Understanding student attendance in Business Schools: an exploratory study

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Abstract

University teachers may be baffled that students often choose not to attend classes, not least because they believe that students benefit from attending. We surveyed first year students with the aim of gathering information on multiple aspects of their student experience. This paper focuses specifically on the factors that affect class attendance, as measured by self-reported estimates. We find that a wide range of factors affect attendance: some of these are more immediate, such as the quality of individual teaching sessions or staff; others are less proximate and reflect underlying attitudinal or socio-economic effects. We find that attitudes and aspirations vary across students depending on whether they are good, average or poor attenders and that lower confidence levels may adversely affect interest and motivation and thence attendance. The study highlights several interesting findings that require further investigation.

Keywords: Student attendance; Survey; Intrinsic motivation; Virtual learning environments

JEL Classification: A12; A13; A14; A22

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1. Introduction

Student attendance is a consistent source of frustration and puzzlement for teachers in Higher Education Institutions. Academics may be personally offended and baffled that students often choose not to attend, not least because academics believe that students benefit from attending. However, years of experience and a welter of evidence demonstrates that understanding and hence improving attendance is a complex problem. Simultaneously, institutional changes in education affect attendance in positive and negative directions. For example, an increase in student fees in UK universities may create the incentive for students to attend because each class foregone increases the average cost per class. In contrast, advances in learning technology, and the increased willingness of universities to utilise this technology – perhaps driven by a perceived need to satisfy their paying customers – may create structures in which students are more likely to elect not to attend.

This paper investigates the puzzle of student attendance via application of a largely quantitative survey to first year students in a Business School located in the UK. It explores attendance and the various factors affecting it, some of which are immediate, others which are more structural and/or reflect student biographical attributes. This paper deploys a range of statistical techniques to explore patterns in the data and finds several associations between attendance and both immediate and background factors. Our findings suggest that attitudes and aspirations vary across students depending on whether they are good, average or poor attenders and that lower confidence levels may adversely affect interest and motivation and thence attendance. A caveat of these findings is that our sample is potentially subject to selection bias, as it will favour harder-working, higher-performing students who attended the classes where the questionnaire was distributed and collected; further exploration is necessary.

The remainder of this paper proceeds as follows: the next section presents a brief discussion of relevant literature. Section 3 provides a discussion of the statistical exploratory methods deployed in the study, as well as details of the survey utilised. Section 4 contains the descriptive statistics and results of the analysis. Conclusions and further directions for this research are provided in Section 5.

2. Literature review

Extant literature stresses the heterogeneity of students with respect to their motivations to attend lectures. Early research in this area by Laurillard (1979) argues that study strategies (and thereby attendance) are contingent on context. This implies that the structures created by the university and the individual tutor/lecturer will affect student behaviour. Biggs (1978) also suggests that learning strategies may vary in individual versus group situations.

Students attend lectures for a variety of reasons. Bligh (1972) claims that the function or purpose and context in which the lectures are used are vital. He considers the following as the purposes of lecture attendance: the acquisition of information, the promotion of thought, and changes in attitudes. Gysbers *et al*. (2011) argue that students can be viewed as strategic consumers who will optimise their time use in order to gain an advantage from their educational experience and weigh the educational, efficiency and social benefits of attendance against time and opportunity costs. Gysbers *et al*. also reveals that students who attended lectures stated that they enjoy the personal style of a lecturer, social interaction and the opportunity for peer assisted learning. However, Billings-Galiardi *et al*. (2007) found that decisions to attend lectures were influenced by previous experiences with lecturers, predictions of what would occur during the session itself, personal learning preferences and time-specific learning needs, with the overall goal being the maximisation of learning.

Some researchers have argued that cognitive and learning styles (rather than personality traits) are the best predictors of the learning process (Kolb, 1984), while Furnham and Medhurst (1995) claim that learning styles dictate, in part, seminar behaviour, as well as final grade. A typology is offered by Honey and Mumford (1982) who argue there are four different learning styles: activists, reflectors, theorists and pragmatists.[1]

Other studies focus on student heterogeneity and emphasise the variety of reasons why students are motivated to attend lectures, beyond just differences in learning styles. Dolnicar (2004) categorises students into six groups, each with differing motivations to attend lectures. The first group are enthusiastic and are described as "idealists", feel enthused by lectures, and feel that lectures make knowledge meaningful. Dolnicar (2005) shows that this group of students also tend to enjoy lectures. "Idealists" were more likely to be older students. More than half of them work and can mostly be found in the Arts Faculty (Dolnicar, 2004; Dolnicar, 2005). Other scholars might refer to this group as intrinsically motivated (see Entwhistle, 1981; Elton, 1988; Hennessy *et al*., 2010; Howorth, 2001; Koceic *et al*., 2010).

The second group of students are described as "pragmatics". Pragmatic students want to know what they need to learn, they pay particular attention to information about assessment tasks and do not miss any relevant information (Dolnicar, 2004). This concept of a 'pragmatic' student is further reinforced by Ditcher and Hunter (2004) who argue that these students adopt an 'instrumental' approach to education, meaning that they are likely to engage in study "not to enjoy that activity for its own sake but to achieve … some goal external to it" (Rowntree, 1981, p.133). The "Pragmatics" tend to be over-represented in Commerce and Informatics as well as being the youngest on campus, reporting the lowest attendance rates and (yet) receiving the highest marks (Dolnicar, 2004). In general, they also express a low opinion of lecturers and lecture quality.[2] In Elton's (1988) terminology, these students are extrinsically motivated. Early evidence of this type of motivation was reported by Snyder (1971), who found that many engineering students at Massachusetts Institute of Technology in the 1960s had an instrumental approach to studying.

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[1] First, there are activists. Activists involve themselves fully and without bias in new experiences. They are happy to be dominated by immediate experiences. Second, there are reflectors. Reflectors supposedly like to stand back to consider experiences with a tendency to observe them from different perspectives. They collect data, both first hand and from others, and analyse the information before coming to any conclusions. Their apparent strengths are that they are: careful; thorough and methodical; thoughtful; good at listening to others and assimilating information; rarely jump to conclusions. On the other hand, they tend to hold back from direct participation; they have a tendency to be too cautious and are therefore slow to make up their minds and reach a decision. Furthermore, they do not take enough risks, are not assertive; are not particularly forthcoming and have no 'small talk'. Third, some students are theorists. Theorists adapt and integrate observations into complex but logically sound theories. They are logical 'vertical' thinkers; rational and objective; good at asking probing questions; disciplined in approach but their weakness is in lateral thinking. They do not accept uncertainty, disorder and ambiguity, and are intolerant of anything subjective or intuitive. Fourth, some students are pragmatists. Pragmatists are keen on trying out new ideas, theories and techniques to see if they work in practice. They like making practical and problem solving decisions responding to problems and opportunities 'as a challenge'. Their strengths are that they test things out in practice; practical, down to earth, realistic, business like, gets straight to the point, and technique oriented; however, they have a tendency to reject anything without an obvious application, are not particularly interested in theory or basic principles, have a tendency to grasp on the first practical solution to a problem, are impatient with waffle. Overall they are task-oriented not people-oriented.

