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GRADING AS A TEACHING AND FEEDBACK MECHANISM: MODIFYING STUDENTS' SELF-PERCEPTIONS OF PERFORMANCE

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ABSTRACT

Introduction

The conception of the experiment described in this paper emanated from a concern that the examination process be a learning experience. Certainly, the preparation for the examination should be such; but beyond that, our concern is that post-examination feedback sessions be substantively productive events. It is our contention that students should be active participants in those sessions rather than passive listeners (or, worse yet, non-listeners) as the instructor reveals the "truth" in the form of answers to the questions from the last exam. Specifically, we want to induce students to actively think about the answers the instructor offers, and to compare these answers with those which they have earlier written. There are two critical ingredients prerequisite to successful accomplishment of this goal: one is cognitive--understanding; the other is attitudinal--acceptance. The experiment was designed to address each.

Both the motivation behind and the mechanics of the experiment were based on the belief that examination feedback sessions typically tap only the surface of their potential. The easiest and most comfortable explanation of this shortfall--i.e., from the instructor's perspective--is to allude to the general lack of interest and intellect on the part of the students. There is doubtless some germ of truth to that allegation. However it is argued here that there is almost always a substantial link between the limited productivity of feedback sessions and the manner in which the instructor conducts those sessions. In most instances, only minimal effort appears to be devoted to the pedagogical aspects of examination feedback sessions. There appear to be three principal barriers which inhibit productivity: (1) the amount of time which the instructor allocates for explanation is too short (in some cases, even zero); (2) attempts to determine whether students are receiving that which is being transmitted during feedback are minimal or entirely omitted (in some cases an omission transferred directly from the regular class sessions) ; and (3) faculty defensiveness to student inquiries (student defensiveness is discussed, below, but students quite clearly have no monopoly on defensive behavior).

The experiment reported here represents an effort to design a method of examination feedback which will be a contributory part of the learning process. That is, one which will elicit student concentration on and acceptance of the instructors' substantive comments, rather than their (a) paying no attention at all, (b) paying attention only to the grade received, or (c) reacting defensively to any answers at variance with their own. Too often, those receiving high grades appear not motivated to actively listen to the instructor responses. Alternatively, those receiving low grades are eventually "turned off" or spend the time looking for loopholes, technicalities, and arguments, without regard for whether those "outs" have any substantive merit.

Nature of the Experiment

The classes in which the experiment was conducted were upper division courses in areas wherein the content is of a sufficiently subjective nature that the preponderance of questions have no single "right" answers. Examination questions were of the essay or "short answer" type. This situation is that in which feedback is most important if the examinations are to be learning experiences. It is also that in which feedback is most difficult. The difficulty factor is largely a function of the variety of approaches and answers which may be judged to be "right." A further complicating factor is that the grade for any single response is frequently assigned, in part, by comparing its quality to that of responses provided by other students. Thus, ex-post explanations of grading are inhibited by the then absence of those benchmarks against which the paper in question was originally assessed.

To deal with these problems, and with those referred to in the Introduction, above, a feedback method containing the following steps was designed:

1. The instructors grade the students' examinations by whatever method(s) they have traditionally employed.
2. For each student, grades for individual questions and final grades, as well as all instructor comments, are written on separate sheets of paper. (These sheets are retained by the instructor until later. See below.)
3. Examination papers (without grade and comment sheets) are returned to the students.
4. Students grade their own papers in class. (At the exam, they have been instructed to retain their question sheets and to look up the answers so that they will be able to grade their own papers later in class. They know when they mark their own papers that the "final" grades have already been assigned, and therefore that this self-grading exercise will not affect their actual grades. Thus, they can "use" what they have learned since the exam without fear of negative consequences.)
5. The instructor provides feedback on the "right" answers to the questions.
6. Students once more self-grade their exams, revising their estimates where the instructor feedback has caused them to view their original responses differently than in the first self-grading exercise (Step 4, above).
7. Instructors' Grade and comment sheets are distributed to the Students.

