

EXAMINATIONS/GRADING

SEQ Factor: 7

Targeted Teaching Strategies
Improving Academic Teaching Project

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Examinations/Grading:

The instructional value of examinations and grading lies in the quality of the feedback and in the stimulus to study they provide. The items comprising this factor apply specifically to feedback and less specifically to motivational issues. Students' perceptions of fairness and relevance of assessment procedures are probably associated with their motivation to learn. However, this factor's main basis in principles of learning is reinforcement in the form of knowledge of results and affective consequences of that knowledge.

The following ideas are suggested and used by outstanding university lecturers across a range of institutions and disciplines. Lecturers participating in the "Improving Academic Teaching" Project found these strategies most beneficial when, *after considering all the ideas*, they selected *no more than three or four* which appeared potentially most profitable and *made a commitment* to apply or adapt them to improve their teaching effectiveness.

I. Planning for Examinations/Grading

1. Prepare test questions that are similar to those used in your quizzes, homework, or discussion.

"I try to generate exam problems that are similar to my homework problems so there are no surprises," comments a Mathematics professor. "I also try to include problems everyone should be able to do (some very easy ones) as well as questions that require more thought and really make my students go beyond the material."

"Questions on midterm and final exams should not take a form radically different from those which you use in quizzes, homework assignments, lecture or discussion."

Several faculty members stress the importance of showing exam questions to tutors or other colleagues before the tests are administered. One explains that "tutors are very helpful in identifying test questions which may be too difficult for my students. They often see things that I don't when I make up the exams."

"When students can see a link between the things they are asked to do during their private study time, and the things they will be asked on the exam, they are more motivated to make the effort," a lecturer in Psychology said. "Particularly when there is a need to reduce the amount of assessable work, such an incentive ensures that students will appreciate the value of recommended readings or practice questions. Students also seem to rate the exams as being fairer and more appropriate when this link is clearly established."

2. Balance the difficulty of test items.

A professor of Business Administration distributes test items as follows: about 25% are reasonably easy questions that nearly everyone gets correct. About 50% of the questions require a little more sophistication but can be answered by students who have kept up with the course material. About 25% of the items are quite challenging and generally are answered correctly only by the top 5-10% of my class.

"A balanced test with easy, moderate, and difficult items gives my students an opportunity to show whether they have mastered the fundamentals of my course or have gone beyond the minimum," explains this faculty member. "I try to give my students a feeling of satisfaction at the end of a course by providing them with an opportunity to express what they have learned, rather than frustrating them because what they have studied does not appear on the exam."

3. Prepare study and review questions to hand out before the midterm and final.

Several excellent teachers report that they always hand out study and review questions before exams in their undergraduate courses. A professor of Near Eastern Studies says, "This helps relieve test anxiety, especially in a lower division course where students are less sure what to expect."

"I organise my study questions so that it is apparent not only what is most important, but how the parts of the course fit together. I think this helps my students synthesise the material which is what most of my actual exam questions require them to do."

4. Prepare answers to exams and quizzes to hand out as soon as your students turn in their work.

One Chemistry professor prepares a handout of correct answers which he gives to students as they turn in their answer sheets and leave the room. "There is no point in making students wait several days or weeks to find out how they did," this professor explains. "They are most interested in the results at the time of the examination, and it is at the time of the examination that the greatest reinforcement of the learning can take place."

Note that this method gives students immediate feedback even though it may be a week or more before the assignments can be returned with comments or grades.

II. Teaching for Examinations/Grading

5. Give students frequent assignments and make extensive, constructive comments on them.

"Students need to know what they are doing well in addition to what they need to improve," says one professor of History. "I am always careful to praise their strengths and to be as constructive and helpful as possible in pointing out their weaknesses."

"I make a point of writing extensively on my students' papers," says a professor of Architecture. "I make comments in the margins as I am reading and then append lists of strengths and suggestions for improvement."