[2] Marketing students are underrepresented among "idealists" (Dolnicar, 2004). Conversely, Cretcheley (2005) found that the views and behaviour of lecture attendees for mathematics courses reported little evidence of the kind of "pragmatism" reported by Dolnicar (2004) who found students (predominantly in Commerce and IT) attended lectures with low levels of enjoyment in order to gain essential information. Instead, Cretchley (2005) found that levels of pragmatism vary with discipline, content and study-goals, and are strongly affected by the characteristics of the lecturer in terms of effectiveness, commitment, and approachability.

A pragmatic approach to learning can be seen as an unfavourable personality trait when it comes to lecture attendance. Ditcher and Hunter (2004) argue that most students come to university with the motivations of increasing their career opportunities as well as studying subjects which interest them. It is when the first of these two motivations comes to dominate that it may become a particular concern for lecturers. The latter motivation, interest, directly and positively affects a students' attitudes to study, so when students progress towards a motivation mainly associated with career opportunities it can create a problem for the university as a place of learning, because learning is frequently sacrificed by the instrumental student in favour of 'getting through' a course and/or a degree. There is undoubtedly an argument that students who are 'pragmatic' may inhibit the learning pattern of idealistic students. As pragmatic students do not necessarily value or enjoy the subject itself but are more interested in getting through the course, university attempts to accommodate the needs of pragmatic students may be at the expense of or counter to the interests of idealistic students. Furthermore, students who are instrumentally motivated are likely to adopt a surface approach to studying, which does not lead to high quality learning (Biggs, 1999). Not only do pragmatic students potentially inhibit the learning of other students, they themselves do not necessarily benefit from this approach to learning.

A third group of students (referred to as the "averagely motivated students") reported similar motivations to the "pragmatics" (Dolnicar, 2004). However, they feel that attending lectures is easier than learning alone and that the lectures make knowledge meaningful. This group differs from the pure pragmatic perspective in that content of the subject was important. Dolnicar's (2004) fourth group is comprised of 'fundamentals oriented students" who share the main pragmatic lecture attendance motives, but additionally report that attendance would mean that they would be able to learn the fundamental principles of the topic. A fifth group of students were labelled "minimalists" (Dolnicar, 2004; Dolnicar, 2005), and the only reason, they reported, to attend lectures was not to miss significant information (Dolnicar, 2004; Dolnicar, 2005). Finally, the "everything but pleasure" students reported that most of the listed reasons apply, except for enjoying lectures and feeling enthused by them (Dolnicar, 2004; Dolnicar, 2005).

The brief review of relevant literature above suggests several things about student attendance. First, given that students are heterogeneous, we ought to expect to find neither universal patterns in student attendance nor universal predictors of attendance. It may be that analyses of student responses from specific disciplines would reveal less heterogeneity and the results could be potentially more predictable; however, if we survey a cohort from mixed degree programmes then student heterogeneity should be the defining characteristic. Second, it is clear that a wide range of factors affect attendance: drawing on the literature above, these factors may reflect student learning types or styles, of which there are many. Further, these learning types and styles are themselves affected by other factors, such as the availability of facilities, family background, other social determinants, and specific attributes of the course of study, including the lecturer's style, in which they are engaged. Our survey instrument reflects all of these themes.

3. Methods

Data were collected from a Business School located in the UK using a hardcopy questionnaire. This questionnaire was distributed in the four lectures that spanned all level 1 students within the faculty in the spring term; this allowed us to collect data from students undertaking study in all disciplines taught in the Business School (Accounting, Business, Economics, Finance, HRM, Strategy, Operations, Marketing and Enterprise). The week chosen for questionnaire distribution immediately followed the deadline for submission of

module choices for level 2. Given that module choice was another of the issues being investigated by the questionnaire, it was essential to ask students about their module choice at that time, in order to maximise accuracy of recall. Another option would have been to ask smaller groups of students, or to ask students at the precise point of making their module choices. The latter was logistically impossible and carried risks of inadvertently steering student choices and contaminating our data. Although we could have attempted probability sampling, this would have been logistically more complex; moreover, we had no basis on which to collect a more purposive sample.

The questionnaire was distributed and collected by the researchers in the lecture theatres and all responses were confidential and anonymous. We hoped that this would raise the response rate (as compared with allowing students to take away and return their questionnaires, or by using online survey tools).[3] Nevertheless, because the survey was conducted relatively late in the academic year, and because attendance tends to fall as the academic year progresses, our total number of responses was relatively low. Of a potential population of 986 level 1 faculty students, only 286 usable responses were gathered (response rate: 29%), and not all of these responses completed the questionnaire in its entirety.[4] This is a disappointing response rate; however, it illustrates that attendance is a concern. Further and as discussed below, we believe that the sample is potentially biased towards the relatively harder-working and higher-achieving students who were more likely to attend when the questionnaire was distributed, and thus the response rate is meaningful and connected to the subject of this investigation. Nevertheless, our ability to generalise from the survey is limited.

The questionnaire was geared towards mainly quantitative analysis, deploying mainly closed questions which were pre-coded.[5] The questionnaire was laid out into separate sections. The first concerns module choice and the factors which affect it. Some students had no choice and hence this question was not relevant to them. The factors listed in question 1 reflect earlier literature (such as Hennessy *et al*., 2010). In the majority of cases, our cohort of students had either one or two choices to make and the questionnaire had the flexibility to cope with this. From question 3 onwards, the survey addresses attitudes and aptitudes, which are self-reported by students. The survey also includes built-in cross checking – for instance, question 4 examines the students' perceived ability in a range of areas (such as verbal, organisational, problem solving, etc), while question 27 asks for actual test marks received. Overall, the survey questions collectively reflect our conjecture that module choice and attendance are affected by underlying values; for instance questions 6-9 address attendance patterns and motivations. For example, possible responses to question 9 with respect to why the respondent doesn't have full attendance, include clashes with social activities, being able to pass without full attendance, conflicts with work schedule, etc. The remaining questions in the survey seek to gather biographical information, which may be relevant in identifying underlying factors that affect both attendance and module choice. To ease exposition and brevity, this paper focuses on the data that appear to be directly related to attendance.[6]

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[3] As an extra incentive to complete the questionnaire, a prize of cinema vouchers was offered to a winner chosen randomly at a later date. This was permitted through the use of lottery tickets, where a number was attached to the top of the questionnaire and that same number was also retained by the student using a lottery ticket. A number was then chosen at random and the student who retained and could produce the appropriate lottery ticket was awarded the cinema vouchers.

