

## ASSESSMENT COMPLIANCE AND PERFORMANCE: A TEST OF INCENTIVE SYSTEMS FOR STUDENTS

Kathleen Krentler, College of Business, San Diego State University, San Diego, CA, 92182; (619) 594-4762  
Patricia Dintrone, College of Business, San Diego State University, San Diego, CA, 92182; (619) 594-4762

### ABSTRACT

Direct assessment of student learning is a requirement of AACSB standards and of many universities. While a variety of commercial tools exist to aid educators in accomplishing this task, there is virtually no guidance in how to elicit compliance in participation and effort toward performance when these tools are used. This study tests three different incentive systems for students to determine whether they produce differences in achieving participation compliance and performance variation. No significant differences are found among the three systems in terms of participation compliance. All three systems tested provided high levels of student participation. An incentive system that requires performance at or above a stated standard produces significantly higher performance in the study than a competitive performance system or a system that does not reward performance.

### INTRODUCTION

Assessment: a term that has become increasingly familiar to educators at all levels. In higher education the requirement to engage in outcomes assessment has grown dramatically over the past decade. Almost all universities and multi-university systems are calling for stringent assessment processes. The Chancellor's Office of The California State University system, for example, requires an annual accountability report from all units (down to the department level) that includes ten performance areas and requires details of the processes that are in place to assess whether the unit is meeting its objectives, the results of the assessment procedure, and the outcome of changes made as a result of the assessment. For schools and colleges of Business, the pressure to have in place strong assessment programs comes not only internally, from within the university or system, but also externally from the AACSB, the premier accrediting body for the business discipline. AACSB's assessment requirements have become increasingly stringent as its standards have evolved.

Colleges of Business have sought to meet the challenges of these increased demands through a variety of approaches. Assessment centers, directors of assessment, and assessment committees are commonplace in business schools nationwide. While

some schools have sought to develop their own assessment tools (Krentler, 2003), it has been far more common to adopt tools offered by a growing variety of service providers. For-profit organizations such as Educational Benchmarking Incorporated (EBI) and Educational Testing Service (ETS) offer a wide variety of products that can and often are used by business schools to assess the results of their efforts to meet their varied objectives. A compromise between individual development of tools and the (often expensive) purchase of commercial tools has been undertaken by a consortium of colleges of business in the California State University system. Business programs at 14 CSU campuses have worked together to develop the Business Assessment Test (BAT). This test, comprised of 80 multiple choice questions spanning a range of basic business topics, has been in use for 5 semesters.

While colleges of business have been aided by the proliferation of learning outcomes assessment tools, the task of tool administration has remained largely a solitary one. How best to accomplish assessment administration in a way that garners active participation, if not enthusiasm, from students?

The goal of this paper is to look beyond the assessment tool itself to the challenges of administration of that tool. Specifically, it is the purpose of this paper to evaluate the effect of three incentive systems on student compliance with and performance on BAT, an outcomes assessment tool.

### Compliance and Performance

While attention has been paid to the tools that can and should be used to assess performance (Grudnitski and Krentler, 2004; Tippeconnic, 2003; Van Kollenburg, 2003), developing successful means for implementing such tools has received less attention. In 2003 Krentler noted "implementation challenges," primarily the difficulty of getting students to take an assessment test seriously and exert effort, as a constraint to the adoption of the ETS field test as an outcomes assessment tool for business students. In 2005, Banta stated "It's tremendously difficult to motivate students to take a standardized test that is not connected with what they believe they've learned in class." Banta further states, "some students who don't see the importance of the test won't do their best work. They will become malin-

gerers." It seems fair to conclude that unless there are potential benefits for participation or consequences to non-participation, students are unlikely to step up and volunteer. Further, unless effort is incentivized in the participation, students are unlikely to exert it.

