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Relationship between class attendance and student performance

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Abstract

We investigate the relationship between university students' class attendance and learning performance. We use data from a course in a university in which attendance to classes is not mandatory. The methods used are cluster analysis and regression analysis. We find that students form three distinct groups: 1) those who drop out before the final exam, 2) those who attend classes as well as the exam, and 3) those who study independently and attend the exam. Most importantly, we find that in group 2, attendance is positively and significantly related to performance, after controlling for the effect of other variables potentially related to performance. We also find that students in group 3 are characterized by compelling reasons for absenteeism and a good ability to proactively search for information and study independently. The results are relevant for teachers and students alike. First and foremost, they can be used as a motivator for students to attend classes and for teachers to bear in mind the relevance of class teaching for learning outcomes.

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Keywords: Attendance; absenteeism; performance; learning outcomes

1. Introduction

Students' class attendance and engagement plays an important role in today's higher education. Several previous studies have shown that class attendance is an important predictor of academic outcomes: students who attend more classes earn higher final grades (e.g. Kirby & McElroy, 2003; Moore et al., 2003; Purcell, 2007; Silvestri, 2003).

However, differing results exist as well. In a recent study, no statistically significant relationship between class attendance and student performance was identified after adjusting for control variables that included gender and age (Eisen et al., 2015). Cortright et al. (2011) found that the influence of regular attendance on examination performance

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is more important for female students than male students: female students earning above-average grades had attended more classes than female students earning grades below class average. No such difference was identified for male students.

Several factors can influence the level of attendance, including university culture, workload, teaching methods, and the teacher. Class attendance can vary considerably across countries, universities, and courses. For example, Marburger (2001) studied economics students in the United States, finding that their average lecture attendance rate was 81.5%. By contrast, attendance rates in Finnish universities have been found to be as low as 40-50% (Kolari et al., 2008).

This paper assesses the relationship between attendance and performance in a Finnish university. Two key characteristics of the Finnish university system are it being free of charge, and a high level of academic freedom. In accordance with the basic value of academic freedom, attendance at lectures is usually optional, although it may be highly recommended.

We report on our own experience of the levels of attendance at an advanced methodological course in a Finnish university. The course is worth six European Credit Transfer System (ECTS) credits, and it is an optional course targeted to master-level students. It consists of two types of classes: lectures and exercise sessions. The learning materials developed for the course are intended for use together with class teaching, and can be deemed relatively poorly suitable to be used as standalone for self-study. The course grade consists of the final exam (50%), five sets of homework exercises (20%), and a team project (30%). Passing the course requires passing both the final exam and the team project.

2. Method

2.1. Data collection

The data set includes 86 students that took the course in autumn 2014. All such students have been included in the data set who had registered to the course and who indicated their actual participation by i) attending at least one lecture (excluding the first lecture, after which the dropout rate tends to be high), ii) attending at least one exercise session, or iii) returning at least one set of homework exercises.

In the course, attendance to lectures and exercise sessions is not mandatory. In theory, a student could receive full points from the course without attending any teaching events. However, in order to incentivize students to attend exercise classes, a small symbolic increment to their grade was offered to students who actively attended exercise sessions. No incentive was offered for lecture attendance.

Data about attendance were collected by circulating an attendance list at every teaching event, which was signed by students who were present. In order to ensure that students did not sign in their absent colleagues, the number of attendants indicated by the list was cross-checked with the total number of students in class. After the course, we gathered input from a subgroup of students, those who had attended the exam but not many teaching events, via e-mail.

2.2. Variables

The variables of our analysis are described below.

2.2.1. Explained variable

Exam points. This is used as an indicator of each student's course performance. It is the number of points received by the student in the final exam. Grading is on a scale from 0 to 100, with 40 points required to pass. We use exam points instead of the full course grade, because the course grade also includes homework and project work points, which may have been done in groups and may thus not reflect an individual student's skill level. Two exams were offered. Students could choose whether to attend either one of them or both, in which case the highest of the two exam results was recorded.