

Attendance in Higher Education: does it matter?

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Keywords: *attendance, student characteristics, academic achievement*

Introduction

Does attendance affect the academic achievement of students or is their academic achievement already predisposed by student characteristics such as entry qualifications, gender or age? This question is often debated in discussion about whether or not attendance should be compulsory for students studying in higher education.

This paper provides the findings of an empirical investigation into the impact of attendance and student characteristics on academic achievement in higher education. The findings are based on a study of 179 students that completed an undergraduate taught module in Airport Business Management between 2003/4 and 2006/7. The study follows on from a previous study (Halpern, 2007), which investigated the impact of attendance and student characteristics on the academic achievement of 127 students that completed the same module between 2003/4 and 2005/6.

Background

Halpern (2007) investigated the relationship between attendance and academic achievement using correlation analysis and found that a significant moderately positive relationship exists ($r=0.50$, $p<0.001$). This supported the findings of previous studies (e.g. Paisey & Paisey, 2004; Gatherer & Manning, 1998; Romer, 1993). Halpern (2007) then investigated whether the effect of attendance on academic achievement is causal using regression analysis and found that attendance has a significant positive effect ($r=0.40$, $p<0.001$). This supported the findings of Woodfield et al. (2006) who found that attendance is a significant determinant of academic achievement (measured by degree outcome).

The study by Woodfield et al. (2006) found that entry qualifications (measured according to A-level points) are also a significant determinant of academic achievement which suggests that students that attend may already be predisposed to academic achievement.

In light of the findings of Woodfield et al. (2006), Halpern (2007) controlled for the effect of entry qualifications and other student characteristics including age, gender, mode of study, employment status and relevance, nationality, language, cultural background, commuting time, living arrangements and family commitments. The rationale and theoretical basis for each characteristic is provided in Halpern (2007). For instance, previous studies suggest that:

- females perform better than males (Alfan & Othman, 2005; Woodfield et al., 2005; Naylor & Smith, 2004; Smith, 2004; Lee, 2003; McNabb et al., 2002; Hofman & Van Den Berg, 2000), especially when coursework is the mode of assessment (Lumsden & Scott, 1987);
- mature students perform better than younger students (Jansen & Bruinsma, 2005; Wojciechowski & Palmer, 2005; Shanahan, 2004; Richardson & Woodley, 2003; Cantwell et al., 2001; Richardson, 1995);
- students that work during term-time perform less well than those that don't (Hofman & Van Den Berg, 2000) but that students that have relevant work experience perform better than those that don't (Gracia & Jenkins, 2003);
- students that study part-time on a course dominated by full-time students perform less well than their full-time colleagues (Keast, 1998); and,
- students that study a course taught in their first language perform better than those that don't (Wojciechowski & Palmer, 2005; Zeegers, 2004; Rumberger & Larsen, 1998; Thomas & McMahon, 1998).

Halpern (2007) found that the effect of attendance on academic achievement was reduced when controlling for student characteristics (from $r=0.40$ to $r=0.33$, $p<0.001$) and that work during term-time, relevant work, A-level entry qualifications, age, and cultural background are also significant determinants of academic achievement.

Findings

Table 1 provides a summary of the student characteristics used in this study and the sample characteristics (i.e. the proportion of students in the sample that fall into each category).

Table 1. Student and sample characteristics (n=179)

Characteristic	% students
Full-time mode of study	88
Female	30
Mature student (over 21 years of age on entry)	50
Married	16
Have at least one child	10
Living with parents	38

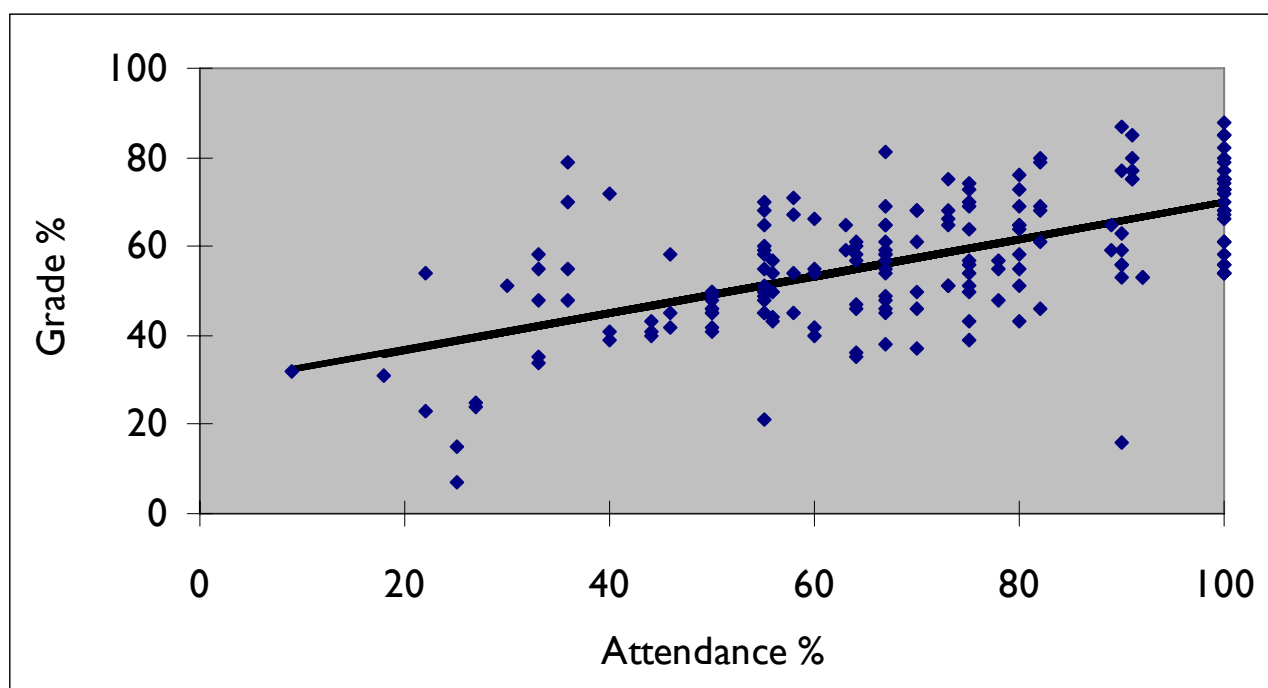
Work during term-time	58
Work in an industry that is relevant to the course	16
Long commute to University (over 45 minutes one-way)	60
A-level (or international equivalent) entry qualifications	65
Speak English as a 1 st language	68
British nationality	63
British cultural background	38

