

Developments in Business Simulation & Experiential Exercises, Volume 13, 1986

SELF-GRADING OF EXAMINATIONS BY STUDENTS A VIABLE ALTERNATIVE TO TRADITIONAL PROCEDURES

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ABSTRACT

This paper provides a discussion of self-grading of examinations by students as an alternative to the traditional approach to the examination grading process. The possible benefits to be derived from this approach are presented. Some potential limitations are also addressed. An overview of procedures utilized in a successful implementation of the self-grading approach is presented, including the penalty structure and audit procedures employed to promote compliance with the self-grading format.

INTRODUCTION

The contribution of the traditional in-class examination towards effective learning has been and continues to be a topic of research and debate. For example, the merits of the examination process have been evaluated with regard to enhancement of such learning attributes as increased knowledge, comprehension and application ability [4]; the impact of testing on students' ratings of the instructor have been studied [2]; the effectiveness of open book, closed book and take-home exams have been contrasted [6]. Regardless of the outcome of this extensive and diverse research, the in-class examination appears likely to continue to serve as a tool to promote and measure learning for some time to come.

In light of the continued use of in-class examinations, research concerning procedures utilized in administering in-class exams seems warranted. An ongoing dialogue can provide an opportunity for improvements in various examination attributes. For example, this paper argues that a self-grading approach can offer an opportunity to extend the students' learning cycle for a given set of material beyond the examination day. Additionally, a self-grading procedure enables the instructor to make more efficient use of time resources without compromising on the nature and style of the examination. This procedure may be particularly attractive where the course content dictates problem style examinations. The purpose of this paper is to suggest a process which allows self-grading of examinations by students and which has the apparent advantage of discouraging cheating.

Literature Review

The procedure of having students grade their own examinations has also been used as a technique for behavioral experimental studies crossing several discipline lines. The self-grading methodology was utilized in a study in the education field to determine if introduction of a university honor code impacted the level of cheating [1]. Tittle and Rowe [2], researchers in the criminal sanctions area, used the self-grading methodology in conducting an experiment to test the deterrence hypothesis. The process for self-grading of examinations by students presented in this paper is an outgrowth of a recent experimental study [3].

Laufer [3], conducted a generic task laboratory experiment to assess the impact of complexity on tax compliance. Noncompliance is defined as the difference between the reported and correct tax liability. Accordingly, compliance is present when reported and correct amounts agree. The experiment was structured so that undergraduate students, enrolled in principles of accounting, were surrogates for taxpayers. The students graded their own examinations. Towards this end, the students were provided with instructions and rules to utilize in determining and reporting their examination scores. This represented the task surrogate for determining and reporting of tax liability. The examination scores reported by the students were utilized in determining their course grade. The experimenter determined the correct examination score for each student which was compared to the reported score. Students were not specifically aware of this fact. The differences between the reported scores and correct scores were statistically analyzed.

Based on the analysis of the results there appeared to be a significant relationship between the degree of computational complexity and the variability between reported and actual scores. That is, the frequency and degree of errors increase as complexity increases. This finding has intuitive appeal. As a task becomes more difficult, one would expect more errors. However, the overall level of compliance was not affected. It is possible that the enforcement structure may have been responsible for the high degree of compliance.

Since evidence exists that compliance was high, the self-grading approach may have practical application. An overview of the self-grading procedures based on the experiment is presented in the next section.

Procedure

The self-grading procedures and rules should be made clear to the students early on in the course. It is probably desirable to detail the procedures to be followed during the semester, including the audit and penalty provisions. A syllabus supplement offers a convenient method to accomplish such a task. The supplement should address topics such as examination and enforcement procedures in addition to audit procedures and penalty structure.

A possible structure for the supplement is presented below.

(I) Examination Procedures

For purposes of grading the exams in this course, a self-assessing (self-grading) procedure will be utilized. The following is intended to provide a clear description of how this system will function.

Exam day will follow typical procedures--exams will be closed book and given during class time. Upon completion of the exam, or at the end of class time, which--

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ever comes first, the exam is to be handed in to the Instructor,

At the next class meeting, the students will have the exams returned, along with answer sheet, grading instructions, and reporting forms. The student is to complete the reporting forms by utilizing the answer sheet and grading instructions. The reporting form will communicate to the instructor the points earned on the exam. Reporting forms will be due at the beginning of the third class period following the exam (one week after the exam is returned). The student need turn in only the required form(s). The exam should be kept by the student as support for grading computations! Additionally, the student may want to keep a copy of reporting forms.

Note that 70% of your grade in this course will be based on the exam scores you report. Therefore, it is in your best self-interest to follow the instructions to avoid loss of exam points due to penalty assessments.