[4] We believe that the vast majority, if not all students within the four classes completed the survey, and that the low response rate is a direct illustration of attendance rates at those four classes.

[5] Because of the heterogeneity in the sample, open questions were necessary. This paper only discusses the quantitative data and analysis.

[6] Further, because of the low response rate, and because of the heterogeneity of the group, no single elective module has enough respondents to assess whether results are clustered around specific modules.

4. Data analysis

The average age of the respondents in the final sample (after cleaning the data of clear-cut cases of measurement error and missing information) is 19.44 (with little variation around that), 78% self-reported as being White ethnic, 91% report themselves as not being an overseas student, 29% had taken a gap year before coming to university, 91% responded to Q15 that they are satisfied or very satisfied, and the sample group are on a variety of undergraduate programmes. This information, along with other descriptive statistics for the data set are provided in Table 1.The majority of the sample self-identify as female (62%). This is not typical of UK universities or Business Schools Our suspicion that the sample is potentially not representative of first year students in the UK is complemented by the fact that students reported a high level of ability in question 4 (mean across the ability indicators of 68.9%), which is also supported by their reporting of relatively high achievement scores in question 27 (mean of 71.3% across these three indicators). Interestingly, while the scores for ability and achievement seem related, correlations between the different ability indicators of Q4, the average of Q4 across all its components and achievement scores from q27 did not exceed 0.25.[7] Further, students report a level of attendance which is higher than we might expect for level 1 students at this specific stage in the academic year (approximately 90% report at least 60% attendance). We will return to the question of attendance below.

{Insert Table 1 here}

In terms of attitudinal responses, results from our descriptive analysis suggests that intellectual stimulation is important (see the high scores reported for q3_2, and q5_14, and the low score reported for q5_4), a finding which is also supported by responses to questions about module choice.[8] This supports the theory that students have intrinsic motivation for study. There is some evidence also that self-respect or recognition are important to the students in our sample (see, for example the high mean scores for q3_5, q3_6, and q5_9). Additionally, 'success', as measured by career success and/or financial reward are important: these affect module choice as some modules are viewed as more likely to improve the probability of these future successes. However, there is little evidence of other forms of instrumentalism in our sample, in the specific sense of preferring modules which are easy.

There is some evidence of social effects, either in terms of peer evaluation or pressure, or their motivation or work effort being affected by group dynamics. Social relationships were shown to be generally important (q3_11) or as motivators (q5_12) or behaviour changers (q5_15). Correlations (see Table 2) also suggest seminar group dynamics are important with the presence of more able students in a group positively affecting learning (see q5_6, q5_15, q5_19). However, there is limited impact of educational habit, as defined as whether the student's parents studied at university. The proportion of students who had a parent with university education was low (29% for father, and 26% for mother). Given the scope of the exploratory analysis in this study, future research could delve into whether there is an impact of these variables on a student's attendance levels.

{Insert Table 2 here}

[7] The result of this correlation analysis is that there is no clear evidence for an association between performance and *specific* perceived abilities.

[8] For example the mean score for choosing a module because it looked more interesting than alternatives was 4.16, and for 'I wanted to learn more about this subject' the mean score is 4.23.

More generally, there was evidence in our data of associations between a range of factors. For instance, the statistics presented in Table 2 suggest, for example, that student confidence may be important. There are correlations between student annoyance at difficulty (q5_4) and nervousness about exams (q5_5), and expressions of being interested in the programme (q5_17, q5_18). These may have implications for explaining attendance because some of these confidence measures are also associated with responses on work effort (q5_10, q5_11) or giving up (q5_8). This raises the question of whether 'lazy' students really are so: perhaps they are simply struggling or feel as if they are.[9]

Attendance

The main focus of this paper is on attendance, and on exploring factors that potentially affect it. In doing this we are, to some extent, allowing the data to reveal statistical association and, of course, identifying whether there is support for extant theories on what might affect attendance. The literature reviewed above suggests that a range of factors affects students' learning strategies. These include their own personal learning styles, level of interest in the subjects, intrinsic and extrinsic motivations, and – because learning strategies may be affected by context – structural and context-specific determinants of all of the above. Beyond – or perhaps beneath – those factors may be underlying factors of character, background, circumstance, etc. which might affect attendance.

We also conjecture that attendance is affected by values, aspirations, ethics., availability and attractiveness of substitutes, past performance, and context-specific factors. Factors affecting or associated with attendance outcomes are therefore in q3, q5, q6, q8, q9, q10-19 and q27. The attendance outcome is measured via q7. This measure is self-reported and is inevitably subject to measurement error, which could result from flawed memory and/or social desirability bias. Given that we are using categories (quintiles) rather than a precise estimate, this measurement error will only affect cases lying on the boundary between classes. However, the use of classes *per se* could be considered problematic, as it reduces the information set available to us. On the other hand, subject to caveats about their accuracy, our bands do allow us to provisionally cluster students according to attendance, and this is done below.

As noted above, students in our sample are generally high attenders: roughly 90% of our sample report attending at least 60% of their classes. A first step is to assess whether there are general factors that affect attendance across our entire sample. We can do this via a variety of statistical tests. Given that we hypothesised that students may choose to use materials posted on a Virtual Learning Environment (VLE) (in this case, Blackboard) rather than attend, we asked students when they downloaded material from the VLE; this is also a proxy for engagement. Approximately one third of our sample downloaded material prior to the lecture. Slightly more download during the week after the lecture. Only 5% never download the material. Of greater interest is the relationship between attendance and downloading material from the VLE. Table 3 shows that there may be some relationship.

{Insert Table 3 about here}

Overall, the correlation between Q6 and Q7 is negative and non-negligible ($r = -0.31$) suggesting that to some extent students *substitute* use of the VLE for attendance. However, as the Table shows, this relationship is far from simple. Importantly, it does seem that those who

[9] A complement to confidence may be ambition. If we examine correlations between q5 and q3, which considered 'values', as shown in Table 3, then we see again some evidence of association between ambition and interest.

claim to attend more seem to download earlier. That suggests that for those students, the VLE acts as a *complement* to their attendance.[10]

The other questions relevant to attendance are those dealing with motivation and biographical details and those asking directly about reasons for non- or incomplete attendance. In general, students did *not* state that working last minute on assessments (q8_1) was a reason for reduced attendance. However, this may merely reflect the sample: those working last minute on assessments may simply not have been in class to be able to respond to this questionnaire. Students did not admit to missing classes because of their duration: the mean score for this is so low (mean = 0.03) that we would not attribute it solely to sample selection bias. However, missing classes because they are not stimulating (q8_3) scored much higher. Perhaps unsurprisingly this score was strongly correlated (r = 0.42) with the teacher being uninspiring (q8_14, mean = 0.51): once again this underlines the importance of human relations in learning. In line with q6, there was some evidence that the VLE can substitute for attendance (mean for q8_5 = 0.41). There is also reason to believe that timetabling does affect attendance (q8_15). However, there was little other evidence that elements of social life (q8_6, q8_7, q8_8) were important in deterring attendance. Similarly, constraints such as work pressure did not seem to be important, with the exception of feeling ill or tired (q8_13).