Table I provides a profile of all of the students that completed the module in Airport Business Management between 2003/4 and 2006/7.

Points of interest are the number of students in the sample that have a commuting time of over 45 minutes (60%), work during term-time (58%), live with their parents (38%), are married (16%) and have at least one child (10%). The majority of students in the sample are British (63%) however; there are a large number of overseas students (37%) and students that do not speak English as a first language (32%). In addition, whilst 63% of the students are British, only 38% have a British cultural background.

The second year module in Airport Business Management was delivered over 12 weeks during the autumn semester of each year and students were required to attend a 3-hour lecture/tutorial session each week. The average attendance for the sample was 69%. Students were assessed by a single piece of coursework. The average grade for the sample was 57%. Figure I shows the distribution of student attendance versus grade (each student is represented by a dot in figure I). The black line represents the line of best fit through the distribution of students.

Figure I. Attendance versus grade (n=179)



Correlation analysis on the data in figure 1 produces a correlation coefficient of 0.60 ($p < 0.001$), which demonstrates a significant moderately positive relationship between attendance and grade. Regression analysis was then used to investigate the causal effect of attendance on grade and the output is presented in table 2.

Table 2. Regression for attendance (n=179)

Variable	Regression values	
	Coefficient	p-value
Intercept	28.47	0.000
Attendance	0.41	0.000
<i>R Square = 0.36</i>		

The output in table 2 means that students with 0% attendance are predicted to achieve a grade of 29% (this is represented by the intercept coefficient). Each increase in attendance is expected to result in a 0.41 increase in grade. For instance, the average attendance of 69% is expected to result in a grade of 51% using the formula: predicted grade = intercept + (actual attendance $\times$ attendance coefficient). R Square is 0.36 and this represents the extent to which the independent variable(s) explain the dependent variable. In the case of this study, 36% of the variation in grade can be attributed to attendance.

The literature suggests that academic achievement can also be explained by student characteristics so the thirteen student characteristics listed in table 1 were included in the regression analysis. This time, a Stepwise regression analysis was used. Stepwise regression analysis considers all of the variables and produces the best possible model, normally excluding any non-significant variables in the output of the analysis. The output for the Stepwise regression analysis can be seen in table 3.

Table 3. Regression controlling for student characteristics (n=179)

Variable	Regression values	
	Coefficient	p-value
Intercept	27.48	0.000
Relevant work experience	8.97	0.000
A-level entry qualifications	8.40	0.000
British cultural background	8.09	0.000
Maturity (over 21 years of age)	7.13	0.000
Work during term-time	-6.69	0.000
Attendance	0.29	0.000
<i>R Square = 0.61</i>		

Table 3 shows that the effect of attendance on grade is still significant ($p < 0.001$) but is reduced when controlling for student characteristics (from 0.41 in table 2 to 0.29 in table 3). There are five student characteristics that have a significant effect on grade ($p < 0.001$) and the individual effect of each characteristic is much stronger than the effect of attendance. These include relevant work experience ($r = 8.97$), A-level entry qualifications ($r = 8.40$), British cultural background ($r = 8.09$), maturity ($r = 7.13$) and work during term-time ($r = -6.69$). R Square is 0.61, which means that 61% of the variation in grade can be attributed to attendance and the five student characteristics listed in table 3.

Conclusion

The findings of this study indicate that attendance has a significant moderately positive relationship with academic achievement. They also indicate that attendance has a significant positive effect on academic achievement but that the effect of attendance is reduced when student characteristics are controlled for.

Five student characteristics were found to have a significant effect on academic achievement with positive effects from relevant work experience, A-level entry qualifications, a British cultural background, and a certain level of maturity. As with Halpern (2007), this study found that the positive effect of relevant work experience was reduced to some extent by the negative effect of working during term-time.

This study suggest that whilst students should be made aware of the significant positive effect that attendance can have on academic achievement, it is probably not worthwhile for institutions to develop and enforce strict policies on attendance. Instead, the findings of this study show that the most 'at risk' students in terms of their propensity to achieve are likely to be young students (aged 21 years or less on entry), students from a non-British cultural background, students without A-level entry qualifications, and those who work during term-time in an industry not relevant to their studies. This knowledge can be used to develop admissions policies or pedagogic practices that deal more appropriately with 'at risk' students.

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Biographical note

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