedly for one error.

Instructors have found that using a little humor or placing less difficult items or tasks at the beginning of an exam can help students with test anxiety reduce their preliminary tension and thus provide a more accurate demonstration of their progress.

A good way to detect test errors in advance is by pilot testing the exam. Instructors can take the test themselves or ask colleagues and/or former students to comment on it.

Try to anticipate special considerations that learning disabled students or non-native speakers may need. The instructor needs to anticipate special needs in advance and decide whether students will be allowed the use of dictionaries, extra time, separate testing sites, or other special conditions.

**Limited Choice vs. Open-Ended Items**

Instructors often ask, "Are essay tests better than objective tests?" The answer, of course, depends on the circumstances and on the goals of the tests. The advantages and disadvantages of two main types of items are discussed below in terms of the various issues that will often be considered when a test is being developed.

The term "limited-choice" will be used here to describe test questions that require students to choose one or more given alternatives (multiple choice, true/false, matching columns), and "open-ended" will be used to refer to questions that require students to formulate their own answers (sentence completion, short answer, essay). This avoids implying that one type of question is automatically "objective" and the other necessarily "subjective"—a faulty assumption. Following are some things to consider in deciding on types of test items.

**Level of Learning**

In principle, both limited-choice and open-ended items can be used to test a wide range of learning objectives. In practice, most people find it easier to construct limited-choice items to test recall and comprehension and open-ended items to test higher-level learning objectives, but other possibilities exist. Limited-choice items that require students to do such things as classify statements as fact or opinion go beyond rote learning, and focused essay questions can easily stay at the recall level.

**Content Coverage**

Since more limited-choice than open-ended items can be used in exams of the same length, it is possible to sample more broadly over a body of subject matter with limited-choice items. However, a small number of open-ended items that are broad in scope and call for the inclusion of many specifics can also test subject matter comprehensively.

**Practice and Reward of Writing and Reading Skills**
A long-term goal of many learning tasks in higher education is the cultivation of students' reading and writing skills. Limited-choice items give virtually no writing practice, while open-ended exams, particularly short-answer and essay, provide opportunities to improve writing. Open-ended exams, therefore, give students with good writing skills an advantage over those who do not have these skills, and limited-choice exams do not favor students who write well. They do, however, favor students who read well, since these students have the skills to attend to keywords, recognize logical qualifications and cues, and discriminate among close choices.

**Practice and Reward of Creativity and Divergent Thinking**

Open-ended items, especially essay questions, can provide far more opportunity for creative or divergent thinking than limited-choice items, depending on how the item is written since an essay question can call for convergent thinking, such as reaching a set solution to a problem situation. An argument often made about limited-choice exams is that they fail to foster and actually penalize divergent thinking.

**Feedback to Teacher and Student**

Limited-choice exams allow faster feedback than open-ended exams. Open-ended exams, however, usually are more revealing to the teacher about specific student strengths and weaknesses in processes such as comprehension and reasoning and can occasion more dialogue if teacher and student use this possibility.

**Reusability of Exam**

In general, exams consisting of a large number of limited-choice items are easier to reuse than those consisting of only a few essay questions, since it is harder in this case for students to remember and transmit the questions to others who will take the exam after them (if the printed exam does not get into circulation). If a large item bank is built and different exams can be randomly generated from the same pool of questions, limited-choice items are highly reusable.

**Prevention of Cheating**

Limited-choice exams provide easier conditions for cheating than open-ended exams, since single letters or numbers are far easier to see or hear than extensive text. Cheating can be minimized in several ways, however, such as using alternative test forms and controlling seating.

**Writing Test Items**

In the discussion of limited-choice items below, the term *stem* is used to refer to the part of the item that asks the question. The terms *responses*, *choices*, and *alternatives* are used to refer to the parts of the item that will be used to answer the question. For example:

**Stem:** Who is the author of Jane Eyre?

**Responses:**
- A) Emily Bronte
- B) Charlotte Bronte
- C) Thomas Hardy
- D) None of the above
**MULTIPLE-CHOICE ITEMS**

Multiple-choice items are considered to be among the most versatile of all item types. They can be used to test factual recall as well as level of understanding and ability to apply learning. Multiple-choice items can also provide an excellent basis for post-test discussion, especially if the discussion addresses why the incorrect responses were wrong as well as why the correct responses were right. Unfortunately, they are difficult and time consuming to construct well. They may also appear too discriminating (picky) to students, especially when the alternatives are well constructed and are open to misinterpretation by students who read more into questions than is there.