(2) Enforcement Procedures

In order to assure compliance with grading instructions, reported exam scores will be subject to audit verification with penalties assessed for noncompliance.

Exams will be selected for audit verification. If your exam is selected for audit, it is essential that you are able to produce evidence to support the reported score. Accordingly, you must retain your exam.

(3) Audit Procedures

Those selected for audit will be informed of such shortly after filing the reporting forms. Audit conference time and date will be set. At the audit conference the student will be asked to support their exam score calculations, either in whole or in part. Towards this end it is critical that the student keep their exams as it will be the primary source of backup for reported score. The auditor will have the report forms the student has filed. Additionally, random pages of random exams will be copied by the auditor and may be used for audit purposes. If there is a discrepancy between the reported score and the audited score, a penalty will be assessed.

(4) General Penalties Penalty for Late Filing

Students will be assessed a penalty for late filing of an exam score on the required forms as follows. If forms are filed after the due date, but before the next class meeting, the penalty will be 5% of reported exam score. For filing one or two class meetings late, the penalty will be 10% of reported exam score. If filing occurs following the second class meeting after the due date, the penalty will be 25% of reported score. Additionally, there will be a failure to file penalty - a zero on the exam.

Penalty for Failure to Sign Reporting Form

If the exam score reporting form lacks a proper signature, then a penalty of 1% of reported score will be assessed.

Math Error Corrections

If math errors are discovered in the exam score reporting form, then the reported score will be adjusted.

This adjustment will be made without an audit conference. Students will be informed of such adjustment.

Audit Penalty Structure

1) There will be an automatic penalty of 2% of the reported exam score if the reported exam score is in excess of the audited score.

2) An additional penalty will be assessed based on the following sliding scale:

Excess of Reported Score Over Audited Score (in points)	Penalty Assessment In % of Reported Score
1-5	1%
6-10	5%
11-15	10%
16-20	15%
21-25	20%
Over 25	25%

3) If fraud (cheating) is evident, there will be a fraud penalty assessed, ranging from loss of one letter grade to an F in the course.

4) No penalties will be assessed if the audited score is greater than the reported score.

5) If the student cannot produce evidence to support reported exam scores, then for those section(s) of the exam that are audited, the score will be zero and the scope of the audit may be expanded.

This examination procedure should enhance the learning process. It also places a high degree of responsibility on you. Time deadlines will be enforced; therefore, if you miss class, you should make other arrangements with me to pick up your exam and related materials or to turn in report forms. Finally, I cannot emphasize strongly enough how critical it is that you retain your exam copy--without it you will be unable to justify your reported score should you be called on to do so.

The appendix provides an example of a reporting form which students complete to report their examination score. The appendix also includes an illustration of the instruments provided to the students for utilization in grading of the examinations. An examination question is presented along with the corresponding answer sheet and grading instruction information.

Audit verification of examination scores and penalties for noncompliance are utilized to promote proper grading of the examinations. Audit implementation and selection techniques were designed to replicate many of the facets of the IRS process. The appendix provides an example of the audit notification letter. A few of the audits involve review of the entire examination. The results of these audits can be used to determine areas of emphasis in future audits. For remaining audits, only selected sections of the examinations need be reviewed.

Contribution and Limitations

The value of any suggested procedure should be evaluated in terms of the benefits derived from utilization and potential limitations. The method presented above appears to offer two possible advantages over the more traditional in-class examination procedure. First of all, it extends the learning cycle with

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regard to material covered on the examination. Returning the examination to the student the following class meeting along with the materials to be utilized in grading the examination will cause the student to deal with the materials covered again, in the process of grading their examinations. The feedback is direct and prompt. The answer sheet and grading instructions require student understanding of the material so that he/she can properly grade the examination. This should enhance the learning process,

The self-grading format also provides greater freedom in designing the examination to suit the needs of the particular course curriculum without greatly infringing on the instructor's time resources. An individual facing significant time demands need not feel restricted to multiple choice style examinations if the self-grading procedures are utilized. A problem- styled examination administered to a class with a large enrollment will provide the most significant opportunity for the reduction of time demands. The additional time input required to copy and audit random examinations should be minor in comparison to the time required to adequately grade each examination. The copy-audit procedures need only create the perception that incorrect grading by students may be discovered. This can be achieved by auditing a very small percentage of the class population. The typical audit procedure should take less than ten minutes and can be scheduled at the instructor's convenience.

One significant problem with any testing procedure is cheating. Intuitively it seems that a self- grading system would escalate this problem. However, the audit procedure, coupled with adequate penalties for noncompliance, can greatly diminish the instances of cheating by students. Research conducted within the deterrent doctrine generally supports that sanction threats against cheating significantly reduce the deviant behavior- U 5]. Laufer [3] found no significant difference between examination scores as reported by students and the correct (instructor graded) examination scores. It appears the enforcement structure may have been responsible for the high degree of compliance.

