Do Attendance Policies Improve Student Performance? The Relationship among Attendance, Class Policies, and Grades

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Abstract
Class attendance is beneficial to students both in terms of grades obtained and in achieving learning outcomes. The link between attendance policies and actual lecture attendance and the link between these class policies and learning outcomes, however, has not been as clearly established. In this study we examine the relationships among these factors using attendance and grade data from three semesters in an introductory agricultural economics course. While the link between attendance and grade performance is positive we do not find that attendance policies improve either course performance or even class attendance itself.

Introduction
Previous research has shown class attendance to be positively correlated with both student grades and with achieving learning outcomes. There is evidence of the benefit of attendance even with other student characteristics controlled for, e.g. standardized test scores, high school GPA, motivation, study habits, etc. (Credé, et al., 2010; Golding, 2011). This attendance-performance correlation has led to mandatory attendance policies in many college courses with various grade incentives. Golding (2011) finds strong correlation between attendance and performance, but that class “policies” did not always result in improved performance. Devadoss and Folz (1996) found that attendance policies result in higher rates of attendance, and in a second part of their investigation, that more attendance (as a percentage of total class sessions) results in better performance. Marburger (2010) found that an enforced mandatory attendance policy significantly reduces absenteeism and improves exam performance. Snyder and Frank (2016) examine the effect of instructor characteristics and course policies – mandatory attendance verses a simple statement of expectations – on student attendance, grades, and two measures of perceived learning. They find that a mandatory attendance policy reduced absenteeism and resulted in higher grades. They did not find a significant correlation between attendance policy and students’ perception of cognitive and affective learning.

While acknowledging a statistical correlation between attendance and learning outcomes, others argue that as rational consumers of education, students choose to attend if they judge the benefits of lecture attendance to outweigh the costs (Hyde and Flournoy, 1986). Pinto and Lohrey (2016) discuss mandatory attendance in a philosophical back and forth, Pinto taking the position that attendance should be required and Lohrey the opposite. Pinto’s arguments include the often-cited fact that college students are adults and are responsible for their actions. He also believes that instructors should be responsible for attracting students to lectures, and not simply require attendance. Lohrey’s arguments in favor of mandatory attendance include learning students’ names, being able to remember who students are when recommendations are requested, and having a record available for college administrators. All her points can be seen as contending for attendance and taking role, but not necessarily for making attendance mandatory.

The view that students will attend class if it advantageous to do so would seem to fit the dominant economic paradigm of rational behavior (Varian, 1984, p. 115). Though most would admit that in many cases the assumption does not hold – students do not always seem to act in their own best interest. Do students behave rationally with respect to class attendance? We hope to contribute to the answer by asking first if attendance is positively correlated with student performance and then whether a mandatory attendance policy improves either or both attendance and class performance.

The introductory agricultural economics class at Southern Illinois University usually has 50 to 70 students each semester. From 1994 to 2014 our assumption has been implicitly that attendance needed a push – that students were not, in fact, rational optimizers. Grades therefore were based, in part, on class attendance. The
assumption was reinforced by the observation that better performing students attended regularly and by anonymous class evaluation comments. For example, about reading assignments, one student wrote: ‘Make readings mandatory so people actually read it.’ Comments like this lead one to believe that rationality can, at times, use a little boost from outside incentives. In 2014 lectures became available online, so the decision was made to drop the attendance requirement on a trial basis. This change meant that students might treat the lecture portion of the course as they would an online class, but that they would then miss out on the other benefits of class attendance such as class discussion.

This study examines the relationship between attendance and final grades. We cannot, of course, settle the matter conclusively with observations from three semesters, but we will provide evidence as to the role of mandatory attendance policies on students’ actual lecture attendance and on the impact that both attendance and policy have on class performance.

Data and Methods

Data on grades and attendance both before and after the requirement had been dropped made possible a test of the value of mandatory attendance in the introductory agricultural economics class. Data consisted of three semesters of grades point averages with paired attendance averages.

