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Empowering the Marginal Student: A Skills-Based Extra Credit Assignment

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Running head: EMPOWERING THE MARGINAL

Abstract

A simple extra credit assignment explicitly rewarded marginal or failing students for improving their learning and study strategies. The instructor approached individual students who were at risk for failing the course following the midterm exam and gave them the option of earning extra credit points for regularly documenting a variety of effective learning and study skills. In contrast to control groups of matching marginal students and of nonfailing students, those attempting the extra credit assignment improved their test performance from midterm to final exam. They were more likely to earn at least a C grade and less likely to drop out of the course than the matched control group. They also evaluated the experience quite positively.

Empowering the Marginal Student: A Skills-Based Extra Credit Assignment

Although the topic of extra credit is familiar and often controversial for college students and faculty alike, the use of extra credit assignments in undergraduate courses has escaped much empirical scrutiny. As Norcross, Horrocks, and Stevenson (1989) have pointed out, extra credit does not appear as an index term in Psychological Abstracts and is rarely mentioned (e.g., Guskey, 1988; McKeachie, 1986). Indeed, only four articles in Teaching of Psychology addressed the topic of extra credit: Norcross, Dooley, and Stevenson (1993) and Norcross et al. (1989) assessed faculty and student attitudes and practices regarding extra credit assignments and found that most faculty had a globally negative view of extra credit, Oley (1992) described a peer tutoring exercise to improve students' research paper writing skills, and Sugar and Livosky (1988) described a child observation and journal writing option.

Norcross et al. (1989) reported that college students widely endorsed the use of extra credit in college courses, believing that it should be offered routinely to all students. Similarly, students' second most popular incentive (following "release from final examination") was extra "points toward course grade" (Bebeau, Eubanks, & Sullivan, 1977, p.142). These positive attitudes are also reflected in students' behavior; for example, 95% of the psychology faculty at a midsized university reported that at least one student had approached them seeking extra credit options (Junn, 1990).

In contrast to student attitudes, faculty sentiments often are markedly less positive. For example, in Norcross et al.'s (1989) survey, only 20% to 30% of instructors reported offering extra credit in their courses. Instructors' three most frequently cited reasons for disapproving of extra credit assignments included "encourages lax or irresponsible attitude," "unfair to offer to selected students," and "basics not understood; why give more work." Despite faculty skepticism, they did, however, acknowledge that some advantages might include "explore a topic in greater depth," "compensate for a serious student illness or problem," and "motivate students to work harder" (Norcross et al., 1989, p. 201).

Faculty have also expressed negative attitudes regarding the effectiveness of their interventions with failing students. For example, Junn (1990) found that only 19% of faculty surveyed believed that any of their interventions (e.g., reviewing past exams and referrals to the campus learning center) actually improved the performance of their failing students. In fact, faculty attributed students' continued failure to competing time commitments and lack of intellectual or linguistic ability. Thus, many faculty may experience cynicism and powerlessness when they try to assist failing students.

Instructors who permit extra credit options most often required additional written work (Norcross et al., 1989). Unfortunately, these assignments do little to improve weaker students' deficiencies in study or exam-taking skills. In fact, underprepared students might actually be at greater risk for failure because outside written papers require additional time that might otherwise be directed towards mastering the normally assigned material. Thus, the purpose of the present study was to improve the marginal or failing student's course performance by explicitly rewarding students for using good studying strategies.

Method

Participants

The experimental group consisted of 12 students who were averaging a grade of D+ or lower after two exams (which were roughly 70% objective and 30% essay). These 12 were all the eligible students from three undergraduate psychology courses taught during the same term by the same instructor: one section of Critical Thinking and two sections of Infancy, mean \bar{n} = 20. The remaining 47 students in these classes comprised the nonfailing control group. Also, a matched control group of 12 failing students was drawn from the same three courses that had been taught within 2 years of the experimental group's courses. These students' midterm exam scores were within 6% of the experimental group's scores.

