

## EXTRA CREDIT: DOES THE SYSTEMATIC USE HAVE AN EFFECT ON STUDENT LEARNING?

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### ABSTRACT

Many articles have been published that identify the advantages and disadvantages of offering extra credit in postsecondary courses by looking at the issue from both faculty and student perspectives. The literature suggests that faculty use extra credit as panacea for their perception that promotion and tenure decisions are unfairly hinged on student evaluations. The current research attempts to identify empirically what effect, if any, the offering of extra credit has on student learning. Comparing exam scores of 1204 students in relation to their level of completion of extra credit assignments identified a mix of interesting results.

**Key Words:** extra credit, empirical research, hospitality education, post-secondary education

### INTRODUCTION

To date, many articles related to the subject of appropriate use of extra credit in post secondary classes has focused on faculty perceptions of the validity of providing students opportunities for extra credit and students willingness to participate (Groves 2003, 2000; Corsun, 2000). Certainly, it is easy for faculty to agree that providing students an opportunity to do an extra activity to offset the work that students failed to do in the first place, is unlikely to provide for meaningful student learning. However, detailed analysis should be conducted both in the theory behind using extra credit as well as quantifiable research into the question of whether using extra credit equals improved learning.

A common complaint with the use of extra-credit is that the practice promotes grade inflation and is used to positively effect student satisfaction. Others argue that if a school turns out more rigorously educated students and does this by not inflating grades, this may limit graduates' ability to secure prized jobs available in the workplace (Groves 2003). Thus, without standardization of grades across universities, graduates will not be fairly selected by industry.

Positive attributes for the practice of extra credit has noted that its use extends the classroom (Groves, 2000), adds excitement to the subject than would otherwise be possible (Burns, 1993; Nahmias, 2005), and the need to offer students extra credit to take part in research on campus (Henley and Savage,1993). The common thread in all of the support for the use of extra credit is that faculty should use the it in a planned and systematic fashion, and if so, they will be able to justify the practice as having a positive effect on student learning and satisfaction.

Moreover, most faculty would likely agree that there is a need to hold all students to the same high standards. Moreover, some authors opine that there is a distinct and growing group of students who follow an extra credit model of education (Hasse and Lourey, 2005). That is, if students do not do the work at all, on time, or at the expected level, students will believe that an extension or make-up assignment should always be available (Wisensfeld, 1996).

A common argument against the use of extra credit in academic course is that if a significant number of students are being given extra time to complete work while the rest of the students complete the assignment on time, this is a double standard. A recent study found that 70 percent of students responding expected instructors to extend due dates on assignments (Hasse and Lourey, 2005). If a majority of students expect extra consideration for improving their grade when it has not met their expectations then it would seem important to determine if a systematic use of extra credit in courses has any impact on student grades. Others argue that appropriately designed courses do not require the offering of extra credit to motivate learners (LaLopa, 2000). However to date, no empirical studies have been published that attempted to identify if extra credit offerings completed by students equaled improved learning



## OFFERING EXTRA CREDIT

The current study employed extra credit as a planned part of an introductory undergraduate course in hospitality management. Students were provided 11 opportunities throughout the term to turn in short papers that would count toward their final grade. These short assignments were guided by instructor led questions that supported content discussed in the course and were due directly before or shortly after the topic was discussed in class. Furthermore, failure of students to complete the extra credit work did not have an adverse effect on their final grade. Each extra credit paper was worth five points, thereby a total of 55 points or 6.7 percent of the total points available in the class. Details regarding the structure and expectation of the extra credit activities were introduced to the students at the beginning of the course term.. This systematic practice is supported by the available literature on the subject of extra credit (Druger, 200).

When thinking about any type of classroom assessment, instructors must focus their attention toward the student to determine teaching methods that improve student learning. The use of extra credit in undergraduate course work is an example of a teaching method that faculty may employ to improve student grades. In the current study the author wanted to identify if the use of extra credit had any effect on student learning. Extra credit points earned by the students were analyzed to identify the potential impact on exam scores and not the final grade earned in the course.

## METHODOLOGY

The current study was conducted over a 3-year period and included 1204 students who were enrolled in an introductory course in hospitality management. Students enrolled in the course reflected a wide selection of students from a variety of majors offered at the University. The requirements of the course included weekly quizzes (12), short papers (4), and exams (4). Final grades were calculated using the previously mentioned assessments along with points earned for attendance and completed extra credit assignments. In the first class, as well as noted in the course syllabi, students were informed of the expectations of the instructor in regards to how extra credit papers would be assessed. To receive full credit for the extra credit student's paper must be typed and turned in on the day that they were due. No extra credit points were awarded to students who missed class or forgot to turn in the papers on the assigned due date.