Some effective practices in constructing multiple-choice items include:

1. Using the stem to present the problem or question as clearly as possible.
2. Using direct questions rather than incomplete statements for the stem.
3. Including as much of the item as possible in the stem so alternatives can be kept brief.
4. In testing for definitions, using the term in the stem rather than as an option.
5. Listing alternatives on separate lines (rather than including the options as part of the stem) so that all options can be clearly distinguished.
6. Keeping all alternatives in a similar format (i.e., all phrases, all sentences, etc.).
7. Making sure that all options are plausible responses to the stem. Poor alternatives should not be included just for the sake of having more options.
8. Checking to see that all choices are grammatically consistent with the stem.
9. Trying to make alternatives for an item approximately the same length. Making the correct response consistently longer is a common error.
10. Using misconceptions students have indicated in class or errors commonly made by students in the class as the basis for incorrect alternatives.
11. Using "all of the above" and "none of the above" sparingly, since these alternatives are often chosen on the basis of incomplete knowledge.
12. Using capital letters (A,B,C,D,E) as response signs rather than lower case letters ("a" gets confused with "d" and "c" with "e" if the type or duplication is poor).
13. Trying to write items with equal numbers of alternatives to avoid asking students to continually adjust to a new pattern caused by different numbers.
14. Putting the incomplete part of the sentence at the end rather than the beginning of the stem when using a statement rather than a direct question.
15. Using negatively stated items sparingly. When they are used, it helps to underline or otherwise visually emphasize the negative word.
16. Making sure that there is only one best or correct response to the stem.
17. Keeping the number of alternatives at five or less. The more alternatives used, the lower the probability of getting the correct answer by guessing. Beyond five alternatives, however, confusion and poor alternatives are likely.
18. Randomly distributing correct responses among the alternative positions so that there are no discernible patterns to the answer sequence (ABBABBABB, etc.) and a nearly equal proportion of As, Bs, Cs, etc.

**TRUE/FALSE ITEMS**

True/false items are relatively easy to prepare since each item comes rather directly from the content. They offer the instructor the opportunity to write questions that cover more content than most other item types since students can respond to so many in the time allowed. They are easy to score accurately and quickly. True/false items, however, may not give an accurate estimate of the students' knowledge since half can be answered correctly by mere chance. They are very poor for diagnosing student strengths and weaknesses and are generally considered "tricky" by students. Since true/false questions tend to be either extremely
easy or extremely difficult, they do not discriminate between students of varying ability as well as other types of questions do.

Some effective practices in constructing true/false items include:

1. Keeping language as simple and clear as possible.
2. Using a relatively large number of items—75 or more when the entire test is T/F).
3. Avoiding taking statements verbatim from the text.
4. Being aware that extremely long or complicated statements will test reading skill rather than content knowledge.
5. Requiring students to circle or underline a typed "r" or "F" rather than to fill in a "r" or "F" next to the statement, thus avoiding having to interpret confusing handwriting.
6. Avoiding the use of negatives, especially double negatives.
7. Avoiding ambiguous and trick items.
8. Making sure that the statements used are entirely true or entirely false. Partially or marginally true or false statements cause unnecessary ambiguity.
9. Using certain key words sparingly since they tip students off to the correct answers. The words all, always, never, every, none, and only usually indicate a false statement, where as the words generally, sometimes, usually, maybe and often are frequently used in true statements.
10. Using precise terms, such as 50% of the time, rather than less precise terms, such as several, seldom, and frequently.
11. Using more false than true items, but not more than 15% more. (False items tend to discriminate more than true items.)

MATCHING ITEMS

Matching items are generally quite brief and uninvolved and are especially suitable for who, what, when, and where questions. They can, however, be used to have students discriminate among and apply concepts. They permit efficient use of space when there are several similar types of information to be tested. They are easy to score accurately and quickly. Among the drawbacks of matching items are that they are difficult to use to measure learning beyond recognition of basic factual knowledge, they are usually poor for diagnosing student strengths and weaknesses, they are appropriate in only a limited number of situations, and they are difficult to construct since parallel information is required.

Effective practices in constructing matching items include:
1. Using only homogeneous material in a set of matching items (i.e., dates and places should not be in the same set).
2. Using the more involved expressions in the stem and keeping the responses short and simple.
3. Supplying directions that clearly state the basis for the matching, indicating whether or not a response can be used more than once, and stating where the answer should be placed.
4. Making sure that there are never multiple correct responses for one stem (although a response may be used as the correct answer for more than one stem).
5. Avoiding giving inadvertent grammatical clues to the correct response.
6. Arranging items in the response column in some logical order—alphabetical, numerical, chronological—so that students can find them easily.
7. Avoiding breaking a set of items (stems and responses) over two pages.
8. Using no more than 15 items in one set.
9. Providing more responses than stems to make process-of-elimination guessing less effective.
10. Numbering each stem for ease in later discussions.

COMPLETION ITEMS
Completion items are especially useful in assessing mastery of information when a specific word or phrase is important to know. They preclude the kind of guessing that is possible on limited-choice items since they require a definite response rather than simple recognition of the correct answer. Because only a short answer is required, their use on a test can enable a wide sampling of content. Completion items, however, tend to test only rote, repetitive responses and may encourage a fragmented study style since memorization of bits and pieces will result in higher scores. They are more difficult to score than forced-choice items and scoring often must be done by the test writer since more than one answer may have to be considered correct. Overall, they have little advantage over other item types unless the need for specific recall is essential.