Given the possibility that our results may be suffering from sample selection issues, it is reasonable to suggest that the mean scores for q8 would have been higher than we report if the full cohort provided responses to the questionnaire. However, an alternative argument is that although none of the individual reasons is enough to explain non-attendance, a combination of reasons might be. An analysis of correlations within q8, the majority of which have coefficients less than 0.25 and are therefore omitted for brevity, suggests some evidence for clusters of factors which together might militate against attendance. For example, 'classes are not stimulating' (q8_3) correlates with 'material is available on Blackboard' (q8_5, r = 0.34) and 'the teacher is uninspiring' (q8_14, r = 0.40). Similarly, social factors such as 'my friends don't attend' (q8_6) correlates with other social factors, such as 'I take material and information from friends' (18_11, r = 0.40). So although these reasons for absence may not seem highly important on average, they might be important for some students.

That reasoning leads us to split the sample by attendance rate. We split the sample into three groups: high attenders (at least 80% attendance, *n* = 160), medium attenders (attendance rate 60-79%, *n* = 96) and low attenders (attendance rate less than 60%, *n* = 22). These results are shown in Table 5. Interestingly, some theories are not supported here: for example, there is no difference between students in these groups in terms of the interest which they express in their module choices (see, for example, means for q1_i_1 and q1_i_11). Similarly, 'poor' attenders claim to be more strongly motivated than 'good' attenders in terms of career (q3_1, q3_6). Indeed, only in terms of development, status and satisfaction did the 'good' outscore the 'poor' in terms of values (Q3).

{Insert Table 4 about here}

A similarly mixed picture emerges in terms of Q5, on aspirations and attitudes. Attendees classified as 'poor' score higher than 'good' ones in terms of expressing boredom and in terms of giving up (q5_17, q5_7, q5_8), and yet they claim to care more about parental feelings (q5_12) and claim to get nervous less than 'good' attenders do (q5_5). On the other hand, 'good' attenders more often express the importance to them of doing well and therefore the need to work hard: the mean scores for q5_10 are considerably greater for 'good'

[10] This is how curriculum designers might intend it: the VLE is a resource for information transfer and storage, perhaps interaction, and even assessment; but not as an alternative to attending.

attenders than for 'average' and 'poor' attenders. Also, the mean score for 'good' attenders on q5_16 is much greater than for 'poor' attenders, suggesting again that confidence may be an important factor in affecting performance. This impression is reinforced by comparing the means for q4. Scores for 'good' attenders are almost always higher than for 'poor' attenders, particularly on organisation (q4_3) and motivation (q4_7). Our 'poor' attenders may have poor self-image, as reflected in better reported performance for the 'good' attenders across the courses examined (mean of q27: 73.18 > 67.04).

Results are again mixed across q8 (reasons for reduced attendance). Comparing means across 'good' and 'poor' attenders shows a clear pattern: 'poor' attenders score higher than 'good' ones on almost all questions. Much higher scores on q8_4, 5, 6, 10, 11 and 15 suggest that a combination of convenience factors are cited by 'poor' attenders as factors lowering their attendance. The finding for q8_5 reinforces the above discussion about VLEs: for 'poor' attenders they appear to be a *substitute* for attendance. For 'good' attenders, the highest mean scores for Q8 refer to a lack of stimulation, perhaps an uninspiring teacher.

Correlation coefficients were estimated for the entire set of variables (not reported for brevity); however, there are very few correlation statistics of note. Again, some of the strongest are with q8_3 (classes are not stimulating). Even for these high attenders, if classes are not interesting enough (intrinsic motivation), *and* the teacher is uninspiring (q8_14) *and* materials are available on the VLE (q8_5) (*and* (perhaps therefore) classes can be passed without attending (q8_4)), *and* the time of the class is regarded as unfavourable, then students report being less likely to attend. For the medium attenders, the correlation between class stimulation and inspiring teacher is even stronger (r = 0.47). A conjunction of factors seems to be associated with reasons for reduced attendance, although this may be a fairly disparate group. There are many more strong correlations between parts of q8 for low attenders, but the sample size (n = 22) makes us treat these results with extreme caution. Nevertheless, the strong correlations do suggest that there may be things to explore within this group. Further, the lack of clear patterns in the 'average' and 'good' attenders leaves something more to be explained. The conjecture about a cluster of associated, reinforcing reasons for non-attendance seems plausible, and is supported by post-questionnaire anecdotal evidence.

Factor analysis

Further analysis of association can be done via factor analysis and by regression analysis. The analysis generates some interesting results, although also perhaps some less helpful ones. Application of factor analysis to Q3 reveals two clear factors: one factor that seems to capture a number of variables associated with rounded personal development and one factor related to status within a career; these results are presented in Table 5.[11]

{Insert Table 5 about here}

Application of factor analysis to Q5 reveals the existence of four coherent factors, as shown in Table 6, which we name 'effort', 'interest and confidence', 'social' and 'quit'. The first factor brings together variables which explicitly discuss effort and success. The 'interest and confidence' factor coheres around contradictory statements (the degree is fun, versus boring) which can feed into initiatives that can emphasise relevance or change teaching techniques; the fact that these cohere with q5_5 – about being nervous before exams – suggests again that interest and confidence may be linked. However, as noted before,

[11] Application of factor analysis to Q4 generates one factor which seems to capture perceived technical or mathematical ability.

comparing 'good' and 'poor' attenders does not show clear difference in intrinsic motivation. Similarly, the fact that questions such as q5_16 (being able to keep up) does not link to this second factor seems to weakens this thesis. Instead q5_16 appears in the 'social' factor alongside q5_6, q5_15 and q5_19, which all concern the effects of social dynamics on learning and effort (and, by implication, attendance). The final factor 'quit' comprises parts of Q5 concerned with low motivation, low expected satisfaction, giving up (both professionally and academically) and annoyance that the programme is hard (q5_4). The last variable suggests again that lower confidence may act to reduce apparent interest and motivation, and thence attendance. Consistent with that, q5_4 and q5_16 are negatively correlated, although not strongly.

{Insert Table 6 about here}

Application of factor analysis to Q8 reveals 8 disparate factors, as shown in Table 7. The 'info from friends' factor corresponds to an ease of gathering information especially from friends, whereas the 'social' factor corresponds to the clashing of learning with a social life. The 'dull' factor reveals, in line with earlier results, that unstimulating and uninspiring classes are reasons for non-attendance. The 'effort minimising' factor corresponds to a dimension seemingly related solely to passing without much effort (which begs the question why these individuals felt the need to attend the classes in which the questionnaire was distributed) and this effect is separate to the need to earn 'money'. Between these two factors sits a factor related to a lack of relaxation in class, travel/commuting problems and time of day ('q8FIVE') which is difficult to fathom out, not attending only if one is 'sick', and being due to dependents, an inability to understand lessons and not feeling part of a class, all of which may be related to being 'distracted' from class, peers and the lecture content for various reasons. Although this analysis is mainly exploratory it does emphasise the need for greater efforts to understand better these dimensions.

