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2011

## The Correlation between Attendance and Achievement

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### Recommended Citation

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# The Correlation between Attendance and Achievement

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## Abstract

In a global context it is generally accepted that the retention and associated completion rates for first year students is an area for concern in third level institutions. One area of particular interest is the low levels of completion on some degree programmes. Earlier studies of a similar nature have indicated that those students who attend at high levels not only pass examinations but also attain higher grades. Whilst attendance itself is not the cause of learning, even the most basic exposure to new material has a positive effect on learning.

The purpose of this study is to ascertain the correlation between class attendance and academic success. The cohort which is the focus of the study is a group of first year undergraduate students participating in a three year BA Hospitality Management degree. The findings suggest a positive correlation between attendance and academic achievement at first year level. The data also reveals a higher attendance rate for those subjects with an element of compulsory attendance. Attendance was found to decline over time while prior high academic achievement was not a strong predictor of success at the first year level of higher education.

**Keywords:** pilot study, progression, compulsory attendance, mature students

## Introduction

The aim of this project was to determine the correlation between class attendance and academic achievement at the end of the academic year 2010/2011, for a group of first year students. Through data collected during the year, the relationship between attendance and achievement was determined. The data was collected over two 12 week teaching periods for both semesters during the academic year. On average the modules are weighted 40% assessment and 60% written examination. Additionally, certain modules have a mark allocated for attendance. According to Colby attendance is the main driver of academic success (Colby, 2004) therefore, as the data were being analysed, they were also used to inform students about their attendance with a view to improving future attendance.

Previous research has indicated a positive correlation between attendance and academic achievement. In a five year study Burd and Hodgson (2004) concluded that their results showed a significant correlation between attendance and attainment at third level. A study conducted by Newman-Ford, Lloyd and Thomas (2008) concluded that prior educational attainment and attendance were significant predictors of attainment. Similarly, Wigley (2009) found that there was a clear relationship between attendance and achievement in a study conducted at a college in the United Kingdom.

A study comparable to the current project had already been piloted at the Dublin Institute of Technology by the institute's retention officer, Mark Russell. For the duration of this study, which was conducted on the same degree programme as the present study, the programme tutor collected the data and the retention officer contacted and interviewed those students whose attendance had fallen to an unacceptable level. According to Russell, for many of the students interviewed there was an immediate improvement in attendance (Russell, 2010). The findings of the pilot study suggested an increase in progression rates from 21% for the previous academic year, to almost 80% for the academic year 2009/2010.

## Outline of the Project

The current study was designed to be conducted entirely by the researcher, who is also the programme tutor to the class. The rationale underpinning this approach was that, if the process proved successful, it could be replicated by other tutors without support. The effort of coordinating the data collection process, entering and analysing the data, and contacting students proved to be a time-consuming and tedious task for the tutor working without assistance.

### *Details of the Cohort*

The group of students who were the subject of the study was a cohort of first year students taking a BA Hospitality Management degree at the School of Hospitality Management and Tourism, Dublin Institute of Technology. The modules are taught via lectures, tutorials and/or practical sessions. The academic year is split into two semesterised halves, one running from September to December and the other from January to May. Examinations are held at the end of each semester, with the opportunity to repeat the following September. On successful completion of a module the student is awarded five European Credit Transfer System points (ECTS). For logistical reasons, seven modules are completed during the first semester and six during the second semester of the academic year.

## Methodology

### *Design*

This is essentially a correlation design, which measures the strength of the relationship between student class attendance and examination achievement. Attendance at tutorials was not included in the study as the significant additional workload involved in data collection and analysis was deemed to be too burdensome. A Pearson product-moment correlation was applied to the data which reflects the degree to which two variables are related.

### *Participants*

The sample consisted of 40 first year students who were participating on a BA Hospitality Management degree programme at the School of Hospitality Management and Tourism, Dublin Institute of Technology. Due to some students withdrawing from the programme at the end of the first semester, the sample was reduced to 36 students for the second semester.

### *Data Collection Procedure*

With the agreed participation of all staff lecturing to the group, attendance data were collected by each lecturer during class and submitted to the researcher immediately following the class. The data were then entered into a pre-designed electronic spreadsheet by the researcher. On average, each student was monitored over 13 modules resulting in 6,240 individual data entries. The results and attendance for those students who left the programme during the year were not entered as the aim of this study was to investigate the correlation between examination results and achievement.