"I write many comments on my students' papers and essay exams," says a professor in Ethnic Studies. "In fact, I write just as much on the best papers as on the poorest. On failing papers I write something like, 'Insufficient..come see me Wednesday' or on a good paper I might write 'Read such and such over the weekend and come talk to me about it next Tuesday.' I am also careful to remark on any improvements or progress a student may have made from one writing assignment to another."

6. Give your students at least one assignment which consists of several options.

One professor of English requires every student to write two essays on assigned topics. His third assignment, however, sets forth five or six options from which his students may choose the one which sounds interesting and most allows them to do their best.

Examples of the options which he offers include: a piece of creative writing; a dramatic representation to be performed in front of the class (which can be a small group or team project); an original videotape to be shown to the class (which can also be a team effort); or a third essay (a "safe" option generally selected by his more conventional students). In addition, with his permission, students can create an option of their own if they wish.

"More than five or six options tends to confuse some students; it becomes too difficult to decide," he believes. "Two few options, on the other hand, restricts unduly my more creative and daring students." Although optional assignments must be related to the subject matter of the course, he encourages his students to take an interdisciplinary approach and to link content and skills from other courses.

7. Give your students the choice of substituting a paper for one of your midterms.

A professor of Classics gives two midterms and one final exam. He has found it useful to give his students the option of writing a paper (from an approved list of topics) for either of the midterms.

"I haven't really noticed any pattern of who takes the midterm and who writes a paper," he comments. "Good and poor students do both. In general about 25% of the class chooses to write a paper." He finds that giving his students options increases their motivation and makes them more active learners.

8. Ask students to analyze an essay or journal article and to write a critique of it.

One professor of English assigns the work of a literary critic and then asks his students to write an essay taking an adversary position. "If my assignments are provocative," he says, "I get better results. I stress the importance of their presenting a personal point of view. They should enjoy doing the paper; it should provide them with a personal learning experience."

A Psychology professor asks his students to write an evaluation or critique of a paper by a professional psychologist. "The process of analysis and evaluation captures what I am trying to do in the course," he explains.

9. Discuss the answers to exams, quizzes, or homework assignments at the next class meeting.

One Engineering teacher says that even if he cannot return graded assignments or exams, he always discusses the answers at the next class meeting. "I want to correct any misunderstandings and reinforce their learning as soon as possible," he says. "Students are much more receptive to this right after completing an assignment."

10. Include peer-editing of student assignments (papers, computer programs, or design projects) in your course.

"In my upper division courses, I have my students submit two copies of each computer program they write," one faculty member explains. "One copy goes to me and the readers and the other copy is assigned to another student in the class to evaluate and edit."

He believes that learning to program is like learning to write short stories; you learn not only by doing it but by reading programs other people have written. He has his students read and analyze exemplary programs, much as they might read excellent short stories. He believes that peer-editing also gives his students yet another opportunity to demonstrate understanding.

A professor of Architecture uses the same strategy with student papers. He has students exchange papers to take home and edit. "The final paper is submitted along with a copy of the first draft with its edited corrections in red," he explains. "Each paper then receives two grades, one for the author and one for the editor."

In this way, students receive prompt informal feedback from a peer, followed by a grade and a formal critique by the faculty member. This technique helps students acquire good editing as well as good writing skills.

11. Give your students frequent homework assignments and return them at the next class meeting.

"When I schedule student assignments, I block out my own time or grade them immediately following class," one Engineering professor says. "This is important for two reasons. First, the quick turn around time ensures that my students are still thinking about the assignment. Thus any criticism or feedback is likely to have a stronger impact than if it were delayed a week or more. Second, prompt feedback indicates to my students the importance of what they are doing and my concern for their learning the material."

An English professor agrees. "The impact is enormous when you return assignments at the next class session. Students are still anxious to know how they have done. That's a tremendous advantage in maximizing the impact of feedback on their learning."

12. Return a "perfect" exam to your students along with their own corrected exams.

A professor of Business Administration likes to provide a great deal of feedback to his students after exams as a way of re-emphasizing the themes of the course.