We tested three hypotheses:
1. Mandatory attendance improves grade point average.
2. The pattern of attendance is higher when attendance is required as part of the grade.
3. Grade point average is positively correlated with attendance.

The first hypothesis can be tested simply by comparing grade point averages with and without the attendance component included. This could present problems if the results were mixed, but as we will see the answer is straightforward. The second hypothesis tests the proposition that attendance is positively influenced by grade incentives as opposed to being mostly voluntary. This is tested by looking at whether the spring 2016 cohort’s attendance is significantly different from the other semesters. For that we use ANOVA. The last hypothesis gets at the important question of whether attendance, coerced or not, improves grades.

Results

The introductory agricultural economics class meets part of the university’s “core curriculum” requirements in the social sciences. Thus, the class typically has a few students - usually only one or two – from outside of the College of Agricultural Sciences. The number of Agribusiness Economics majors is also a small percentage, usually around ten percent of the class, the bulk majoring elsewhere in the college.

Table 1 shows the numbers of students tested each semester, their attendance average as a percent, and their grades calculated both with and without the attendance component. The attendance “requirement” consisted of basing 10% of the grade on attendance. Data were lost for 2015 so the next available semester, spring 2016, was used.

We see at the outset that on average no class was helped (or would have been helped) by the attendance component. This was true whether it was an announced part of the grade. Only 30% of the students received a boost in their point average from it in 2013, and 35% in 2014. Most surprising is that a greater number, 45%, would have been helped in the 2016 cohort had attendance been included in the grade. Weighting grade averages by the number of students for 2013 and 2014 results in a grade average of 78.1 with the attendance component and 79.5 without. On average the attendance component lowers the grade by more than one point. No formal test is required to reject the idea that, for the students tested, making attendance mandatory improves their grades.

Is attendance higher when it is required? Seemingly, the requirement didn’t boost attendance since the average was actually slightly higher when it wasn’t required. However, we conducted an analysis of variance test to see if the difference was significant. It was not.

Finally, we sought to see if attendance positively affected grades. To test the effect of attendance and its significance we regressed grades (calculated without the attendance component) on attendance as a percentage. In each case the impact was positive, as expected, and except for 2013, highly significant. Results are reported in Table 2.

Summary and Discussion

Despite our initial intuition we were not able to show that a mandatory attendance policy (enforced by calculating a percentage of the grade from attendance) increased the number of lectures the students came to or that it improved grades. One might object that the groups were different in that the 2016 cohort had videos
available to them and the others did not. However, their availability would seem to make attendance less necessary when, in fact, it was higher in 2016. This result contrasts with the findings of Devadoss and Foltz (1996) who found that class policies improved attendance. Their analysis apparently including data from courses that used attendance as part of the grade and from others that allowed only a certain number of absences before a student was removed from the class. This finding is also different from Marburger (2010) and from Snyder and Frank (2016) who found a positive correlation with grades, though not with students’ perception of what they had learned.

We were able to show that attendance itself had a consistent positive impact on grades from year to year. This finding was in line with previous research. (Devadoss and Foltz, 1996; Marburger, 2010; Snyder and Frank, 2016)

The sample was too small to make universal conclusions, but we have provided evidence, some perhaps counterintuitive, on the effect that mandatory attendance policy has on attendance and grades and on the effect attendance itself has on student performance.

Our initial question dealt with the rationality of student grade behavior. On that question the results were mixed. Most students seemed not to consider grade penalties and rewards for attendance. Attendance, in general, did result in higher grades though. Some students may realize that they need to attend lectures to master the material, so they do. Others may realize that they can do just as well with the book and online lectures and tend not to attend. Both groups would make up the “rational” set. Others may be coasting through school giving little thought to their performance or grasp of the material – the “non-rational” set. There is some evidence that there may indeed be a bimodal distribution – as seems to be the case in Hyde and Flournoy (1986), and as is reported by Snyder et al. (2014) who found that class policies had a different impact on high-achieving students than those with lower grade point averages. Further investigation would be useful to determine whether such groupings exist and if an objective measurement could be developed to separate them.

**Literature Cited**