### *Data Analysis Procedure*

The examination and attendance data were analysed following the examinations held in January and May. The results for supplemental examinations were also entered and analysed in September, as the aim of the study was to examine the performance over one entire academic year, which included all three examination sessions.

### *Contacting Students*

With the expectation of encouraging attendance, students whose attendance had fallen below an acceptable level were contacted during the semester. This level was determined by the researcher as those students who had missed two consecutive teaching sessions. Students were contacted in person, using e-mail initially and if necessary mobile telephone. This process served the purpose of

encouraging most students to return to class immediately, otherwise it offered an opportunity to discuss any relevant issues with students on an individual basis.

#### *Data Collection Shortcomings*

Involvement in all aspects of data collection and analysis procedures by one individual proved to be a time-consuming task. Throughout the study it was necessary to coordinate collection of attendance sheets from 26 lecturing staff in total. Not all participating lecturers remembered to return the completed attendance sheets as requested, resulting in considerable effort being expended on tracing missing records.

Additionally, when a lecture was cancelled, adjustments had to be made to the analysis tool to ensure accurate computation of results. Furthermore, the plan to contact students within the suggested time-frame was not always adhered to; this resulted in some students missing up to four classes before any corrective action was taken.

### **Main Findings and Discussion**

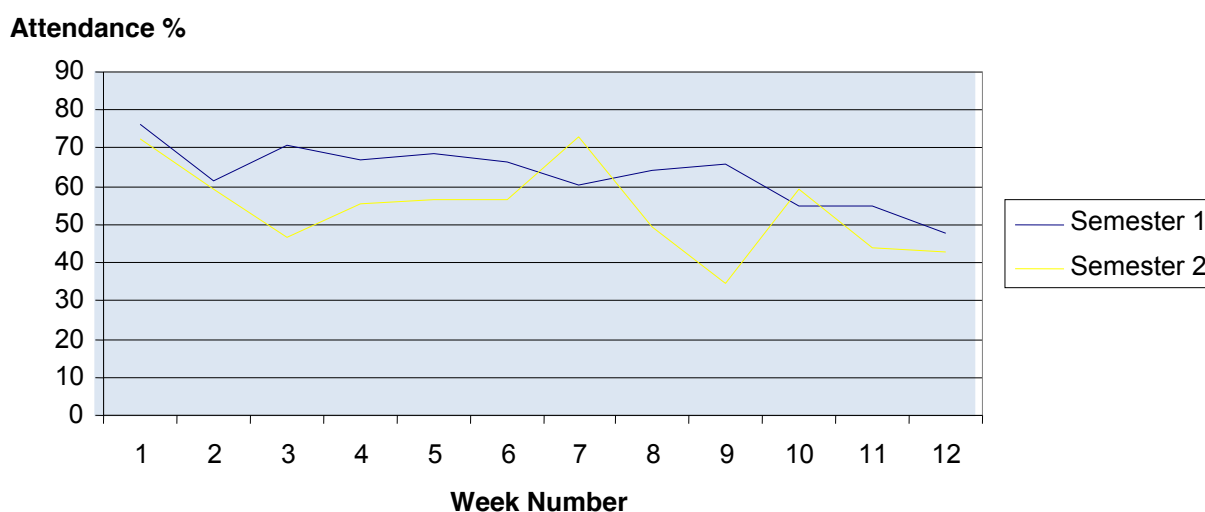
During Semester 1 there was a strong effort put in by the majority of students to attend class regularly. The overall attendance percentage during this period was strongly influenced by the small minority of students who were particularly poor attendees, these (4) students did not subsequently participate in Semester 2. One notable aspect of the findings was that the classes which had the highest attendance were also those which had marks allocated for attendance. A number of students who were not attending at the required level were contacted during the semester and in most cases their attendance subsequently improved. The attendance levels attained during Semester 1 were not duplicated in Semester 2 as attendance levels decreased. This may have been caused by the lack of formal contact with the programme tutor, who was teaching the group during the first semester but not during the second semester. The only contact during this period was when the tutor made arrangements to meet the group, on these occasions not all students attended. Also, the three modules which had marks allocated for attendance were taught during Semester 1. The average overall attendance for all students was 61%.