"I generally spend about half the class period walking my students through a 'perfect' midterm that I distribute to them along with their own corrected exams. I try to explain the ways in which most of their responses differ from what I consider to be a perfect answer or solution. I also hope that it helps them to do better on the second exam."

13. Give your students summary reports to their grades throughout the semester.

A Forestry professor periodically gives his students a list of their grades to date on his quizzes, midterms, and homework assignments.

"I keep all that information on computer," he says. "Then two or three times a semester I print out scores for each student on individual computer cards and hand them out to my students in class. My

students can then see at a glance how they are doing and what grades their scores are equivalent to."

Through this method, students have tangible records of their progress. With the increased use of personal computers on campus, this becomes feasible for an increasing number of faculty members.

14. Have your students keep a logbook of their work.

The logbook should not be graded on its aesthetics or its organization. It is intended to be a work in progress, not a final document. Following is an excerpt from a faculty member's course syllabus explaining the procedures to be followed in keeping their logbook.

This term you are being requested to maintain a "Logbook". "Your logbook should be organised along the following principles:

1. Include your notes and thoughts on all design problems, lectures, readings - or anything that bears on this course.
2. After each project is complete, include a photograph or sketch of it in the book.
3. After each review, comment on what was said about your project and indicate how you would modify your scheme if you were to continue to work on it.
4. At the end of the term, reread all the materials in the book, making new comments from your advanced perspective.
5. The logbook will be reviewed at mid-semester; and will be due on the last day of class."

15. Permit your students to bring in one page of notes to use during an exam.

Several faculty members have found it useful to allow their students to take an A4 sheet of notes into midterm or final examinations. This decreases students' anxiety about having to memorise formulas. Preparing these crib sheets helps students focus their studying. Restricting students to one page of notes forces them to synthesise the most important aspects of the course.

"My exams are quasi-open book," explains a faculty member in Engineering. "My students prefer open-book, but I don't give such exams because my students spend too much time looking up things they already know - just to be sure. Letting them bring in condensed notes not only gives them a crutch against anxiety, it also provides an excellent form of review."

16. Have your students do research and write reports for specific "real world" clients.

Some teachers select or simulate a problem in their field and then have their students design a research project, gather the relevant data, and write up the results in a form appropriate for the "client."

Still other teachers find real clients for their students. For example, a teacher of natural resources has his students participate in all phases of the research, report writing, and oral presentation to client agencies for environmental impact studies in the Bay Area. Similarly, a social

welfare teacher has her students help agencies define their needs and write grant proposals for submission to foundations and federal agencies.

An Education professor frequently has his students meet with top level University administrators to define current evaluation or information needs on the campus. Each of his students then designs and conducts a small-scale evaluation project on the campus and writes a report for the client-administrator in lieu of a standard term paper. He notes, "You get better results from your students if they feel there is a real audience for their ideas."

17. Make assignments which give your students field experience.

A Political Science professor always includes at least one experiential assignment in his courses. A recent example was to require his students to interview a local politician as well as his or her spouse, children, staff members, and several constituents in order to get a better understanding of the daily life of a politician and the issues and problems he or she faces.

"My students were then asked to tell their class about their experiences so that generalizations could be drawn. They compared their own conclusions with those presented by both the theoretical and the popular conceptions of politicians represented in their reading assignments."

"My students are so experience-poor and theory-rich," he explains, "that I find as many ways as possible to get them to use the local area as a laboratory for enriching their understanding of course concepts and theories. My students are also so competitive, that I try to give them a few non-competitive assignments where each student has his or her own unique experience which can be pooled with those of others in the class in a way that enriches everyone's understanding."

18. Include an "extra credit" question on your midterms and final exams which asks your students to write an exam question rather than an exam answer.