Materials

A handout described the seven learning activities required to obtain extra credit. These activities involved learning strategies that positively relate to students' cognitive or academic

performance. Item 1 required student attendance for all remaining class sessions. Item 2 required students to turn in weekly detailed, well-organized, and highlighted copies of their class notes; late notes received fewer points. Awarding points contingent upon the timing and quality of work combats student procrastination (Bufford, 1976; Glick & Semb, 1978). Although students in all groups received skeletal outlines highlighting important concepts from lecture (e.g., Boswell, 1980), students in the experimental group had to expand on these points and provide relevant examples from both class and their own experiences (Baker & Lombardi, 1985; Palkovitz & Lore, 1980). For Item 3, experimental students submitted weekly detailed notes and questions of the assigned readings by using active reading strategies such as the Survey, Question, Recite, Review (SQ3R) method (F. P. Robinson, 1961) or PQ4R--Preview, Question, Read, Reflect, Recite, Review (Thomas & H. A. Robinson, 1972). Item 4 requested that students submit weekly flashcards with terms or questions written on one side and explanations on the reverse side. Item 5 asked students to generate at least 12 specific mnemonic devices (e.g., their own acronyms) for each week's class and associated readings. For Item 6, students documented other forms of active learning, such as engaging in cooperative studying with others (Annis, 1983; Bouton & Garth, 1983) or delivering a mini lecture (to an audience or alone onto an audio cassette tape). Documentation was as simple as supplying an audio taped recording of these activities. Finally, Item 7 encouraged students to participate more frequently in class. The more regularly students engaged in these activities, the more points they could earn, up to 15 extra credit points (1.7% of the total).

Procedure

After the second exam (roughly midsemester), all students at risk for failing were given a note telling them to not feel discouraged and to meet with the instructor for a "plan to help their performance." During these short individual meetings, students were encouraged to focus on future efforts. Importantly, the instructor suggested that students should attribute their poor exam performance to external factors, such as ineffective learning strategies (Anderson & Jennings, 1980).

Experimental group. The instructor discussed the extra credit assignment and handout. Each subsequent week, students were responsible for turning in their extra credit work without reminders from the instructor. The instructor checked their efforts (usually in time to return the materials by the next class session) and made comments and corrections either in writing or in person. Reviewing each week's materials required roughly 10 min per student. The instructor maintained a running, dated record of the quantity and quality of the work submitted for each of the seven items (e.g., noting that "class notes missed several key concepts" or "excellent flashcards"). Just before the final exam, the instructor allocated extra credit points.

Matched control group. Like the experimental group, these potentially failing students were encouraged to adopt a positive, forward-looking attitude, and to meet with the instructor whenever necessary. During individual meetings, the instructor encouraged these failing students to engage in the same study skills as the experimental group but did not provide a handout or the incentive of 15 points.

Nonfailing comparison group. No special interventions were directed toward passing students; they could, however, earn the usual extra credit points by answering the extra credit exam questions or by volunteering as subjects in experiments.

Results

Exam Scores

Three t -tests were performed to compare midterm to final exam scores for each group. Experimental students significantly increased their exam scores from the midterm ($M = 57.9\%$, $SD = 8.5$) to the final ($M = 70.0\%$, $SD = 16.5$), $t(11) = 3.27$, $p < .01$. In contrast, the matched control group, without an intervention, showed no significant improvement from midterm ($M = 63.8\%$, $SD = 5.8$) to the final exam ($M = 66.5\%$, $SD = 10.6$), $t(11) = 1.41$, $p > .05$. The nonfailing control students also did not improve from the midterm ($M = 85.5\%$, $SD = 11.1$) to the final exam, ($M = 85.9\%$, $SD = 12.3$), $t(46) = .48$, $p > .05$. These results suggest that the extra credit assignment helped marginal and failing students to improve their exam performance. The lack of improvement by the nonfailing control students, who were enrolled in the exact same

courses as the experimental group, rules out the competing explanation that other features of those particular classes that semester (e.g., an easier final exam) accounted for the experimental group's improvement.

Student Retention Rates

Despite the attempt to match control students to experimental students on midterm exam scores, the experimental group actually performed significantly worse ($\underline{M} = 57.9\%$, $\underline{SD} = 8.5$) than the control group ($\underline{M} = 63.8\%$, $\underline{SD} = 5.8$), $t(22) = 2.80$, $p < .01$. The reason for this disparity was that six potential control students with extremely low scores (e.g., 45% and below) never took the final exam and simply "disappeared" from class after the individual meeting with the instructor. One possible explanation for their disappearance may be that students with exceptionally poor scores who were not given special extra credit options may have felt helpless and cut their losses. In contrast, no student with the extra credit assignment dropped out of the course or failed to show up for the final exam despite some extremely poor scores.

