Psychological and Demographic Predictors of Undergraduate Non-Attendance at University Lectures and Seminars

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Abstract

Background – Absenteeism from university teaching sessions is increasingly becoming a common phenomenon and remains a major concern to universities. Poor attendance has significant and detrimental effects on students themselves, their peers and teaching staff. There is however, a lack of previous research that has investigated demographic and psychological predictors of non-attendance alongside salient reasons student offer for their absence; it is this 'gap' that the present study attempts to fill. ***Method -*** 618 undergraduate university students from a single UK university studying various courses completed a bespoke questionnaire that assessed their estimated percentage attendance at lectures and seminars over the academic year. Students answered demographic questions, completed psychometric tests of perceived confidence (*Perceived Confidence for Learning*: Williams and Deci 1996) and university belongingness (*Psychological Sense of School Membership*; Goodenow 1993a), and rated the degree to which possible reasons for non-attendance applied to themselves. ***Results*** - Multiple regression analyses were carried out separately for estimated attendance at lectures and seminars. Results demonstrated that significant predictors of poorer attendance for both scenarios were; experiencing a lower sense of belongingness to university; working more hours in paid employment; having more social life commitments; facing coursework deadlines and experiencing mental health issues. ***Conclusions*** – Improving a sense of belonging to university and targeting interventions at students working in paid employment may be effective at increasing attendance. Providing support for students with mental health issues, structuring courses around coursework deadlines, and helping students to management their attendance around social activities could also be advantageous.

Introduction

University teaching sessions

The purpose of university lectures is the transfer of knowledge from the lecturer to the student (Bati, et al., 2013). Despite the increase in recent years of more interactive teaching techniques, traditional lectures are still the fundamental method of teaching within UK universities (Dolnicar, et al., 2009). Lecturing to large numbers of students simultaneously is considered one of the most economical and productive teaching mechanisms within Higher Education (Svinicki and McKeachie, 2011). Lectures provide the student with an introduction of the topic, core knowledge of the area, show opposing points of view, aid the development of critical thinking skills and direct student learning (Bligh, 2000).

Seminars on the other hand are able to offer a more student led approach to teaching (Dolnicar et al., 2009). They often adopt a smaller group dynamic with more discussions and student participation. The aims of seminars are to explore the topic in greater depth, to allow for contributions from the group, to share ideas and to hear a range of opinions (Fiksdal, 2014). Universities frequently promote the importance of attendance to students to lectures and seminars, nonetheless non-attendance rates remain relatively high (Crede, Roach and Kieszczynka, 2010).

Importance of Attendance

Absenteeism from university lectures and seminars is increasingly becoming the norm (Mearman et al., 2014; Marburger, 2006), and it poses a significant problem not only for the students themselves, but also their peers (Landin and Pérez, 2015), teaching staff (Bennett, 2003) and at a university wide level (Bowen, et al., 2005). There is substantial evidence to suggest that low levels of attendance are related to

poorer grades received for submitted work (Nyamapfene, 2010; Muir, 2009; Newman-Ford, et al., 2008; Woodfield, Jessop and McMillan, 2007; Marburger, 2006). Furthermore, absenteeism can result in failing to develop the appropriate professional skills required for a particular career as key non-academic skills may have been missed in classes not attended (Confederation of British Industry/National Union of Students, 2011).

Non-attendance also affects peers, who may feel uncomfortable if large numbers are absent from classes (Devadoss and Foltz, 1996), and can be particularly disadvantaged in group-work situations when their colleagues do not attend (Bennett, 2003). Lecturers are also influenced by non-attendance and may become demotivated, losing morale and feeling like they are wasting their time if students do not attend their class (Bennett, 2003). Additional disruptions are also evident when tutors have to re-teach concepts to students who did not initially attend classes, in order to facilitate learning in the current class (Wadesango and Machingambi, 2011). Absenteeism has implications at a university wide level, as poorer attendance has been taken as a proxy for student motivation to study and their satisfaction with the course (Kottasz, 2005), and this has important implications for university league tables. Students with poor attendance are more likely to drop out of courses, which has financial implications (Bowen et al., 2005; Prescott and Simpson, 2004).