{Insert Table 7 about here}

Regression analysis

As a next step, we estimate an ordered logistic regression with attendance outcomes as the *explanandum* and the regressors being a combination of the factors just generated and other individual-specific characteristics. The regression is applied to the whole sample rather than to sub-samples due to the fairly limited sample size and a general-to-specific approach was employed in order to arrive at the most parsimonious model.[12] These regression results are shown in Table 8.[13]

{Insert Table 8 about here}

These results shown indicate only a handful of statistically significant variables; but there are, in addition, a number of variables with high odds ratios which, consistent with Ziliak and McCloskey (2008) should not be ignored. The regression results suggest that 'Effort' levels are the strongest driver of attendance levels. In terms of the magnitude of the odds ratio, the second most important issue associated with attendance is the complementary

[12] There is a strong argument that sub-sample regression may be more appropriate; although for the 'poor' attenders, data paucity would prevent that.

[13] Note that no respondents self-reported that they attend 0-19%, and hence there are only four operative categories in this Likert scale response variable.

nature of Blackboard downloads – this is most probably endogenous, and whether Blackboard content encourages attendance or complements attendance remains a moot point. The final statistically significant variable in the regression analysis is 'distracted'. This factor is associated with having dependents, an inability to understand lessons and not feeling part of a class. It could be capturing a need or drive to understand the content of classes in spite of a perceived inability (real or perceived) to socialise with peers.

5. Conclusions

This paper reports findings from a largely quantitative study conducted on a heterogeneous group of first year students across a range of programmes in a British Business School. Various quantitative techniques were applied to the data collected in a questionnaire. The paper finds a number of interesting potential relationships between self-reported attendance and a configuration of factors which may affect it. The findings offer some support for the importance of intrinsic motivation in encouraging attendance. It strongly suggests that stimulation (both intrinsic, and that inspired by instructors) plays a role in getting students into the classroom. However, factors such as the social dynamics of the classroom, and of students' wider lives, also play important roles. Interestingly, we also find evidence that Virtual Learning Environments affect attendance; however, the relationship between the two is not straightforward: some of the best attenders tend to use the VLE as a complement to attending. Significantly, and in an addition to the literature, we find tentative evidence that confidence may be a factor affecting attendance. It may not be that students opt out because they are intrinsically not motivated or stimulated; rather they opt out because they feel as if they are struggling. However, the findings of the paper must be taken with extra caution, given the likely strong selection bias present in our sample.

For that reason alone, further investigation of attendance is necessary. Moreover, our results indicate some unclear relationships, i.e. many relationships are complex and may hold for some groups, but not for others. This is to be expected in such a heterogeneous group. For these reasons we suggest the need for further analysis, a large proportion of which ought to be qualitative, as we believe this will allow us to explore individual cases (and possible connections between them) most effectively. Focus groups and individual interviews of students may be deployed to explore different student types, and different combinations of factors affecting attendance among these types. In particular we must target 'poor' attenders, who are under-represented in our sample. However, we should also approach good attenders, to assess in greater depth whether intrinsic motivation is indeed a key determinant of attendance, and to explore which factors create the conditions for intrinsic motivation to emerge.

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Table 1: Descriptive Statistics

	Q.	N	Mean	Std. Dev	Skewness	Kurtosis
Chose option 1 because:						
More interesting than the alternatives	q1_1	186	4.16	0.747	-1.138	2.835
Easier than the alternatives	q1_2	184	2.74	0.989	0.121	-0.371
Relevant to career aspirations	q1_3	184	4.25	0.811	-0.985	0.875
Thought it would be highly quantitative	q1_4	185	3.28	1.072	-0.153	-0.517
Friends taking this module	q1_5	184	2.82	1.171	-0.079	-0.854
Able to gain a high mark for this module	q1_6	186	3.73	0.822	-0.279	0.209
Lecturer's reputation attracted me	q1_7	184	2.93	0.933	-0.237	0.642
Thought module would be challenging	q1_8	183	3.68	0.776	-0.522	0.775
Time and day was convenient	q1_9	182	2.59	0.946	-0.372	-0.089
Look impressive on C.V.	q1_10	184	3.91	0.812	-0.521	0.265
Wanted to learn more about this subject	q1_11	185	4.23	0.696	-1.035	2.627
Liked the assessment structure	q1_12	184	3.59	0.858	-0.037	-0.380
Emphasis is on writing, not math	q1_13	185	3.01	1.093	-0.097	-0.438
Chose option 2 because:						
More interesting than the alternatives	q1_1	65	4.08	0.692	-0.394	0.184
Easier than the alternatives	q1_2	65	2.74	0.957	0.112	-0.254
Relevant to career aspirations	q1_3	64	4.27	0.859	-0.859	-0.252
Thought it would be highly quantitative	q1_4	63	3.40	1.009	-0.001	-0.269
Friends taking this module	q1_5	64	3.02	1.134	-0.369	-0.370
Able to gain a high mark for this module	q1_6	63	3.54	0.820	0.323	-0.519
Lecturer's reputation attracted me	q1_7	63	2.90	0.797	-0.022	2.191
Thought module would be challenging	q1_8	65	3.63	0.802	-0.161	-0.341
Time and day was convenient	q1_9	64	2.80	0.839	-0.262	1.227
Look impressive on C.V.	q1_10	64	3.91	0.904	-0.877	0.898
Wanted to learn more about this subject	q1_11	66	4.18	0.700	-0.266	-0.904
Liked the assessment structure	q1_12	65	3.35	0.738	0.766	0.367
Emphasis is on writing, not math	q1_13	66	3.17	0.938	-0.113	0.638
How important is: (1 = Very unimportant…5 = Very important)						
Career development	q3_1	286	4.65	0.514	-1.160	1.235
Personal development	q3_2	286	4.54	0.540	-0.558	-0.883
Job satisfaction	q3_3	285	4.49	0.620	-1.171	1.976
Financial reward	q3_4	286	4.46	0.624	-0.812	0.089
Status and respect	q3_5	286	4.14	0.775	-0.664	0.088
Being valued by an employer	q3_6	286	4.40	0.629	-0.648	-0.113
A socially useful job	q3_7	285	3.90	0.879	-0.623	0.410
Leisure time	q3_8	286	4.09	0.792	-0.712	0.717
Environmental issues	q3_9	287	3.22	0.978	-0.257	-0.168
Current affairs	q3_10	287	3.68	0.804	-0.078	-0.293
Family and other relationships	q3_11	287	4.48	0.784	-1.516	1.945
Ability: (1 = Poor, 50 = Average, 100 – Excellent)						
Verbal / Written	q4_1	286	71.01	14.420	-0.742	1.436
Mathematical	q4_2	287	67.99	18.388	-0.792	0.881
Organisational	q4_3	287	68.68	20.444	-0.733	0.422
Technical	q4_4	286	67.19	16.042	-0.634	1.133
Problem solving	q4_5	287	69.95	14.818	-0.980	2.186
Presentation skills	q4_6	285	64.57	18.117	-0.320	0.065
Own motivation	q4_7	287	69.64	19.701	-0.506	0.011
Ability to motivate others	q4_8	287	67.48	16.338	-0.269	-0.031
Teamwork skills	q4_9	287	73.92	15.986	-0.656	0.701
Reflective ability	q4_10	287	67.41	15.637	-0.255	0.181
Attitudes: (1 = Strongly Disagree, …, 5 = Strongly Agree)						
I am ambitious	q5_1	286	4.33	0.656	-0.907	2.035
Do not expect my job to be fulfilling	q5_2	284	2.40	1.030	0.688	-0.049
Expect to change career several times	q5_3	285	2.94	0.902	-0.121	-0.392
Annoyed that the programme is so hard	q5_4	280	2.47	0.896	0.554	0.417