Effective practices for writing completion items include:

1. Using original questions rather than taking questions directly from the text.
2. Providing clear and concise cues about the expected response in the statement.
3. Using vocabulary and phrasing that comes from the text or class presentation.
4. When possible, providing explicit directions as to what amount of variation will be accepted in the answers.
5. Giving much more credit for completions than for T/F or matching items.
6. Avoiding using a long quote with multiple blanks to complete.
7. Requiring only one word or phrase in each blank.
8. Facilitating scoring by having the students write their responses on lines arranged in a column to the left of the items.
9. Asking students to fill in only important terms or expressions.
10. Avoiding providing grammatical clues to the correct answer by using a /an, etc., instead of specific modifiers.

**ESSAY/SHORT ANSWER ITEMS**

The main advantages of essay and short answer items are that they encourage students to strive toward understanding a concept as an integrated whole, permit students to demonstrate achievement of such higher level objectives as analyzing given conditions and critical thinking, allow expression of both breadth and depth of learning, and encourage originality, creativity, and divergent thinking. Written items offer students the opportunity to use their own judgment, writing styles, and vocabularies. They are less time consuming to prepare than any other item type. Unfortunately, tests consisting only of written items permit only a limited sampling of content learning due to the time required for students to respond. Essay items are not efficient for assessing knowledge of basic facts and provide students more opportunity for bluffing and rambling, and than limited-choice items. They favor students who possess good writing skills and neatness and are pitfalls for students who tend to go off on tangents or misunderstand the main point of the question. The main disadvantage, however, is that essay items are very difficult and time consuming to score and potentially subject to biased and unreliable scoring.

Effective practices for constructing essay questions include:

1. Using novel problems or material whenever possible, but only if they relate to class learning.
2. Making essay questions comprehensive rather than focused on small units of content.
3. Providing clear directions as to the expectations.
4. Allowing students an appropriate amount of time. (It is helpful to give students some guidelines on how much time to use on each question, as well as the desired length and format of the response, such as full sentences, phrases only, outline, and so on.)
5. Informing students, in advance of answering the questions, of the proportional value of each item in comparison to the total grade.
6. Requiring students to demonstrate command of background information by asking them to provide supporting evidence for claims and assertions.
GRADING AND ASSESSMENT

Determining and Explaining Criteria

Students are sensitive to grades and the criteria according to which grades are given. Many times throughout your teaching career you will be asked questions like: "will this be on the test?" "How much does a quiz count toward the final grade?" "Do you take attendance and participation into account when giving final grades?" "Will you be grading on a curve or on a straight scale?" and "If I cannot make it to the test, how will that affect my grade?" In order to avoid unnecessary problems, you must be able to answer these and similar questions on the first day of classes. This means that you need to decide in advance, and in many cases in conjunction with the instructor of record or your supervising instructor, what the answers are.

Most departments have policies on grading and issues related to grading. Before starting your first semester of teaching, you need to find out what those policies are and how much freedom (if any) you have to modify or amend them. It is particularly important to learn how many exams you are expected to give throughout a semester; if you can set exam dates yourself or if you must follow the departmental exam calendar; what activities other than exams (such as quizzes, term papers, essays, group projects, homework assignments and the like) you are expected to take into account when determining final grades; if make-up exams are allowed and, if so, when they must be given; under what conditions should you allow a student to have more time for an exam or to take it away from the rest of the class; and if there are any special conditions concerning the final exam. Although some of these matters may seem trivial to you, if not resolved properly, they can cause problems later in the semester. Once you resolve them, you must decide which to include in the syllabus and which to communicate to students orally. Be careful. On the one hand, you want to set all-important policies as early in a semester as possible. On the other hand, you do not want to make rules so inflexible that you cannot change later if necessary.

The single most important thing connected with grading is how the final grades will be assigned. To start with, you must know that MSU has a numerical grading system in which grades are: 0.0, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0. However, you should, in addition, find out if your particular department has a policy on a final grading scale that you must use. If so, find out all details, follow the policy closely, and do not make exceptions unless approved by a course supervisor.

To avoid confusion in applying MSU’s numerical grading system, consult with your supervising faculty member prior to grading to determine what constitutes the acceptable range of responses and how the numerical grading system should be applied.

If your department has no policy concerning grading procedures and grading scale (if it allows instructors to define their own grading procedures and decide on their own grading scales), be sure to give careful consideration to all issues and potential problems associated with the act of assigning final grades. This section is meant to help you understand different options you have and make an informed decision.

KEEPING RECORDS

Keep accurate records of your evaluation of each student's performance throughout the semester. You should also keep your records for a while since students may come back later to question a grade, finish an incomplete, ask you to write a recommendation, or file a grievance. Such records will help you justify and/or reevaluate a student’s final grade if necessary.

DETERMINING GRADES

Grading is an extremely complex task that is too often taken for granted. Grades do not exist in a vacuum but are part of the instructional process and serve as a feedback loop between you and the student. Because your grading policy should be consistent with your learning objectives, it is particularly important to discuss grading standards and policies with your course supervisor or coordinator when you are planning your course, especially when devising exams, quizzes or assignments. Your grading policy should figure into your decision about the type of material for which you test, the kinds of tests or assignments you give, and the degree of difficulty of those tests and assignments.