Expected Pedagogical Value of Improved Feedback

One expected return from this feedback mechanism is that students will be more attentive to the substantive

Experiential Learning Enters the Eighties, Volume 7, 1980

information provided by the instructor during the feedback session. The first premise behind this is that when the students know that they are going to “use” the feedback information they will listen more closely and absorb more fully. The second premise is that when they are without the distraction of assigned grades and comments they will focus more directly on the information being transmitted.

A second anticipated benefit is that active involvement in the feedback process will enable the students to better understand the types of answers that the instructor expects and how that instructor interprets (grades) student responses. That understanding, in turn, should assist students both in preparing for and in writing examinations. If an examination is to be useful as a learning tool, it should be a test of what the students know about the subject matter, rather than of their ability to predict and to outguess the instructor. This mechanism, it is argued, should aid in attaining the appropriate focus. The “specifics-bound” element of the examination procedure should then decline over time as students better comprehend the type of responses expected.

This procedure is also expected to reduce student anxiety and feelings of threat. If students can become actively involved in the feedback without perceiving that they may suffer from that involvement, they may be better able to receive constructive criticism of their work in the future. Hopefully, that set would transfer to all aspects of the class, and not be restricted exclusively to the feedback sessions. The basis for this expectation is the “safe” environment in which the students receive the instructors’ comments and in which they grade their own papers.

Finally, the instructors should be better able to evaluate the extent to which feedback explanations are helpful to the students. Time, during any term, is a limited resource. Feedback sessions take time. Efficient allocation of resources therefore demands that the feedback sessions be productive. The instructor can monitor class performance over the term and make some judgment as to the effectiveness of the feedback. (NOTE: This study is to be expanded, employing control groups. In the present investigation, causality cannot be assessed, but patterns and relationships can nonetheless be observed.)

Discussion of the Experiment

It was expected that, when students first began to grade their own work, their initial self-assigned grades would vary noticeably from instructor-assigned grades. The greatest gaps were expected to exist among the “poorer” students (where “poor” was measured by (a) grades on the exam in question, and (b) scores on an “IQ” instrument administered at the outset of the experiment). There were several reasons behind the variation expectation. First, it was thought that those who believed their answers to be correct would tend to be unwilling and/or unable to see where they had made their mistakes. In addition, it was anticipated that there would be a tendency for others who might intellectually know that they had been wrong to refuse to admit their errors, out of embarrassment, fear, self-deception, etc. Still another source of grading differential was hypothesized to be the well-documented tendency for certain students to judge their work more harshly than it is judged by others. Finally, it was believed that there is a general lack of understanding, on the part of most students, of the concept of “partial credit” (i.e., that they are almost always either substantially more stringent or lenient than is the instructor).

It must be noted, of course, that the foregoing hypotheses assume, and therefore can only be tested if, students seriously attempt to search out the correct answers between the time they take the examination and the time they grade

their papers. Consequently, some amount of class time is allocated for this at the origin of the experiment. Later, in subsequent rounds of the experiment, students are left to conduct this search on their own time.

A second set of hypotheses were developed concerning student self-grading after faculty feedback. The first of these was that students who had initially given themselves grades lower than those awarded by the instructor would tend to grade higher during the second round and, consequently, get closer to the actual assigned grade. Next, it was anticipated that those who had at first given themselves higher grades than actually assigned would lower their grades after feedback. In the latter case, however, a sub-hypothesis was developed: viz., that the poorer students would, in the short run, be closer to the instructor’s evaluation than would the better students. The logic behind this hypothesis is that the cognitive variation is greater among the poorer students, and that such variation is more easily and more quickly overcome than is psychological or attitudinal variation. Over the longer run, the adjustment differences between poorer students and better students should disappear.

The long-run effects of the procedure, then, should be that, over time, the self-assigned grades and the instructor-assigned grades will converge (H₁); convergence will occur across all levels of students (H₂); the convergence will be greatest and most complete among the better students (H₃), and the average grade for the entire class will rise (H₄). While the experiment is still in its initial stages, all hypotheses except (113) appear to be obtaining.