Data collected in the current study were concerned with identifying the relationship between the amount of extra credit a student earned and a variety of independent variables such as gender, year in school, undergraduate major, results from four exams, and average exam score. Data were analyzed using SPSS and descriptive, ANOVA and independent t-test statistics were completed and reported.

Data were analyzed for 4 exams, exam average, gender, class standing, major at university, and earned extra credit points. The fourth exam was a cumulative final that covered topics covered during the entire semester.

## RESULTS

In the current study, 1204 students participated in the study. The study was completed using students in a single undergraduate course located in a large university. A total of eight classes were used to compile the sample and the classes were taught by a single instructor using the same textbook over the research period.

The mix of students was approximately evenly divided with slightly more females (52.9%) than males (47.1%). The course was a required course for students completing a B.S. in Hospitality at the university, but the course was open to all students attending the university as an elective course. Most students seeking the degree in the major that supported the course took the course as a freshman. However, a majority of students in the sample were non-majors of the department (64.3% compared to 35.9%). Over the three-year period class standing of the students were 40.4% freshmen, 34.2% sophomores, 19.8% juniors, and 6.3% seniors.

The mean number of earned extra credit points over the period of the study was 29.8 points out of a total of 55 possible points. Fifty-eight point two percent of students enrolled in the class earned at least 30 points worth of extra credit. Eleven point two percent of students did not attempt to earn any of the available extra credit points and 18.8% of the students who participated in the research completed all 55 available extra credit points.

To analyze if student's participation in the extra credit option had any effect on the four exams and the



exam averages students were collapsed into two groups, those earning more than 30 points and those earning 30 or less extra credit points. This cut-off point used for this analysis was based on the mean number of points earned over the data collected period of 29.8 points. When the data were analyzed using the t-test statistic, it was found that there were significant differences in the mean scores on exam 3, 4, and exams average. In all cases the mean scored for students who had completed more than 30 extra credit points were higher than those who complete less than 30 points.

Additional analysis was completed to determine if there were any significant differences in the amount of participation in the extra credit offerings by other factors such as gender, class standing, and student's major in regards to the mean exams score. Using the t-test statistic, no significant differences between any of the means exams scores when compared to the factors of gender and class standing were found. Significant differences were identified for exam 1, exam 3 and exam averages when compared by student's major (major and non-major).

Finally, cross tabs were analyzed to identify any differences among the three factors (gender, major, and class standing) and the participation in the extra credit points. As for gender 68.6% of females completed 30 or more extra credit points compared to males of 46.7. Using the t-test statistic the mean score of earned extra credit points were significant. When comparing by major, the percentage of students in the major completing 30 or more points were 67.5% versus non-majors of 53.1. Again the difference in the mean score of earned extra credit was found to be significantly different. When comparing earned extra credit to class standing all groups were similar in the percentage of students at each level earning 30 or more points (freshman 56.2%, sophomores 59.2%, juniors 63.6%, and seniors 50%). An analysis of variance statistic was used to compare the mean extra points earned by each group and this was found not to be significantly different among the groups.

## DISCUSSION

The analysis of the findings in the current study indicates that the use of extra credit in an introductory course can have a positive impact on student learning as measured by course exams. The results appear to support a correlation between the amount of extra credit earned and student's scores on the exams. These findings imply that the use of extra credit to motivate students, is relevant to the overall objectives of the course and when presented as part of the total course activities, students will benefit from the effort. The results of this study provide guidance as to the appropriate use of extra credit to improve student learning.

Several interesting findings from this study include that females were more likely to take advantage of the extra credit opportunities than their male counterparts, participation in extra credit activities were evenly split among students at all class standing levels, and that students within the major took significantly more advantage of the extra credit opportunities than non majors.

In the current research the analysis attempted to address as many factors and were available at the instructor's disposal to identify their potential effects on the outcomes of the exams used for analysis, however, it is plausible that those students who performed well on the exams would have done so even without the extra credit. Likewise, it is difficult to fully appreciate how much the extra credit positively affected those who did poorly on the exams. Future research should attempt to either control for the availability of extra credit by employing different strategies in classes and then comparing, while attempting to control or monitor for standardized exam scores, GPA or other academically relevant indicators.

The findings of the current research should extend and add to the debate as to whether it is appropriate to offer extra credit in post secondary classes. The findings of this research support the positive positions identified at the top of this paper (Groves, 2000; Burns, 1993; Henley and Savage, 1993). Similar to those already reported in the literature, the common thread is that the current study and all of these examples of the use of extra credit were found to have a positive impact when faculty use the practice in a planned and systematic fashion, thus resulting in a positive effect on student learning and satisfaction.

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