Whether or not you are ultimately responsible for assigning course grades, students will ask you about grading policies and criteria. In order to be prepared for such inquiries, ask yourself first whether your grading strategy is based on an independent judgment of each student's performance, or whether the grade will be based on the student's performance relative to other students in the class. Unless you are grading on a curve (see below, "Grading on a Curve"), you are always balancing two overriding considerations: quality and distribution.

If you concentrate solely on quality, on the students' mastery of the material, you may find yourself awarding all 4.0s—if all students get over 90 on an examination, for example, or if they all demonstrate understanding of a given concept or methodology in an essay, paper or research project. If, on the other hand, they all get below 80, and if you have beforehand said "80 and above is a 3.0," then you are trapped into giving no 4.0s or 3.0s. There is nothing wrong with this mastery-based grading philosophy, provided you have asked yourself crucial questions about what you have tested for (see below, "Testing Your Tests").

On the other hand, if you concentrate solely on distribution, and grade on a curve (see below, "Grading on a Curve"), you are predetermining that a set percentage of students will receive a set grade, irrespective of the quality of their work (for example, deciding that one-third of the class will get 2.0s on the midterm, even if they correctly answer over 90% of the questions).

In most cases, grading seems to navigate between mastery-based, criteria-referenced grading ("4.0 work is 4.0 work, period") and norm-referenced grading, in which "4.0" work is entirely relative to the current class (deciding that the top five scores get 4.0s, for example). Everyone must make his or her own adjustments to the intricacies of grading, so don't be surprised if you change your philosophy and methodology your first year.

If you are solely responsible for course grades and assign grades based on how students perform relative to other students, then look for natural breaks in your class's distribution as an easy way to make at least preliminary distinctions. If you are evaluating essays or research papers, one very helpful way to proceed is to rank the papers before assigning any grades. Natural clusters often occur in such a process, and you also can get a better feel for your specific criteria by saying, "This one is better than this one because…"

If your grades are skewed at the high or low end, or are not in line with your colleagues, meet with the professor of record, your TA supervisor and other TAs to discuss what your questions or assignments are designed to evaluate. If you are using a criteria-based grading system, see if a consensus can be reached on what constitutes effective student work. Comparing grades on a set of essays can be one of the most productive ways of arriving at a common language and standard for assessment, thus preventing students from shopping around for sections.

GRADING ON A CURVE

This is the process by which you divide a distribution of scores into groups of different sizes. In a normal (bell-shaped) curve the smallest groups occur on either end of the distribution, and are awarded 4.0s and 0.0s. The largest group is the middle group and those students are assigned 2.0s, while 1.0s and 3.0s are assigned to the next-largest groups.
Unless you are teaching a very large class, you shouldn't insist on, or expect, a bell-shaped distribution in your class. If you are part of a large class that is graded on a normal curve, it might be wise to say beforehand something like: "Typically, when we give tests like this, scores cluster in a normal distribution that looks something like this . . ." rather than saying "20% of you will get 1.5s," etc.

Students will often say to you: "This grade doesn't seem fair, can't you grade on the curve?" A good strategy for answering this is to ask students what they mean by "curve." Typically they don't mean a normal curve, since that would destine a preset percentage of them to 1.0s and 0.0s, but, rather, are saying that you seem to have given too few 4.0s, too many 2.0s and should award more 3.0s and 4.0s to "even out" the grades. In other words, they perceive grades as symmetrically distributed around a mean of 3.0. If this is indeed what the students are implying, explain that they really don't want you to curve the class but simply raise the grades.

**FORMING AND DISCUSSING CRITERIA**

Grading is easier—and less likely to be contested—if you make the evaluation criteria for individual assignments clear from the beginning. Don't think that merely handing out your standards at the beginning of the semester will clarify things for the students. Be prepared to repeat them several times for reinforcement—out loud; on the board; in handouts, and, most importantly, integrated into each discussion of assignments and results. Ideally, in fact, your grading criteria should be implicit in everything you say in class; the ways you define and analyze problems and present evidence should model the very processes you want to see in student work.

Crucial points about discussing grades with students follow:

1. If you are grading on the percentage of points a student earns ("90% and over is a 4.0," etc.), then work out a system for translating those percentages into the decimal system. But when communicating this system to the students, indicate some broad guidelines about percentages in terms of the entire course, rather than on every exam or graded piece of work. Especially on early tests, consider leaving the raw score as a percentage only, rather than assigning it a decimal or letter grade. This avoids repeated queries as to whether an 87 is a 3.3 or 3.4, or B or a B plus, etc.

2. Be consistent and equitable.

3. Make sure students know what types of questions will be asked, what types of evidence they will be expected to present, or what procedures they will be expected to follow. Whenever possible, hand out sample questions ahead of time.

4. Make sure students understand why they are being tested on certain material—what is being measured, how it is being measured, and what the test has to do with course objectives. Are students being asked to recall information, recognize patterns or analogies, draw inferences, make connections, originate a thesis, or solve a problem?

