Analyzing the Effect of Attendance on Performance of Academic Assessments

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Introduction

Educational research has shown that students do better in their classes when they consistently attend in person lectures and actively engage with the material. According to the article “Class Attendance and Exam Performance: A Randomized Experiment” by Jennjou Chen and Tsui-Fang Lin, attendance greatly affected students' exam performance. The results of the study showed that attending lectures corresponded to a 9.4-18% improvement in exam scores (Chen & Lin). Within the college academic sphere, attendance to lecture varies by student and is a major factor that influences a student’s performance. This research project seeks to expand on the correlation between a student’s attendance and their academic performance, measured by exam scores, by seeing if incentivizing attendance will lead to better student performance. According to the article “Why aren’t they attending class like they are supposed to? A review into students’ perception of the value of class attendance” by Trixie James and Karen Searyn the reason why students may not attend class is because they are not interested in the topic, have “lifestyle barriers, health problems, or it might just be convenient to do class work online.” To conclude by providing incentives we are hoping that students feel more motivated to attend lectures and to understand its importance. By actively attending lectures students are able to stay caught up with the material and better be able to prepare for their exams. This could potentially lead to higher exam scores.

Methodology

Attendance data from Week 5 - Week 12 of instruction for the Spring 2025 semester were collected by PAL Facilitators from their students. Students reported their exam scores and lecture attendance anonymously. Facilitators assigned code names for each student’s data as to ensure anonymity when in collaboration with the research group.

PAL Facilitators from MATH12, BIO121, and CHEM1A were divided into a control and experimental group. The control group proceeded with PAL sessions as normal logging attendance and exam data as necessary. The experimental groups gave their students a class agreed incentive (pizza party, donuts, for example) to encourage higher attendance rates as an attempt to raise exam scores. The significance of the data was determined by conducting a t-test and an ANOVA statistical analysis

Results

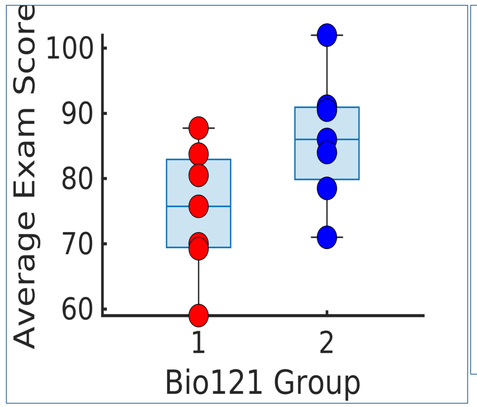

Figure 1: A t-test depicting slight correlation between the incentivized experimental group and higher exam scores for BIO 121 (t=-2.0858, p=0.0590, df=12)

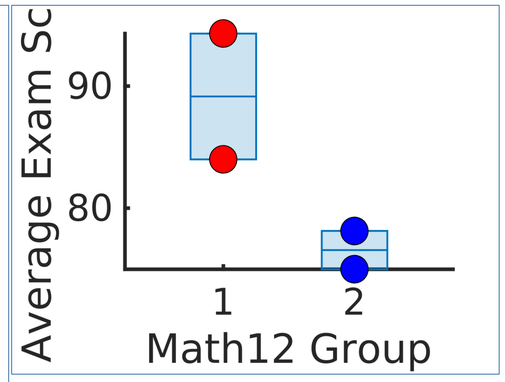

Figure 2: A t-test depicting no correlation among control and experimental groups and exam scores for MATH 12 (t=2.3370, p=2, df=5.3873)

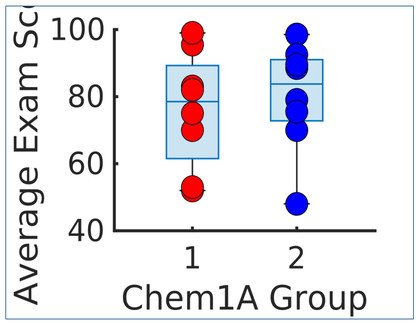

Figure 3: A t-test depicting no correlation among control and experimental group and exam scores for CHEM 1A (t=-0.4768, p=0.6409, df=14)

Source	SS	df	MS	F	Prob>F
Columns	207.13	1	207.134	1.13	0.3034
Rows	2769.56	16	173.097	0.95	0.5443
Error	2930.69	16	183.168		
Total	5907.38	33			

Figure 4: An ANOVA statistical analysis showing no significance between exam scores and incentivized attendance

Discussion

Overall, the data between the non-incentivized and the incentivized groups showed no significant correlation between incentivized student attendance and their exam scores with exception to Bio 121 which showed a slight significance. Though the data is insignificant, a variety of factors and limitations to the study must be taken into account. First and foremost, the data collection process was reliant on students self-reporting their own attendance and exam scores. While all students gave informed consent to participate in the research study and were informed that their responses would be anonymous, there exists the psychological factor that students will respond in a manner that makes them “look better” to the PAL Facilitator collecting the data. In addition, the data collection process was limited by a student’s participation in the PAL session in which data was collected. Data from some students was not discussed in this study due to a variety of factors, including a refusal to attend PAL sessions, inconsistent data collection due to attendance patterns, students dropping the course corresponding to their PAL, and more. On the other hand there was a slight significance between attendance and exam performance in Bio 121. This could be due to Bio classes being more conceptual in nature than Chem 1A and Math 12 therefore making it more important for students to be able to attend lectures. Another reason by Bio 121 may have seen a slight significance is that most of our students are Biology majors and prioritize their major classes more.

References

Chen, J., & Lin, T.-F. (2008). Class Attendance and Exam Performance: A Randomized Experiment. The Journal of Economic Education, 39(3), 213–227. https://doi.org/10.3200/jece.39.3.213-227

James, T., & Seary, K. (2019). Why aren’t they attending class like they are supposed to? A review into students’ perception of the value of class attendance. Student Success, 10(1), 115–129. https://doi.org/10.5204/ssj.v10i1.1111

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