	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>
<b>Total Attendance %</b>	36	14	100	61
<b>Semester 1 Attendance %</b>	40	23	100	65
<b>Semester 2Attendance %</b>	36	14	89	56

**Table 2.1: Attendance**

#### *Attendance Patterns over Time*

Results are also presented in Table 2.2 for the average attendance for the duration of each semester. At the beginning of each semester, between 70% and 80% of students were attending, but by the end of each semester that figure had fallen to a little over half. The pattern of attendance shows a decline in line with other programmes at the school. This is from anecdotal evidence regarding current programmes. It has been suggested by staff participating on the programme that, generally, there is a fall-off in attendance as soon as projects have been submitted; this is normally around the sixth week of the semester.



**Table 2.2: Attendance over time**

Previous studies have indicated that attendance declines as the semester progresses (see Dolnicar et al., 2009: 204 for more details.). The current study supports this assertion as attendance declined as both semesters progressed.

*Attendance and Examination Results*

A Pearson correlation test was performed on the aggregated attendance and examination results. The overall results indicated a significant positive correlation of linear  $R^2 = .541$ . Similar tests were performed on the results for each module and all returned a positive correlation between attendance and academic achievement. The association was particularly strong for those modules which had marks allocated for attendance. The results emphasise that, for students to pass examinations, regular attendance at lectures is essential.

Of the total number of students who completed the year (36) there is a division in attainment between those students who maintained an attendance percentage of greater than 60% and those that did not. Those students who maintained an average attendance of above 60% achieved an average mark of 59%. Those students who maintained an average attendance of 60% or below, achieved an average mark of 46%. Only 11 students passed all modules at the end of the academic year (31%), the remainder were required to repeat at least one subject in September. The average attendance of these students who passed all modules was 71%, while the average attendance of those who were required to repeat more than one module in September was 61%.

*Supplementary Findings*

Anecdotal evidence suggests that prior academic achievement should have a bearing on academic performance at third level. Based on individual student’s Central Applications Office (CAO) points, the correlation with final marks was investigated. The results indicated a positive correlation of linear  $R^2 = .038$ . Although not a strong correlation, this suggests that caution should be exercised when determining at what CAO points level students should be admitted to the programme. The data also indicated that 75% of students who selected the programme as a fourth preference or less had left the programme before the end of Year 1.

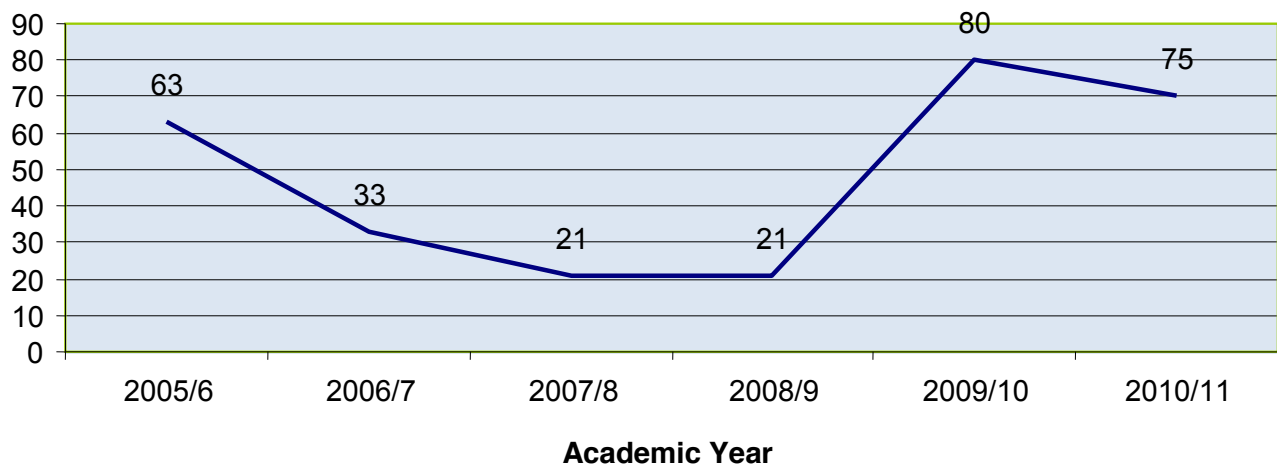
*Progression Rates*

This degree programme was selected for the attendance monitoring study due to a decline in student progression rates from first year. The decline in progression rates was noticed following

examination of the annual pass rates. Also, since taking responsibility for the programme the co-ordinator was motivated to initiate the study by his personal experiences as a participant on a similar programme many years earlier.

The criterion for assessing the success of the programme from a retention perspective was the improvement in student progression rates. See Table 2.3.