5. When students ask to have a grade changed, or contest an answer, don't act hastily. Avoid spot judgments by scheduling a meeting for a few days later. Research the issue, prepare a response and a rationale, and, if necessary, talk with the course supervisor or TA coordinator about it. If students are not satisfied with your response, refer them to the course supervisor or TA coordinator for a determination.

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<td>• Work out a system for translating percentage to the 4.0 system</td>
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<td>• Be consistent and equitable</td>
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<td>• Inform students of what to expect on exams</td>
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<td>• Inform students why tested topics are important</td>
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<td>• Before deciding on requested grade changes allow a &quot;cooling off&quot; period</td>
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Also, document your interactions with disgruntled students as promptly as possible, so you have accurate notes for later discussions.

**TESTING YOUR TESTS**

As a novice grader, you are probably still developing your criteria and have little experience with the distribution of results in a large student sample. Therefore, after you have arrived at raw scores, ranking or percentiles, it is important for you to assess why the results are the way they are before you assign grades. In fact, many faculty prefer not to assign grades, especially early in the semester, but just indicate a broad range for translating scores into grades (“Any score 90% correct or above is in the 4.0 range”). This gives you time to assess your exam or assignment and also compare a student's scores over the entire term.

You might think about what adjustments you would be willing to make if your exam or assignment does yield predominantly high or low scores, no scores in the middle, etc. If the scores are uniformly high, for example, you may be doing everything right, or have an unusually good class. On the other hand, your test may have been too easy or may not have measured what you intended.

Some of the key factors in evaluating test results are the following:

**Did I test what I thought I was testing?** If you wanted to know whether students could apply a concept to a new situation, but mostly asked questions determining whether they could label parts or define terms, then you tested their memory rather than their ability to apply that memory.

**Did I test what I taught?** For example, your questions may have tested the students' understanding of surface features or procedures, while you had been lecturing on causation or relation—not so much what the name of the bones of the foot are, but how they work together when we walk.

**Did I test what I emphasized in class?** Make sure that you have asked a majority of the questions about the material you think is the most important, especially if you have emphasized it in class. Don't try to trip students up with questions on obscure material that are weighted the same as questions on crucial material.

**Is the material I tested really what I wanted students to learn?** For example, if you wanted students to use analytical skills such as the ability to recognize patterns or draw inferences, but only used true-false questions requiring non-inferential recall, you might try writing more complex true-false or multiple-choice questions.

**CLASSROOM ASSESSMENT TECHNIQUES**

In addition to evaluating students for the purpose of assigning grades, it is also useful to immediately evaluate the level of student comprehension of a particular subject. A quick method to determine the level at which students comprehend course material is through classroom assessment techniques (CAT). There is often a large discrepancy between instructor expectations of the students and what the students think is expected, and a CAT may call this to the instructor's attention as well as help the students become aware of the instructor's expectations and perhaps even achieve them. A major advantage of utilizing CATs is that you are able to assess learning immediately after the material has been provided, before the next exam, when it will become more clear in hindsight which topics were easier to understand based on your lectures/discussions.

One example of a CAT is to ask students to write the most important point you have discussed on a 3x5 index card or piece of paper after you have finished a particular concept. Hopefully the students will provide exactly the main topic that you have illustrated. However, some may record one of the minor points that you had intended to support the broader idea. This exercise will allow you to determine what topics the students are focusing on. It will provide the students a chance to stop and reflect on the material instead of just recording what you are saying, and furthermore it will give you a few minutes to gather your
thoughts and prepare to move on. Be sure to clarify exactly what you expect to be the best answer before you advance to the next topic, which will also help link the items that you are teaching.

There are several commonly used classroom assessment techniques, including:

1. “Reality check”: what was the most important point we discussed today/this week?
2. Summarize what we just did.
3. What was the clearest point/muddiest point about today’s material?
4. Why is this concept relevant?
5. What is wrong with the following statement . . .?
6. Define a key term that has provided a focal point for today’s discussion.
7. Make a drawing/graph that illustrates or utilizes a concept.
8. Draw a concept map linking up main ideas that you provide.
9. Write a metaphor illustrating a concept that we have focused on today.
10. Provide an example test question from the material you have covered today.

TEACHING ASSESSMENT AND PROFESSIONAL DEVELOPMENT

Learning to accept and request feedback on, to assess criticism of, and to make modification in your teaching practice is an important and ongoing process in your professional development. Whether the evaluation process is externally-mandated or self-initiated, teaching assessment always presents you with an opportunity to improve your practice. The first part of this section will suggest ways in which you might initiate this process and use feedback effectively. The remaining part of the section will examine ways to put that assessment and reflection process to work for you in the job market.

Starting Points for Reflective Practice

Before moving to formal forums of evaluation, we suggest that you take a few minutes to jot down answers to the following questions or to record memorable and uncomfortable events in your teaching. This pre-writing on your experiences will help you to clarify your thoughts and will also prepare you with specific examples and instances you might use in job interviews or other situations where you are called upon to exemplify your practices.

Documentation: Recall a time when you had a wonderful educational experience.
Reflection: What does this suggest to you about teaching and learning that you might apply to your work?

Documentation: Recall a painful or difficult educational experience.
Reflection: What does this suggest about teaching and learning that you might apply to your work?