Immediately before exams get nervous	q5_5	282	3.65	1.123	-0.734	-0.168
Learn more if tutorial full of capable students	q5_6	286	3.74	0.971	-0.572	-0.031
Some classes interesting, others boring	q5_7	287	4.14	0.728	-0.926	2.036
The idea of giving up studies is appealing	q5_8	286	2.52	1.181	0.282	-0.947
Important to perform well at university	q5_9	286	4.63	0.538	-1.091	0.161
Put a lot of effort to understand everything	q5_10	286	3.87	0.780	-0.535	0.385
Degree will be beneficial to future job	q5_11	287	4.28	0.743	-0.861	0.777
Important to parents I perform well	q5_12	287	4.15	0.858	-0.795	0.117
Degree is interesting	q5_13	287	3.99	0.714	-0.627	1.082
Want good grades, so I work hard	q5_14	285	4.31	0.675	-0.817	1.330
If other students in tutorial work hard, it makes me work hard too	q5_15	287	4.08	0.809	-0.546	-0.296
Can keep up with requirements of course	q5_16	287	4.01	0.637	-0.503	1.094
Am very bored during classes	q5_17	286	3.09	0.841	0.076	0.471
Degree is fin	q5_18	285	3.09	0.861	-0.017	-0.053
The smarter the other students in seminar, the harder I work	q5_19	286	3.58	0.893	-0.151	-0.166
Reasons for not attending						
Completing assignments at the last minute	q8_1	289	0.40	0.490	0.417	1.174
Length of class is too long	q8_2	289	0.03	0.183	5.093	26.936
Classes are not stimulating	q8_3	289	0.52	0.500	-0.090	1.008
I can pass modules without attending all classes	q8_4	289	0.24	0.425	1.248	2.558
Material is available on Blackboard	q8_5	289	0.41	0.493	0.359	1.129
My friends don't attend	q8_6	288	0.14	0.350	2.047	5.190
Clashes with social life	q8_7	288	0.17	0.373	1.789	4.200
I don't feel relaxed in class	q8_8	289	0.07	0.254	3.395	12.524
I need to work to earn money now	q8_9	289	0.10	0.301	2.660	8.077
Class attendance is not compulsory	q8_10	289	0.27	0.443	1.057	2.116
I take material and information from friends	q8_11	289	0.13	0.339	2.181	5.757
I cannot understand lessons	q8_12	289	0.09	0.292	2.794	8.807
Illness or too tired	q8_13	289	0.54	0.499	-0.174	1.030
The teacher is uninspiring	q8_14	289	0.51	0.501	-0.048	1.002
Time of day of class	q8_15	289	0.52	0.501	-0.076	1.006
Travel / commuting problems	q8_16	289	0.23	0.423	1.271	2.615
I don't feel part of the class	q8_17	289	0.03	0.174	5.398	30.143
I have constraints due to dependents	q8_18	289	0.01	0.117	8.323	70.264
Other variables:						
Average hours in paid employment (week)	q10	273	4.447	6.8272	1.648	3.297
Average study hours (week)	q11	280	11.18	7.6102	1.443	3.177
Average leisure hours (week)	q12	266	20.15	17.1323	2.652	8.504
Take a gap year prior to university	q14	285	0.29	0.453	0.943	-1.119
Male	q17	286	0.38	0.487	0.492	-1.770
Age	q19	282	19.44	2.050	6.014	48.352
Father studied at university	q20_1	289	0.29	0.455	0.927	-1.149
Mother studied at university	q20_2	289	0.26	0.439	1.103	-0.789
Brother or sister studied at university	q20_3	289	0.42	0.494	0.331	-1.903
Go abroad after studies for further study or work	q23	283	0.46	0.499	0.178	-1.982
Test mark – Economic Principles	q27_1	61	69.26	9.752	-0.544	0.205
Test mark – Global Business Context	q27_2	151	68.40	14.301	-0.415	0.107
Test mark – Economics for Business & Accounting	q27_3	85	80.26	12.519	-0.917	0.818