These challenges are often addressed by including program assessment tools as part of a course. In some cases the assessment makes use of an assignment that is already part of a course. In such cases, questions of participation and effort are minimized because the assignment is part of the course grade. But many schools see the need for a comprehensive exam, designed to assess student mastery of material from many different courses. While students are asked to complete the tool/test during a specified course, there are two reasons that it is difficult to use the individual results on the test as a grading element in the course. First, the test covers material not taught in the course at hand, making it unfair to use student performance on it as part of a grade. Second, and perhaps more important, the purpose of program assessment is to collect information on the effectiveness of the program, not to reflect either positively or negatively on an individual student's performance. Hence while it is possible to administer the assessment tool (i.e. exam) in a course, it is not appropriate to include a student's performance on the exam as part of the evaluation of his or her course performance. This creates challenges in obtaining participation compliance. Beyond participation alone, it is certainly questionable whether this approach can mandate that the student exert performance effort.

These challenges have been met by offering a variety of incentive systems to students as means of garnering both participation and effort toward performance. Does the nature of the incentive system offered make a difference in participation compliance? Does the nature of the incentive system offered make a difference in performance?

Literature on the effectiveness of varied types of incentive systems on effort and performance in experimental settings and in company environments has found variation. Huselid (1995) and Huselid and Becker (1995) found that systems mandating high performance from employees yielded significantly greater benefits to the overall firm's performance. Further, van Dijk, Sonnemans, and van Winden (1997) found that individuals exerted greater effort when their payment scheme was based on actual performance rather than relative performance. Similarly, Gneezy, Niederle, and Rustichini (2003) found that both men and women exerted more effort and performed at higher levels when their compensation

was based on a piece-rate incentive rather than a competitive (tournament) outcome.

In educational settings, particularly at the secondary level, research has shown that a mandated level of performance on an exam with consequences for not meeting that level does produce significantly higher levels of overall knowledge (American Federation of Teachers, 1995; Bishop, 1998; Costrell, 1994). This finding has been particularly noted in the case of states that have introduced required passage of a curriculum-based exit exam in order for students to graduate from high school (Bishop, 1998). In higher education however, despite the proliferation of exam based assessment tools, there has been a dearth of research investigating the efficacy of incentives or other means to improve participation or performance.

## METHODOLOGY

The Business Assessment Test (BAT) was administered to six different sections of the same course (International Business Strategy) at a large public university during the spring of 2005 as a component of the College's assessment program. The exam was administered during a regular class period; however, it was not part of the evaluative components for the course. Students knew in advance the class period in which the assessment would be administered. The six sections were taught by three different faculty members (two sections each). The faculty members were aware of the format of the exam, but not its contents, before it was administered and were asked to tell their students that it was a program assessment tool and that their efforts were important. Faculty members were also encouraged to use some form of incentive to encourage their students to participate and do well, but specific methods were determined and chosen by the respective instructors. Each faculty member offered students an extra-credit incentive related to the assessment. Specifically the three treatments were:

1. Same number of extra credit points awarded for participation (completion of test) to all students regardless of individual performance.
2. A larger number of extra credit points awarded to students who performed in the top 10% of the class on the test; a smaller number of extra credit points awarded to students in the middle 80% of class performance; an even smaller number of extra credit points awarded to students who took the test but performed in the bottom 10% and to students who chose not to take the test.
3. A specified number of extra credit points to students who took the test and achieved a specified (70%) level of performance.

The same version of the test was administered to all six sections over a four-day period. Classes were all

approximately equal in size (60 – 65) and each treatment was used in two class sections. Students self-selected into the six sections at the beginning of the semester without being aware of the assessment test or the incentive systems. Final terms grades across the six sections were not significantly different, thus indicating that no section contained students with greater ability or knowledge.

Based on existing literature regarding the effectiveness of varied incentive systems in experimental, corporate, and educational settings, it was expected that:

- Treatment 1 would motivate students to participate but not necessarily motivate them to exert effort to perform well.
- Treatment 2 would motivate students who chose to take the exam to exert effort to perform well but equally, would produce larger numbers of students who were not motivated to participate at all.
- Treatment 3 would motivate students to both participate and exert sufficient effort to perform at or above the specified level. Treatment 3 should be expected to produce a higher level of performance than Treatments 1 or 2.