Documentation: Recall a time when you felt you did a terrific job of teaching someone.
Reflection: What made this such a positive experience? How might you encourage this to happen again?

Documentation: Recall a time when your teaching did not result in the desired learning.
Reflection: What went wrong between intention and performance? What does this suggest?

Put yourself in your students’ shoes. Imagine you are a student in your own class. Write some notes to yourself describing the educational experience you would like to have.
**Evaluation Forums**

In this section, we discuss external evaluations that inform your self-assessment and hopefully guide your professional development. The questions you have considered in the previous section should help you to solicit feedback and to determine how to respond to both positive and negative criticism.

**STUDENT EVALUATIONS**

**Student Instructional Rating System Form (SIRS)**

MSU has developed a general instrument for student feedback, the SIRS Form. It is an anonymous survey that queries students about your preparedness, receptiveness to questions, lecturing, organization and the like. At the end of each semester, your department will provide you with either the SIRS form or their own evaluation sheet or both. If your department does not provide you with specific instructions about the process of distribution, you should check with your departmental office. Generally the instructor obtains the bubble sheets, cover sheet and a manila envelope from the department office, hands it out to the class, and solicits a student volunteer to return it to the department office. After you have turned in your grades, you can go to your department office and read your SIRS forms. This is a basic forum for student feedback.

**Departmental Evaluation Forms**

Several departments on campus have developed their own student evaluation forms, tailored to their own departments’ concerns. Check with your department to see if they use the SIRS form, an alternative department form or both. Follow the procedure for collecting the evaluations outlined by your department when using its instrument.

**Instructor Developed Evaluations**

You can supplement the feedback you receive from the SIRS or Departmental evaluations by developing alternative evaluations. If you are assisting in a class, check with the instructor-of-record to see what kinds of evaluation he or she uses and whether or not the professor is open to you collecting some feedback of your own. Instructors can request written or verbal feedback. (Many times written feedback is less intimidating for students to provide.) You might have students evaluate you as part of an assignment or on a form you have generated.

Evaluations can serve many purposes. You can distribute them or request comments at any time during the semester. Early evaluation allows you something the SIRS forms do not—it allows you to address issues specific to the course and students you are instructing now.

For additional models of evaluations, see Thomas Angelo's 1993 edition of *Classroom Assessment Techniques: A Handbook for College Teachers*, Jossey-Bass. This text proposes techniques which are more informal than SIRS forms or departmental forms. In addition, you gain instant feedback on a variety of levels: how the class is going, how well students are learning, how students are processing information, and what problems the students are encountering. One such suggestion is the "One-Minute Paper," in which you ask students to take a minute at the end of the class to write a response to questions such as: "What was the most important concept you learned today?" To target student difficulties with specific material or your presentation style, Angelo suggests the "Muddiest Point Paper," in which you ask students to jot down questions and problems.

**Evaluation by Your Department**

Each department has different policies concerning supervision and evaluation of teaching assistants. You should check with your department or supervising faculty member to find out what kind of evaluations will be done of your teaching performance. Beyond that, it is your right to request a faculty visit or a visit by another TA who can give you feedback. These visits and evaluations should be arranged with your department.
Utilization of Evaluations

All of the above-described forms of evaluations—self-reflection, student feedback and departmental evaluation—allow you to better assess your teaching and to make improvements in the future. Evaluation materials also lend themselves nicely to professional dossier construction and teaching portfolios, as described in the next section. A faculty member recently suggested that his preparation for tenure evaluation was enhanced because he maintained a collection of evaluations, which allowed him to periodically assess his role in the classroom, as a researcher, and as a member of MSU.

“Evaluating Learning and Teaching” Selected Bibliography


MARKETING YOUR TEACHING CREDENTIALS/TEACHING PORTFOLIOS

We all know that research projects, publications, conference papers, fellowships, and awards are crucial measures of our achievement and are therefore noteworthy (read curriculum vitae worthy) accomplishments. There is another important professional dimension that we often neglect, however. A good many TAs spend 20 hours a week in undergraduate education-related activities. Your tenure as a TA at MSU might span from serving as a grader for a large lecture course, to conducting lab/recitation sections, to acting as an autonomous instructor with the full responsibilities of a course. Why spotlight your teaching? First, because it is, for many of us, our largest commitment throughout a normal semester. Second, because teaching success is evidence of your participation in the profession. Third, teaching will probably be a major commitment in your academic career. If you learn to market these aspects of your professional efforts as well, you will strengthen your professional dossiers.

In "How to Land that First Teaching Job," Perlman, McFadden and McCann recommend that the future professoriat (TAs) give a great deal of consideration to marketing teaching experiences and ability (APS Observer, March 1994). They cite studies which suggest that teaching occupies "almost two-thirds (64%).
of faculty work time.” Search committees, many of whom are responding to increased attention given to higher education in state legislatures, are placing more emphasis on teaching. A list of the sponsors for “The Fifth National Conference on the Training and Employment of Graduate Teaching Assistants” (1995) indicates that the disciplines of Chemistry and Mathematics, as well as those within the humanities, social sciences, and natural sciences, are giving more consideration to teaching. A glance at your discipline’s professional journals might confirm this trend.