Summary

There is great variation in the structure of course curriculum and methods in which to enhance further learning and measure performance. The in-class examination is a widely used tool to promote learning and measure performance. Self-grading of examinations by students may offer an opportunity to further enhance learning and free up faculty time resources. The procedure presented here is not intended to provide a final solution; however, it does offer guidelines which allow for an efficient and effective alternative to the traditional grading process.

APPENDIX

REPORTING FORM

Name _____ Course Section Number _____

Address _____ Exam Number _____

Phone Number _____ Exam Score _____
(From Line 8 below)

Student ID# _____

1. Section one, points earned _____
2. Section two, points earned _____
3. Section three, points earned _____
4. Section four, problem one, points earned _____
5. Section four, problem two, points earned _____
6. Section five, problem one, points earned _____
7. Section five, problem two, points earned _____
8. EXAM score, add lines 1 through 7 _____

I have examined this report form and to the best of my knowledge and belief the information reported here-in is true, correct, and complete. I understand that any variance between the exam score reported and an audited exam score will result in a loss of exam points, based on the penalty structure detailed in the course syllabus. Additionally, if there is evidence that the cause of the variance is due to academic dishonesty or misconduct, then penalties allowed under university guidelines will be invoked.

(your signature)

(date)

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APPENDIX

ILLUSTRATIVE EXAMINATION QUESTION(S) WITH MATERIALS FOR GRADING

Example #1

Exam Question

The examination question provides beginning of the month account balances and six events (transactions) which occur during the month. The students are required to determine end-of-month account balances for:

Interest Payable
Paid-in Capital
Depreciation Expense
Cash

Answer Sheet

- A) \$ -0- C) \$ 3,000
B) \$ 5,000 D) \$21,000

Grading Instructions

Problem one - Each correct answer is worth five points. Partial credit for incorrect answers may be earned as follows:

A) Interest Payable - If your incorrect answer was the result of failure to adjust the account balance for the impact of the Jan. 1 transaction, then one point partial credit is earned. If your incorrect answer was the result of a math error made in determining the account balance after the Jan. 1 transaction, then three points partial credit are earned.

B) No Partial Credit.

C) Depreciation Expense - If your incorrect answer was the result of failure to adjust the account balance for the Jan. 31 event, then one point partial credit is earned.

D) Cash - There are several transactions which affect the cash account. The Jan. 1 transaction causes a decrease (credit) in cash of \$10,500. The Jan. 16 transaction causes an increase of \$55,000, the Jan. 22 transaction a \$4,000 decrease, and the Jan. 26 transaction a \$35,500 decrease. For each of these handled correctly, one point is earned. If you handled all transactions correctly but made a math error in arriving at the account balance as of Jan. 31, then 3 points are earned.

Sum up points earned and enter on Line 7 of reporting form.

Example #2

Exam Question

1) The _____ is the financial statement that provides information about an entity's resources and claims against those resources at the end of a specific period of time.

Answer Sheet

In this section it is possible that different words or phrases exist which carry the same meaning. Accordingly, for some questions more than one answer is listed below. To be

correct, your answer must match up with one of the answers provided. The use of common abbreviations is acceptable.

1) Correct Answer

Balance Sheet

Acceptable Alternatives

Statement of Financial
Position

Grading Instructions

Each correct answer is worth three points. Total points earned in this section is equal to the number of correct answers multiplied by 3. Record that number on Line 3 of the reporting form.

AUDIT NOTIFICATION LETTER

Doug Laufer
Acctg. 2103
Business Bldg. 201
624-7619

Sally Smith
433 Drummond
Stillwater, OK
SS# aaa-aa-aaaa

Your Acctg. 2103 exam (exam #3) has been selected for audit verification. The sections of your exam to be reviewed are noted with checkmarks:

_____ Section One
_____ Sections Two
_____ Section Three
_____ Section Four
_____ Section Five

Audits of exams will be conducted October 9, 10, and 11. It is important you contact me to set a s specific appointment time. The space below is provided to record your appointment.

APPOINTMENT INFORMATION

Place: Business Building
Room: 126

Date:
Time:

For the sections indicated above, the examiner will review your exam score reporting form and related information. You will be called upon to substantiate the score you have reported. Accordingly, you will need to bring the appropriate section(s) of your exam and any other relevant material. The audit determination will be on the basis of available information only. You will be informed of any proposed exam score changes during the audit conference.

If you have any questions, please contact me at the number shown in the heading of this letter (624-7619). Thank you for your cooperation.

Sincerely,

Doug Laufer

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