A χ^2 analysis using Yates' correction for continuity for small frequencies comparing the retention rates in the three experimental courses versus the three matched control courses approached statistical significance, $\chi^2(1, 134) = 3.50$, $p = .06$. This suggests that the extra credit assignment may increase retention rates among marginal and failing students.

Final Grades

Another χ^2 analysis using Yates' correction indicated that significantly more students from the experimental group obtained final course grades of C or better (even when subtracting the points earned from the extra credit assignment), than students from the matched control group, $\chi^2(1, 24) = 4.29$, $p < .05$. In fact, 8 of the 12 experimental students received passing final grades (1 B, 7 C's, 3 D's, and 1 F); whereas none of the 12 control students passed the course (10 D's and 2 F's). This result is all the more striking the experimental group performed significantly worse than the control group at the midterm assessment.

Student Study Habits and Reactions

Eleven of 12 experimental students anonymously completed a questionnaire about their study habits before and after receiving the assignment and their reactions to it. Although ideally a questionnaire regarding study habits should also have been administered at the beginning of the course, the students had no reason to misrepresent the truth. All of the students now reported engaging in four study strategies: rewriting class notes (previously used by 64% of the students), taking notes from the readings (previously 45%), making flashcards and generating mnemonics (both previously 36%). The rate of studying with others increased from 0% to 50%, and the rate of regular studying (at least every other day) increased from 9% to 50%.

Students rated various aspects of the extra credit assignment on 5-point scales (1 = very negative to 5 = very positive). They were very positive about getting the opportunity to do this exercise ($\underline{M} = 4.8$, $\underline{SD} = 0.4$). The most useful specific feature was getting feedback from the instructor ($\underline{M} = 4.9$, $\underline{SD} = 0.3$). Following this, students rated reorganizing class notes as very helpful ($\underline{M} = 4.7$, $\underline{SD} = 0.5$) and being forced to regularly distribute their studying, as opposed to cramming ($\underline{M} = 4.64$, $\underline{SD} = 0.67$). The next three most helpful strategies were making flashcards of important concepts ($\underline{M} = 4.5$, $\underline{SD} = 0.8$), writing notes and questions based on the readings ($\underline{M} = 4.5$, $\underline{SD} = 0.7$), and generating their own mnemonic devices ($\underline{M} = 4.4$, $\underline{SD} = 0.7$).

The least liked feature of this extra credit exercise was the amount of time required to complete the assignment. Although two students expressed some resentment over the effort involved, the remaining students clearly understood that their new-found successes partially depended on the increased commitment in time and effort. One wrote, "Not enough time--felt very pressured (but this was actually good for me in the end--it worked!)." When queried on the best features of this extra credit assignment, students primarily focused on avoiding the perils of procrastination. For example, one wrote, "It made me sit down and study on a schedule rather than randomly studying on whichever days." On the topic of increasing study skills and motivation, comments included, "Gave me extra credit, while at the same time encouraging

[student emphasis] me to develop a pattern of better study habits and devices," and "I do very poorly on tests. Therefore, the extra credit gave me a positive attitude. It gave me hope."

Discussion

Implementing this innovative, yet simple extra credit exercise resulted in multiple positive outcomes. First, students who participated in this assignment engaged in a wider variety of effective learning and study strategies and to a larger degree than they had in the past. Second, these study skills improved students' subsequent exam performance. Third, significant improvement on subsequent exams resulted in reducing the number of failing students. Fourth, student retention rates in courses increased as a function of providing failing students with a vehicle for maintaining higher motivation. Fifth, providing extra credit options for poorly performing students may serve to offset learned helplessness and enhance student interest and desire to persist (Bate, 1976). Finally, it is an administratively simple assignment that can be easily modified for any course. Unlike more traditional forms of extra credit (e.g., writing additional papers or participating in psychology experiments), this assignment directly helps students master the course material.