Here at MSU, we have taken the traditional concept of a teaching portfolio and customized it into a professional development/marketing tool for TAs—a "teaching-full professional dossier." Some of you may have attended one of the TA workshops entitled "Start Now: Marketing Yourself via the Teaching Portfolio." For those of you who haven’t and would like an opportunity to learn more about the portfolio as a marketing tool, keep on the lookout for a workshop flyer. Some variation of this workshop should be offered on a regular basis. In the interim, take a look at the summary of the teaching portfolio that follows and refer to the citations provided at the end of this handbook for further reading.

Now that you have given consideration to teaching assessment, you are ready to channel those evaluations into a strong curriculum vitae or teaching portfolio. The following section describes the portfolio proper as a collection of documents separate from your CV. Even as we discuss the component parts of a portfolio and the documents that might assist you to create one, we must admit that it is somewhat unlikely that you will actually submit a hard copy of the portfolio to a search committee. (Although in some fields this is becoming an option.) Alternatively, we suggest that the teaching portfolio process is analogous to creating a windows menu for your computer or a filing system for your accomplishments. The process of reflecting and compiling offers several advantages apart from a portfolio to hand out to a committee. It allows you to develop a strategy for representing yourself as a professional. The actual compiled and organized documents allow you to compose a statement about yourself within your profession. As you consider what kind of statement this process tells you about yourself, you will be simultaneously preparing for the interview process. These documents and your production and consideration of them will help you to write persuasive letters of introduction, and most importantly, ones which will help you to position yourself within your field—to demonstrate in your letters, publications and interview answers that you are familiar with your pedagogy, methodology, and your relationship to other academics in your field as well as to scholars in other disciplines. In addition, this reflection and recording process will simplify your preparation for the application process and later for tenure review.

**Building a Teaching Portfolio**

*by Volker Langeheine*

**THE TEACHING PORTFOLIO: BECOMING A PROFESSIONAL TEACHER**

Changes in the job market and a growing emphasis in academia on teaching have led us to taking teaching more seriously.

If you are considering a future career in teaching at the secondary level, at a 2-4 year college (quite often with a teaching load of up to 12 hours per week), teaching undergraduates, or at a major research institution, teaching undergraduates and graduates, you have to become a professional teacher. Building your teaching portfolio (or teaching dossier) is a key factor to reaching that goal.
As a teaching assistant you are provided with many opportunities to gain teaching experience no matter to what extent you are involved in a course, for example as a grader for a large lecture class, a conductor of lab/recitation sections, or as an instructor with full responsibilities for a course. Do not hesitate to document your teaching experience in a teaching portfolio right from the start. By the time a job ad for a teaching position you want to apply for arrives, it might be too late to begin reflecting on your teaching and thinking about what to include in a portfolio.

**THE IMPORTANCE OF TEACHING PORTFOLIOS**

Teaching portfolios can be used by teaching assistants (as well as by faculty) to document teaching experience, and to market teaching experience when used as a tool in an application process. They can also be used for the personal development of the teacher (to improve teaching) or as part of an evaluation system (to evaluate teaching).

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<thead>
<tr>
<th>Using the Teaching Portfolio in an Application Process</th>
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<tbody>
<tr>
<td><strong>Search Committee</strong></td>
<td><strong>Applicant</strong></td>
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<td>Job ad (usually applicants are asked to submit evidence of teaching effectiveness)</td>
<td>Prepares teaching portfolio</td>
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<td></td>
<td>Mails cover letter, curriculum vitae, letters of recommendation, teaching portfolio (if requested)</td>
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<td>Initial screening, eventually further requests</td>
<td>Mails writing samples, video with taped teaching practice, teaching portfolio (if requested)</td>
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<tr>
<td>Telephone interviews/Conference interviews</td>
<td>Uses teaching portfolio as quick reference</td>
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<td>Writes thank-you letter</td>
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<td>On-campus interviews for applicants on “short list”</td>
<td>Presents research</td>
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<td>Teaches a class</td>
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<td>Refers to teaching portfolio if needed</td>
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<td>Attends social events</td>
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<td>Writes thank-you letter</td>
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<td>Job offer</td>
<td>Accepts/rejects/negotiates offer</td>
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<td>Contract</td>
<td><strong>SIGNS CONTRACT</strong></td>
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Edgerton, Hutchings & Quinlan state that “portfolios can capture the intellectual substance and ‘situatedness’ of teaching in ways that other methods of evaluation cannot” (4). They feel that “portfolios encourage faculty to take important, new roles in the documentation, observation, and review of teaching.” They view portfolios as “a particularly powerful tool to improvement” and are convinced that “portfolios can help forge a new campus culture of professionalism about teaching.”

**What is a Teaching Portfolio?**

The teaching portfolio is a means to discuss what you do, or plan to do as a teacher, and then demonstrates this through supporting materials. It is a *representative sample* of your work as a teacher rather than an all-encompassing catalog of documents.