Table 2: Correlations on Q5: Attitudes

	q5_1	q5_2	q5_3	q5_4	q5_5	q5_6	q5_7	q5_8	q5_9	q5_10	q5_11	q5_12	q5_13	q5_14	q5_15	q5_16	q5_17	q5_18	q5_19
q5_1	1.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
q5_2	-0.069	1.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
q5_3	-0.200	0.145	1.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
q5_4	-0.156	0.247	0.297	1.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
q5_5	-0.070	0.030	-0.001	0.209	1.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-
q5_6	0.075	-0.010	0.051	-0.045	0.046	1.000	-	-	-	-	-	-	-	-	-	-	-	-	-
q5_7	-0.008	0.036	0.081	0.099	0.184	0.050	1.000	-	-	-	-	-	-	-	-	-	-	-	-
q5_8	-0.091	0.202	0.225	0.252	0.143	-0.011	0.154	1.000	-	-	-	-	-	-	-	-	-	-	-
q5_9	0.270	-0.120	-0.089	-0.116	0.101	0.163	0.011	-0.196	1.000	-	-	-	-	-	-	-	-	-	-
q5_10	0.301	-0.085	-0.134	-0.146	0.115	0.141	-0.064	-0.078	0.407	1.000	-	-	-	-	-	-	-	-	-
q5_11	0.226	-0.095	-0.149	0.115	-0.002	0.102	-0.108	-0.212	0.433	0.520	1.000	-	-	-	-	-	-	-	-
q5_12	0.092	-0.017	-0.035	-0.034	0.043	0.035	-0.017	-0.076	0.329	0.091	0.309	1.000	-	-	-	-	-	-	-
q5_13	0.271	-0.100	-0.086	-0.215	-0.221	0.155	-0.076	0.260	0.270	0.270	0.378	0.202	1.000	-	-	-	-	-	-
q5_14	0.306	-0.032	-0.159	-0.142	0.099	0.111	0.049	0.130	0.458	0.458	0.511	0.268	0.404	1.000	-	-	-	-	-
q5_15	0.125	-0.066	-0.179	0.100	0.072	0.293	0.063	-0.018	0.151	0.151	0.101	0.244	0.052	0.261	1.000	-	-	-	-
q5_16	0.205	-0.150	-0.114	-0.227	-0.103	0.156	-0.020	-0.171	0.218	0.218	0.225	0.163	0.134	0.324	0.249	1.000	-	-	-
q5_17	-0.109	-0.101	0.147	0.328	0.218	-0.031	0.233	0.275	-0.129	-0.129	-0.116	-0.071	-0.368	-0.169	0.051	-0.109	1.000	-	-
q5_18	0.152	-0.048	-0.053	-0.197	-0.228	0.136	-0.218	-0.087	0.046	0.046	0.149	0.033	0.509	0.155	0.055	0.182	-0.265	1.000	-
q5_19	0.182	-0.068	-0.002	0.048	-0.002	0.394	-0.066	-0.033	0.076	0.076	0.126	0.040	0.097	0.061	0.550	0.210	-0.025	0.257	1.000

Table 3: VLE use and attendance

Table 3a: 'Good' (80%+) attenders and timing of VLE downloads

	Prior to lecture	In the week after	End of term	Before the exam	Never	Total
0%<attend<80%	25	39	10	30	10	114
Attend 80%+	63	53	14	14	5	149
Total	88	53	24	44	15	263

Pearson chi^2 (4) = 22.43 (p=0.000)

Table 3b: Attendance and timing of VLE downloads

	0<attend<60	60<attend<80	Attend 80+	Total
Prior to lecture	5	20	63	88
During week after	4	35	53	92
End of term	3	7	14	24
Before exam	10	20	14	44
Never	4	6	5	15
Total	26	88	149	263

Pearson chi^2(8) = 31.75 (p=0.000)

Table 4: Descriptive statistics by attendance group

	Good attenders			Average attenders			Poor attenders		
	N	Mean	Std. Dev	N	Mean	Std. Dev	N	Mean	Std. Dev
Option 1: q1_1	101	4.228	0.691	67	4.089	0.848	16	4.000	0.632
q1_2	100	2.910	1.045	66	2.545	0.898	16	2.500	0.816
q1_3	100	4.240	0.866	66	4.303	0.764	16	4.188	0.655
q1_4	101	3.317	1.122	66	3.333	1.013	16	3.000	0.894
q1_5	99	2.899	1.216	67	2.791	1.135	16	2.688	0.947
q1_6	101	3.717	0.789	67	3.716	0.849	16	3.375	0.806
q1_7	99	2.639	0.946	67	2.985	0.913	16	2.813	0.911
q1_8	99	3.941	0.783	66	3.667	0.730	16	3.500	0.966
q1_9	97	4.220	0.937	67	2.597	1.001	16	2.250	0.775
q1_10	101	3.626	0.892	65	3.938	0.726	16	3.625	0.619
q1_11	100	3.059	0.690	67	4.254	0.725	16	4.188	0.655
q1_12	99	4.056	0.852	67	3.582	0.890	16	3.375	0.806
q1_13	101	2.861	1.147	66	2.894	1.069	16	3.250	0.856
Option 2: q1_1	36	4.243	0.583	23	4.043	0.706	6	4.333	1.211
q1_2	36	3.514	1.046	23	2.696	0.822	6	2.167	0.753
q1_3	37	3.028	0.863	21	4.238	0.944	6	4.500	0.548
q1_4	35	3.441	1.011	22	3.136	1.037	6	3.667	0.816
q1_5	36	2.886	1.183	22	3.045	1.174	6	2.833	0.753
q1_6	34	3.441	0.824	23	3.783	0.736	6	3.167	0.983
q1_7	35	2.886	0.867	23	3.000	0.739	5	2.600	0.548
q1_8	36	3.639	0.798	23	3.783	0.671	6	3.000	1.095
q1_9	35	2.857	0.944	23	2.826	0.717	6	2.333	0.516
q1_10	35	3.829	1.071	23	4.043	0.638	6	3.833	0.753
q1_11	37	4.135	0.751	23	4.174	0.650	6	4.500	0.548
q1_12	98	3.306	0.710	23	3.609	0.722	6	2.667	0.516
q1_13	161	3.162	1.041	23	3.217	0.850	6	3.000	0.632
q3_1	160	4.671	0.471	94	4.574	0.595	29	4.724	0.455
q3_2	160	4.556	0.511	95	4.526	0.543	29	4.448	0.686
q3_3	160	4.488	0.583	94	4.532	0.581	29	4.379	0.903
q3_4	160	4.494	0.583	95	4.379	0.702	29	4.552	0.572
q3_5	161	4.150	0.762	95	4.189	0.748	29	4.034	0.865
q3_6	159	4.416	0.608	94	4.404	0.645	29	4.345	0.721
q3_7	161	3.956	0.874	95	3.853	0.838	29	3.793	1.048
q3_8	161	4.087	0.770	94	4.043	0.841	29	4.241	0.739
q3_9	161	3.242	0.947	95	3.147	0.978	29	3.344	1.173
q3_10	161	3.621	0.790	95	3.758	0.841	29	3.690	0.850
q3_11	161	4.547	0.715	95	4.400	0.843	29	4.344	0.936
q4_1	161	71.988	13.478	94	68.309	15.256	29	74.276	15.908
q4_2	161	69.410	17.844	95	67.032	19.426	29	61.897	16.925
q4_3	161	75.981	16.851	95	60.716	19.965	29	53.241	22.847
q4_4	161	69.509	15.197	94	64.968	16.530	29	60.586	16.754
q4_5	161	71.416	15.016	95	68.474	15.054	29	66.621	12.667
q4_6	160	68.981	17.010	94	58.968	19.181	29	59.414	14.060
q4_7	161	76.652	16.331	95	62.547	19.995	29	55.276	20.091
q4_8	161	70.317	15.057	95	64.221	16.426	29	62.966	20.442
q4_9	161	73.876	16.300	95	73.747	15.993	29	75.552	14.853
q4_10	160	68.944	15.329	95	65.747	15.016	29	64.552	18.702
q5_1	160	4.431	0.631	95	4.232	0.627	29	4.000	0.756
q5_2	158	2.335	0.962	95	2.442	1.099	29	2.552	1.152
q5_3	159	2.868	0.858	95	3.011	0.940	29	3.241	0.912