Reasons for non-attendance

A number of studies have therefore attempted to investigated possible reasons students give for their non-attendance at university teaching sessions (e.g. Bati et al., 2013; Kelly, 2012; Dolnicar et al., 2009). Some of the most salient reasons can be conceptualised as either relating to the *teaching on the course* or to *personal issues*.

Teaching on the course

In terms of teaching on the course research has shown that often students do not attend sessions as they are working on other assignments (Paisey and Paisey, 2004). Friedman et al., (2001) also demonstrated that working on coursework for another module was a significant predictor of poorer attendance. If a class is seen as irrelevant and not linked to an assessment point students may choose to work on other assignments instead, possibly reflecting poor time management (Muir. 2009).

Dolnicar et al., (2009) has demonstrated that subject difficulty is related to non-attendance, with those lectures perceived as easier having lower levels of attendance. Presumably students feel able to meet requirements of the course outside the lecture times, and perceive the cost of attending as high. If students enjoy the class however, then they are more likely to attend (Friedman et al., 2001). Enjoyment of the class may be lower if students think the teaching quality is poor, or if they dislike the lecturer (for example, if they did not find the teaching style engaging).

The number of the students within the room is likely to have an effect upon attendance rates, as evidence suggests that students find it more difficult to attend when there are larger class sizes as they feel their presence is more anonymous (Dolnicar et al., 2009; Devadoss and Foltz, 1996). There is also evidence to suggest that students do not attend due to the scheduled time of the session (Paisey and Paisey, 2004). Devadoss and Foltz, (1996) demonstrated that students preferred classes that are scheduled between 10am and 3pm with lectures and seminars falling outside of these times experiencing more absenteeism. Finally, non-attendance at university classes has been found to increase when lecture materials are available online for students (Friedman et al., 2001; Grabe, Christopherson, and Douglas, 2005). These reasons are amongst some of the most frequently cited for lecture non-

attendance in university students (Bati et al., 2013; Dolnicar et al., 2009; Friedman et al., 2001; Kottasz, 2005; Massingham and Herrington, 2006).

Personal issues

In terms of personal issues Wadesango and Machingambi, (2011) listed wanting to spend time with friends as one of the most important reasons for students missing classes, with almost 40% of respondents stating this as a frequent occurrence. Longhurst, (1999) reported that 46% of students had missed lectures because they were spending time on social activities. Personal time management is another important factor with 41% of students in a study by Bati et al., (2013) responding that they *agreed* or *strongly agreed* with a scale item related to time management influencing their attendance. Muir, (2009) found attendance was affected by spending time on other university work instead of attending lectures, therefore indicating a general issue around planning their time.

Mental health issues such as increased stress was a factor leading to non-attendance in a study by Martin, (2010) and this was linked to student workload. Woodfield et al., (2007) also found that personal reasons and emotional issues were themes in their study, indicating that stress and depression play a part. Westrick et al. (2009) demonstrated that 46% of respondents said physical illness was the main reason they had missed lectures. In a similar study by Bati et al., (2013) 60% of students reported that illness had affected their attendance.

Bati et al., (2013) showed that travel is another factor affecting attendance as 25% of the respondents in this study agreed that a transport problem prevented them from attending a session. Additionally, a small proportion agreed that there have been occasions where they could not afford the fare to travel to university. Muir, (2009) noted a marked drop in the attendance levels of those students who returned to their

parent's home every weekend, compared to those who lived with their parents full-time whilst studying who had the highest level of attendance. Finally, Wadesango and Machingambi, (2011) noted that socio-economic influences affect student attendance if, for example, they have to work to support themselves and their families.

Predictors of non-attendance

In addition to the reasons students offer for their non-attendance to teaching sessions, some research has been conducted to investigate the demographic and psychological characteristics of students who fail to attend classes.

The year in which a student is studying appears to have some effect on their attendance levels (Crede, et al., 2010). Devadoss and Foltz, (1996) demonstrated that student attendance levels in more junior years were at least 5% higher than in senior years. Conversely, Kelly, (2012) reported that as students progressed through their degree, they felt more committed to the course. Students may have had higher levels of attendance due to increases in motivation they experienced as the units they study in the final year are linked to their chosen degree path and they may have smaller class sizes.