### % Students Progressing



**Table 2.3: Historical progression rates for first year**

The average progression rates for the four academic years prior to the pilot study of 2009/10 was 35%. The average progression rate for the academic year during which the study was maintained was 75%. The results suggest an increase in the progression rate of 210%. It is assumed that this dramatic increase is in some way due to the attendance monitoring study and the encouragement given to those students who had started to exhibit poor attendance habits during the year.

#### *Compulsory Attendance*

Research from the 1990s suggests that students were more likely to attend if attendance was compulsory. The results of the current study suggest that those modules which had some element of attendance allocated marks also had the highest attendance throughout the module. This is supported by Devanoss and Foltz (1996) who suggested that students were more likely to attend if attendance was compulsory. Three of the Year 1 modules taken by students had some element of compulsory attendance integrated into the subject. The average attendance across these modules was 76%, this is 24% above the class average of 61%. This indicates that, perhaps, the Institute should consider introducing an element of compulsory attendance across modules in a drive to increase attendance.

#### *Non-Progressing Students*

Ten students failed to progress to Year 2 of the programme. The average attendance of these students was 51.5%, which equates to 15% below the average attendance of the entire class. This finding indicates that there is a relatively slim margin between the attendance percentage of those who progress and those who do not. Therefore, it is suggested that there is limited leeway for students who do not maintain at least the average attendance.

#### *Mature Students*

Five mature students participated in the first year of the programme. A mature student is defined as one who is 21 years of age or above. The average attendance percentage for mature students was

79%, and they passed all modules at the first attempt. Their average mark was 67%, compared to 56% for the cohort as a whole. This supports the contention that those students who are not in this category should be encouraged to behave in ways which are conducive to achieving success during their participation in third level education.

### **Project Evaluation**

This project was evaluated through the measurement of the increase in the progression rate to Year 2 of the programme. The progression rate for the current cohort of students is 75%. The success of the study can be measured by the dramatic increase in the progression rate achieved. In addition to the main aim of the study, the project offered a noteworthy opportunity to further mine the data for additional relevant information. These findings have already been discussed in the previous sections.

For the duration of the study the researcher presented the interim findings at a number of presentations and workshops (see p. 57). Also, the study will be presented at the International Conference for Education Research and Innovation (ICERI).

### **Conclusions**

This study was conducted with a particular focus on first year students. The findings support anecdotal evidence that there is a significant positive correlation between class attendance at lecture sessions and academic achievement. The study also reveals that there is, amongst this cohort, a less significant positive correlation between prior academic achievement and success at third level. Attendance declines as the semester progresses.

Given the lower attainment associated with the lack of attendance it may be necessary to take steps in assisting these students to better engage in the learning process. On average, the data suggests that individual students have different results, which are generally dependent on their attendance patterns. Also, the findings suggest that to pass modules at the first attempt, students should attend a minimum of 60% of lectures during each semester. The findings also suggest a more personal approach when addressing the issue of poor attendance. When contacted, students cited a range of reasons as to why they had missed lectures. In some cases, attendance improved for a while but then decreased again. A hard-core of non-attending students was identified and, despite efforts on behalf of the tutor, little was done to improve their attendance. If a student is missing from two lectures, particularly at the beginning of the semester, action should be taken immediately to encourage a return to class. A case exists for the introduction of some element of mandatory attendance. Finally, the findings reveal a significant difference between the attendance patterns of students who have progressed directly from second level education and those mature students who have entered the programme at a later stage of their careers.

### **Recommendations**

The findings of this study will be useful for shaping institutional and national policy and practice on the topic of student attendance monitoring. Therefore the following recommendations are made:

1. Present a summary of the findings to each group of students beginning first year. The presentation should act as a motivator and encourage students to maintain a high level of attendance throughout the academic year.
2. Establish an attendance monitoring system with the aim of identifying those students who are indicating patterns of poor attendance from the beginning of the semester. Take action to address the issue at the earliest possible opportunity.

3. Introduce an element of compulsory attendance across all modules in a drive to increase attendance.
4. Appoint a Student Liaison Officer to monitor attendance data and take relevant action across all programmes at the School of Hospitality Management and Tourism.

### Proposed Future Research

This study has focused on attendance as being the most important criterion for academic success. However, attendance is but one manifestation of deeper issues relating to student engagement in third level education. The proposed future work will be to conduct a longitudinal study focusing on student engagement across various dimensions relating to participation in third level education.

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