A simple format for your teaching portfolio includes two parts:

1. a three to six page *reflective statement* about your teaching (usually a description of experiences, goals, strategies, philosophy) and

2. appendices comprising *documentary evidence* supporting the assertions made in your reflective statement (typically written evaluations from your department and your students, sample syllabi, a list of courses you have taught, evidence of professional development).

The selection of materials reflects the scope and quality of your teaching in various areas of instruction. The narrative sections establish context and continuity for the selected materials. Teaching portfolios can take different shapes and serve various purposes.

**Preparing an Effective Portfolio: Which Materials Are Included?**

According to Floyd Urbach, seven dimensions of documenting a teaching portfolio must be considered. He suggests that a portfolio should include information (i.e. reflection based on a list of questions to consider and possible types of documents and artifacts) about

What you teach
How you teach
Changes in your teaching and courses
Rigor in your academic standards
Student impressions of your teaching and their learning
Your efforts at developing your teaching skills
Assessment of your teaching by colleagues.

Supporting evidence for the assertions you make in your reflective statement is included in the portfolio appendices. The selection of materials for the appendix should be based on how well they demonstrate the connection between your concepts of teaching and your actual teaching practice. Since evidence of successful teaching practice is an important element of this equation, evaluations by your students, peers and supervisors add particular strength to your portfolio. Schools and departments using portfolios as part of an evaluation system often require specific kinds of documentation but usually allow you to include additional material.
Materials for Inclusion in the Teaching Portfolio

Evidence of Course Planning
Course titles, numbers, credits, enrollments, descriptions
- Syllabi
- Assignments
- Work sheets
- Exams and quizzes
- Group project plans
- Lesson plans
- List of teaching materials (films, guest speakers etc.)

Evaluations and Feedback
- Faculty/mentor evaluations based on classroom observation
- Peer evaluations based on classroom observation
- SIRS Forms/Departmental Evaluations
- TA-generated evaluations at the end of the term
  - TA requests for student feedback throughout the term
  - Self-evaluation

Samples of your Students’ Work (with permission!)
- Completed Exams
- Journals
- Assignments and graded student work

Evidence of Professional Development
Documented workshop/seminar attendance
- Documentation of giving a paper/workshop at a professional conference
- Contributions to a professional journal on teaching
- Responses to journal articles on pedagogy
- Video-taped teaching practice (upon request)

Evidence of Teaching Excellence
- Awards
- Recognition
- Notes/Thank-you letters from students

HOW TO GET STARTED: STEPS TO CREATING A TEACHING PORTFOLIO

Starting a portfolio is best accomplished in partnership with a colleague or mentor. Find out what others in your field have in their portfolios. Keep in mind that your portfolio is changing over time. Be selective of what you include in your portfolio. Too many items is as much of a mistake as too few! The following steps can function as a general guideline:
**Step 1:** Summarize your teaching responsibilities.

**Step 2:** Describe your approach to teaching. Write reflective statements based on the syllabi for courses you have taught. Then write an overall statement of your teaching philosophy (how and why you teach) to guide the reader through your samples of supporting materials. Describe methods, materials, objectives of instruction, ongoing efforts to improve your teaching, your future teaching goals etc.

**Step 3:** Select representative samples of supporting materials (from yourself, from others, products of student learning), prepare statements on various items if necessary.

**Step 4:** Arrange the items in order and include a table of contents.

The following questions may help you get started:

**What are your teaching responsibilities?** Have you been responsible for designing new courses or for redesigning old courses?

**How do you teach? How would you describe your teaching style and methods?**

**Why do you teach as you do? What are your teaching goals?**

**Who are your students? How do the types of students affect how you teach your courses?**

**What are some of your underlying beliefs in how students learn?**

**Which major course projects, assignments or other activities did you use to support or help students learn, to help students achieve your instructional goals?**

**How do you motivate students to learn? How do you accommodate different learning styles and levels of preparation? How do you establish a classroom environment conducive to learning?**

**How do you maintain a current knowledge base about how students learn your discipline and about how colleagues teach your discipline? How do you change your courses to reflect that knowledge?**

**What are your future goals for teaching?**

**What do you do to enhance your teaching effectiveness? Are you willing to experiment in your classroom practices?**

**Which areas of the teaching and learning process do you expect to document and/or examine in the preparation of your teaching portfolio?**

**What kinds of evidence would demonstrate that your teaching practice reflects your teaching beliefs, theories and goals?**

**What would you include in your portfolio to document your teaching effectiveness, your teaching philosophy and goals? Which of these items do you have, and which items will you need to develop or acquire?**

The uses of your teaching portfolio are many. First, the Portfolio provides an infrastructure to reflect upon, analyze, and improve your teaching. It also documents your teaching experience, materials, and efforts at improving instruction. This documentation can be used here at MSU when you apply for an assistantship and on the job market. But it is important to begin your portfolio as early as possible in your teaching career and to continually update it with the completion of each class you teach. If you do this, you will avoid scrambling to put together a portfolio at the last minute. Taking a small amount of time to organize your materials into a portfolio will enhance your teaching and marketability in the future.
Selected Bibliography