q5_4	157	2.408	0.906	92	2.522	0.895	29	2.690	0.850
q5_5	159	3.704	1.094	92	3.598	1.130	29	3.552	1.183
q5_6	160	3.813	0.992	95	3.558	0.964	29	3.862	0.789
q5_7	161	4.106	0.763	95	4.147	0.714	29	4.207	0.559
q5_8	160	2.450	1.207	95	2.495	1.129	29	3.000	1.134
q5_9	161	4.758	0.458	94	4.489	0.600	29	4.414	0.568
q5_10	161	4.149	0.663	94	3.660	0.727	29	3.034	0.778
q5_11	161	4.466	0.643	95	4.126	0.761	29	3.724	0.841
q5_12	161	4.180	0.836	95	4.063	0.885	29	4.276	0.882
q5_13	161	4.112	0.652	95	3.884	0.784	29	3.690	0.712
q5_14	160	4.531	0.626	94	4.138	0.727	29	3.690	0.712
q5_15	161	4.155	0.811	95	3.958	0.824	29	4.000	0.707
q5_16	161	4.106	0.658	95	3.937	0.598	29	3.759	0.577
q5_17	160	3.019	0.835	95	3.126	0.815	29	3.310	0.891
q5_18	160	3.188	0.870	94	3.032	0.861	29	2.828	0.759
q5_19	160	3.663	0.868	95	3.505	0.955	29	3.379	0.820
q8_1	161	0.31	0.464	96	0.47	0.502	29	0.69	0.471
q8_2	161	0.03	0.174	96	0.03	0.175	29	0.70	0.258
q8_3	161	0.49	0.501	96	0.60	0.492	29	0.45	0.506
q8_4	161	0.15	0.357	96	0.30	0.462	29	0.48	0.509
q8_5	161	0.34	0.476	96	0.48	0.502	29	0.62	0.494
q8_6	160	0.07	0.254	96	0.18	0.384	29	0.45	0.506
q8_7	160	0.09	0.292	96	0.26	0.441	29	0.28	0.455
q8_8	161	0.05	0.218	96	0.10	0.307	29	0.07	0.258
q8_9	161	0.09	0.292	96	0.10	0.307	29	0.10	0.310
q8_10	161	0.19	0.391	96	0.30	0.462	29	0.62	0.494
q8_11	161	0.10	0.300	96	0.14	0.344	29	0.31	0.471
q8_12	161	0.07	0.253	96	0.13	0.332	29	0.14	0.351
q8_13	161	0.50	0.502	96	0.54	0.501	29	0.83	0.384
q8_14	161	0.50	0.502	96	0.55	0.500	29	0.45	0.506
q8_15	161	0.39	0.488	96	0.65	0.481	29	0.90	0.310
q8_16	161	0.20	0.400	96	0.28	0.452	29	0.28	0.455
q8_17	161	0.02	0.136	96	0.04	0.201	29	0.07	0.258
q8_18	161	0.02	0.136	96	0.01	0.102	29	0.00	0.000
q10	149	5.069	7.012	89	4.101	6.995	29	1.983	4.227
q11	154	12.763	8.336	95	9.800	6.380	29	7.190	4.870
q12	149	18.111	16.252	87	21.724	19.288	29	26.428	13.184
q14	159	0.252	0.435	95	0.274	0.448	29	0.483	0.509
q17	158	1.443	0.498	96	1.260	0.441	29	1.931	0.753
q19	155	19.581	2.593	95	19.200	0.996	29	19.448	1.242
q20_1	161	0.267	0.444	96	0.344	0.477	29	0.241	0.435
q20_2	161	0.217	0.414	96	0.313	0.466	29	0.276	0.455
q20_3	161	0.398	0.491	96	0.406	0.494	29	0.621	0.494
q23	157	0.382	0.487	94	0.553	0.500	29	0.552	0.506
q27_1	161	68.594	10.226	24	69.833	9.671	5	70.800	8.349
q27_2	83	70.976	14.463	48	64.604	14.345	17	66.824	12.586
q27_3	46	82.848	12.209	33	78.697	10.815	6	69.000	17.686

Table 5: Factor analysis on q3

	Rounded personal development	Career status	Preference for the present
q3_9	0.683		
q3_10	0.646		
q3_2	0.632		
q3_7	0.597		
q3_6	0.574	0.456	
q3_11	0.562		
q3_3	0.399		
q3_4		0.807	
q3_5		0.745	
q3_1		0.553	-0.524
q3_8			0.707

Notes: Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.

Table 6: Factor analysis on Question 5 (aspirations / attitudes)

	'Effort'	'Interest and confidence'	'Social'	'Quit'	q3FIVE
q5_14	0.800				
q5_10	0.795				
q5_11	0.718				
q5_9	0.646				
q5_1	0.491				
q5_18		-0.681			
q5_5		0.634			
q5_17		0.597			
q5_13	0.516	-0.572			
q5_7		0.538			
q5_19			0.873		
q5_15			0.809		
q5_6			0.618		
q5_16			0.314		
q5_2				0.658	
q5_3				0.626	
q5_4				0.609	
q5_8				0.497	
q5_12					-0.793

Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization. Rotation converged in 8 iterations. KMO = 0.758.

Table 7: Factor analysis on q8

	Info from friends	Social	Dull	Effort minimising	q3Five	Distracted	Sick	Money
q8_5	0.733							
q8_11	0.663							
q8_6	0.598							
q8_7		0.772						
q8_10		0.563		0.503				
q8_4		0.464						
q8_15		0.448			0.444			
q8_3			0.806					
q8_14			0.793					
q8_1				0.781				
q8_16					0.734			
q8_8					0.631			
q8_18						0.824		
q8_12						0.485		
q8_17						0.474		
q8_2							-0.696	
q8_13							0.617	
q8_9								0.859

Notes: Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 9 iterations. Kaiser-Meyer-Olkin Measure of Sampling Adequacy=0.646.

Table 8: Ordered logistic regression

	Odds ratio	(Std. Error)
N	234	
Rounded personal development	0.788	(0.117)
Career status	0.827	(0.122)
Preference for the present	1.443	(0.216)
Effort	2.975	(0.500)***
Access Blackboard: Prior to lecture	2.178	(0.791)**
During week of lecture	*Base category*	
End of term	0.878	(0.444)
Before exam	0.514	(0.212)
Never	0.703	(0.402)
Info from friends	0.803	(0.112)
Distracted	1.341	(0.230)*
Money	1.252	(0.172)
Cut1	-4.256	(0.489)
Cut2	-2.599	(0.326)
Cut3	-0.199	(0.240)
Pseudo R^2	0.174	
Log likelihood	-192.182	

Notes: ***, ** and * signify statistical significance at the 1%, 5% and 10% levels respectively.