One version of this approach found its way onto the Berkeley campus via a visiting Penn State professor and is used by several faculty members. The original extra credit question is worded:

"Almost inevitably instructors fail to ask you in an exam all those things for which you so carefully prepared. As it happens, writing good questions is almost as difficult as writing adequate answers. Thus, to give you your turn on the pitcher's mound, if you have the time and inclination, write an original exam question. You will receive between 0 and 10 points depending upon the quality of your question. JUST THE QUESTION PLEASE, DON'T SUPPLY THE ANSWER."

This technique helps establish good rapport with your students, gives you additional information on their sense of what is important in the course, and becomes an excellent source of future exam, quiz, or discussion questions for the course.

19. Hold review sessions before the midterm and the final exam.

Many excellent teachers hold reviews in all of their undergraduate courses, but it is especially important in lower division courses where many students are still unsure about the performance levels expected of them.

"Many freshmen and transfer students have not really developed good study skills," says one humanities teacher. "Furthermore, because many of them realise or suspect this, their anxiety level is especially high when they enter the University. I try to help by giving them study questions for reviewing the content of my course and by reviewing these questions in the last session of class."

20. Give two midterms, and after the first exam, distribute copies of five different answers to one of your essay questions.

A Political Science professor who does this tells his students that one of the five answers received an "A", one a "B", response, etc. Finally, I explain what I am looking for in a response to my essay exams and why I assigned each sample response the grade I did."

"I am much more interested in helping students learn how to do well in the course than I am in grading them," he explains. "As a result of this discussion, student improvement on the second midterm is often remarkable. I am convinced that the value of spending a small amount of class-time this way far outweighs any loss of coverage of additional content."

21. Prepare your students for challenging test questions.

In counselling her students about her exams, a History professor tells them a week ahead of time that the best preparation they can make is to compare x with y. X and y may be two playwrights, two orators, and so on whose major works were a century apart.

By identifying x and y and informing her students about the comparative nature of her examination, she alerts her students to what to prepare for, what to get down "cold." She also lets students know that her exams are "open book" where they can bring in x and y and any notes they have made or anything else they think will be useful.

Although her actual midterm and final examination questions are not at all the standard "compare x's views with those of y's regarding x," students who are prepared to make such comparisons are able to do very well. The actual questions are more creative, e.g., "Suppose that the main character in Moliere's play were to appear in Beaumarchais' *The Marriage of Figaro*. How would A (Beaumarchais' main character) react to B (Moliere's main character)?" or "if x and y (from the 17th or early 18th century) had met Rousseau, how would they react to his theories?"

Questions of this type not only require students to understand two historical periods and major changes which took place between them, but to use that knowledge creatively.

22. Give frequent quizzes.

One excellent science teacher gives students practice quizzes (of 10 to 15 minutes duration) throughout the term. "I don't grade the quizzes," he explains, "but I do read them and review material with which a large number of students seem to have difficulty. I also seek out students who are having real problems understanding the material and spend more time with them in my office or in the departmental course centre."

23. Provide self-instructional materials or "modules" which relate to basic principles and skills needed to succeed in your course.

A faculty member in Biochemistry had a graduate student develop computer-assisted instructional units for review by his students whose science and math backgrounds were weak. "I give a short diagnostic test at the beginning of the course to help identify students who need this kind of review in order to keep up with my course," he explains.

A Physics professor also gives his students a review module covering basic algebra during the first week of class. "Students who are unable to pass a quiz after reviewing this unit are not allowed to continue in my course," he says, "because there is no way they could succeed without understanding

the fundamentals of algebra." Such students are advised to take an Algebra review course before enrolling in introductory Physics.

These strategies are part of a package of materials available in:

Marsh, H. W., and Roche, L. A. (1994). *The Use of Students' Evaluations of University Teaching to Improve Teaching Effectiveness*. Canberra: Department of Employment, Education and Training. Further information on the Improving Academic Teaching Project can be found in Marsh, H. W., and Roche, L. (1993). The use of students' evaluations and an individually structured intervention to enhance university teaching effectiveness. *American Educational Research Journal*, 30, 217-251.

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