One important recommendation for instructors includes providing alternative extra credit options (e.g., extra credit exam questions) for all students in the course. The Norcross et al. (1993) faculty survey showed that providing extra credit to select students was the most common argument against the use of extra credit. Indeed, last year, my campus' Faculty Senate asked the Academic Standards Committee to review the university's policy on the use of extra credit options for similar reasons. After much discussion, the Academic Standards Committee, with the approval of the Senate recommended that if faculty employed extra credit options, the information be present on the course syllabus and discussed explicitly with students.

A third suggestion might be to rework the items required for the exercise. For example, two students felt that making stacks of flashcards was tedious; an alternative would be to require that students submit an audio cassette of themselves practicing flashcard terms. More recently, I

have modified the assignment by including an eighth item that asked students to seek tutoring or attend workshops on study or test-taking skills at the campus learning center.

Perhaps one student's comment sums it up best when she wrote in an unsolicited personal note after completing the class:

I want to thank you for helping me through [the class]. Never before has anyone showed me your technique of studying....I used it for biology and went from an F to a C on a test. I wish I knew this technique sooner. Thanks tons!

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Author Note

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Extra Credit Assignment

In an effort to put psychological theory into practice, and avoid a learned helplessness effect, you will be able to obtain additional extra credit points by doing the assignment described below.

Rather than fill your limited time with some additional semi-irrelevant extra credit assignment, this exercise will require you to invest more time and energy on tasks that have been shown to relate positively and directly to good exam performance: In short, you will receive extra credit points for documenting regular, systematic, and effective study skills!! Although this may seem "too good to be true", the assignment does require a fair amount of sustained, documented and systematic effort. To receive the **full** 15 points, you must do as much of the following below and do them well. If you aren't performing to your satisfaction, it may be because you need to engage in more effective study habits in order to improve. So take heart, the harder you work on this assignment, the greater the potential gains you should see on future exams! I know you can do it!!! This assignment is worth a total of 15 points, provided you do all of the following components below:

- (1) You must **attend all** of the remaining class lectures for full credit (a documented excuse for an emergency will be the only exception allowed).
- (2) At the **beginning of each week**, you must turn in a complete, detailed, typed or neatly printed copy of your **class notes** from ALL of the lectures covered the week before. These records must possess the following characteristics in order to receive full credit:
 - a. The notes must be typed or neatly printed.
 - b. The notes must be clearly organized or in outline form.
 - c. The notes must be highlighted for important terms, concepts, ideas.
 - d. The notes must be detailed and comprehensive.
 - e. Late notes will not receive full credit.
- (3) You must turn in a typed or neatly printed summary of each **chapter of the textbook** that corresponds to that lecture at the same time as your lecture notes. In addition, you should try to use active reading strategies such as the Survey, Question, Read, Recite, Review method (SQ3R, see Robinson, F. P. [1961]. *Effective study*. New York: Harper & Row) or the Preview, Question, Read, Reflect, Recite, Review method (PQ4R; see Thomas, E. L., & Robinson, H. A. [1972]. *Improving reading in every class: A sourcebook for teachers*. Boston: Allyn & Bacon). Similarly, you must provide a summary for all of the assigned additional readings. The textbook and reading notes should have the same features a-e above.
- (4) You must provide **flashcards** for the important concepts/ideas from class. These should be turned in at the same time as your class notes. Put the term or idea on one side and the explanation on the other side.
- (5) You must provide **at least 12 mnemonic strategies** for each lecture and for each textbook chapter (e.g., acronyms-"HOMES" for the 5 great lakes--Huron/Ontario/Michigan/Erie/Superior, or use of imagery, rhyming)
- (6) You should provide evidence of **active learning by studying with others**, or in groups, or show evidence of giving "**mini-lectures**" (tape record your sessions for me!)
- (7) Actively **participate** in class and out. Ask questions in class, of your classmates, come to my office hours, and/or write out questions.
- (8) Go to University Learning Center (ULC) in UH-123, 278-2738 and attend workshops on study skills, exam taking skills, time management skills, etc. or make an appointment for a personal consultation (bring back signature of your ULC counselor).

Do your best, I know that you will improve, but it does take extra work and effort. I'm willing to give you extra points just to study harder and do better! Good Luck!!!!

Class Notes	Text Notes	Other Rdgs.	Flashcards	Mnemonics	Active/Other	TOTAL
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