## RESULTS AND DISCUSSION

Table 1 reports participation levels and performance scores across the three incentive system treatments.

**TABLE ONE**  
**Participation and Performance by Treatment**

Treatment	N	Participation	Average Score*
1	136	94.1%	40.4
2	129	89.3%	40.6
3	124	92.7%	42.7**

\* Raw score correct out of 80.

\*\* Significant;  $p < .05$ .

### Participation

Although Treatment 2 (larger number of extra credit points awarded to students who performed in the top 10% of the class on the test; a smaller number of extra credit points awarded to students in the middle 80% of class performance; an even smaller number of extra credit points awarded to students who took the test but performed in the bottom 10% and to students who chose not to take the test) produced a slightly lower participation level than the other two treatments, the difference was not statistically sig-

nificant. This is particularly interesting when it is noted that students under this treatment received some extra credit points even if they chose not to take the exam. Moreover, participation levels under all three treatments were high. This may suggest that the offering of any type of incentive system does produce relatively high levels of compliance. Since there was no control group in the study however (a section where no incentive was offered), this result should be viewed with caution. An alternative explanation is that a request from a faculty member to take the test, even when it is not part of the evaluative components for a course, is likely to be responded to favorably. The fact that Treatment 2 produced an 89.3% participation level even though students could earn extra credit points without even taking the exam appears to suggest that this alternative explanation is worth investigating.

### Performance

As expected, Treatment 3 (specified number of extra credit points to those who took test and achieved specified level of performance) produced a significantly higher level of performance amongst the test takers than either of the other treatments. This finding is consistent with the expectation that students would be motivated to exert performance effort under this treatment approach. Treatment 2, the competitive incentive system, however, also provided additional incentive for higher performance and yet did not yield a statistically significant higher level of performance than Treatment 1 which provided no performance incentive. This finding is consistent with earlier findings on incentive systems that suggest that competitive systems are not as effective as absolute standards. It may be that student's perceptions of the likelihood of scoring in the top ten percent of the class (required for the larger amount of extra credit under Treatment 2) suggested that it was "not worth the effort."

It appears based on the outcomes reported that the nature of the incentive system does not have a major effect on students' decisions to participate. As noted earlier, however, it is a limitation of this study that a control group (one offering no incentive at all) was not included. All three incentive systems produced high levels of student participation. Future research that included a "No Incentive" treatment or perhaps two additional treatments: "No Incentive" and "No Incentive other than a request from the instructor" would add to the ability to evaluate the effect of incentive systems on participation.

It does appear, based on the results of this study, that the nature of the incentive system affects student performance. A system that required students to perform to an absolute standard produced significantly higher performance than a competitive incentive system or a

system that offered no performance incentive at all. Future research might investigate whether the level at which the absolute standard is set influences performance. Does an extremely high level (for example, 90% rather than the 70% used in this case) produce even higher levels of performance? Alternatively, is it possible that when the standard is set too high that participants would simply conclude beforehand that their likelihood of meeting it is low and hence the standard would have a dampening effect on effort and performance?

### CONCLUSION

As outcomes assessment moves to become a firmly entrenched part of higher education, colleges of business need to identify ways of incorporating it into their efforts in meaningful and valid ways. The use of direct assessment of student performance in demonstrating mastery of learning goals is only likely to increase in prevalence as it is mandated by the AACSB (Standards 2005: 66). Central to the use of direct assessment measures such as exams, however, is the assumption that students will be motivated to demonstrate their highest level of mastery on a particular instrument. If this assumption is false it calls into question the validity of direct measures as assessment tools. It is necessary, therefore, to consider the incentives which are provided to students as means of promoting participation and effort and to determine how assessments tools can be best administered so as to elicit students' best performance. This study begins to build a base of information to aid educators in making decisions about how to implement their assessment efforts to produce the most accurate assessment of student learning.

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