Several studies have shown female students have better attendance than their male colleagues (Sheard, 2009; Woodfield, et al., 2007; Smith, 2004). This finding may reflect the strong relationship that exists between attendance and attainment (Crede, et al., 2010), as female undergraduates consistently outperform their male counterparts (Smith, 2004). Turner and Gibbs, (2009) have also suggested that female students in general adapt better to the requirements of Higher Education. One of these requirements might be the increased flexibility university students have over their peers in college or school on their choice to attend classes.

There is some evidence to suggest that living arrangements have an impact on a range of outcomes in the student population. Students living away from home often report having significant problems with their accommodation particularly when completing academic tasks (Cahill, Bowyer and Murray, 2014). Negative experiences of accommodation at university can therefore have a significant impact on withdrawal from a course, which presumably begins with falling attendance levels (Harrison, 2006).

The distance a student needs to travel to university will have an effect upon their attendance levels (Friedman, Rodriguez, and McComb, 2001). Students who live closer to the campus have been shown to have higher rates of attendance (Thatcher et al., 2007). Students who live further away might feel it is not worth the effort travelling if it takes too long to get to campus or if they had already returned home and do not want to travel back for just one later class (Friedman et al., 2001).

First generation students are those who do not have a parent who has graduated from university (Thomas, Farrow and Martinez, 1998). The numbers of first generation students are increasing (Jehangir, 2010), with 20.6% of first year undergraduates identifying as being first generation within the United States (Stebleton, Soria and Huesman, 2014). Research has shown that these students are more likely to be from minority backgrounds, be financially independent (Stebleton et al., 2014), have a disability (Bui, 2002), or be from a low-income background (Engle and Tinto, 2008). These factors may be disadvantageous in Higher Education (Stebleton et al., 2014), and may possibly contribute toward low retention rates of this group of students (Engle and Tinto, 2008), and perhaps lower attendance levels.

Research conducted over a decade ago has demonstrated that students' work commitments outside of university was a factor in affecting student attendance

(Friedman et al., 2001; Paisey and Paisey, 2004). More recently Kelly, (2012) reported that 39% of students at one university were working part-time and that this negatively affected their attendance. AbuRuz, (2015) also demonstrated in a study investigating the link between attendance and academic achievement, that grades were poorer for full time students who were also working between 8 and 12 hours per week, presumably as they were unable to attend all the classes.

Other more psychological variables might also have an effect on student attendance. Of increasing interest in the education literature is the concept of belonging. While not well defined in relation to Higher Education (Meeuwisse, Severiens and Born, 2010), Hagerty et al., (1992) described belonging as how much *"a person feels themselves to be an integral part of that system or environment"* (pp 173). Students who feel like they belong to their learning environment report higher confidence and enthusiasm (Furrer and Skinner, 2003), self-efficacy (Goodenow, 1993b), well-being (Anderman and Freeman, 2004), and retention (Tovar, Simon and Lee, 2009). It is conceivable that those with higher levels of belonging will feel more engaged with their course and have higher attendance rates.

Student confidence in their own academic ability may play also a role in student attendance and retention. Those students with strong self-confidence not only perform better in end of year assessments and examinations (Nicholson, et al., 2011), but are more likely to progress through their undergraduate degree and not withdraw (Raelin, et al., 2014). It could be argued here that lack of confidence in their own ability and being unable to manage the requirements of the degree will lead to students not engaging with the course, resulting in lower attendance levels and ultimately withdrawing from their chosen course.

The current study aims

The contribution of this study is to develop our understanding of the reasons students give for their absenteeism at university teaching sessions, and whether any demographic or psychological variables can predict their non-attendance levels.

It is important to acknowledge that attendance is affected by a number of factors both in combination and to varying degrees. Therefore, investigating multiple variables within a single study will prevent an overestimation of the importance of any particular factor. The relative importance of each predictor variable can be acknowledged by asking students to rate the degree to which it has influenced their attendance, rather than just asking for a yes/no response. This is a more in-depth approach although not common within other previous research.

To our knowledge, our study is the first of its kind to assess possible demographic and psychological predictors of non-attendance alongside salient reasons students offer for their absence across both lectures and seminars, and from multiple courses with a university. The aims of the study were to investigate the reasons students give for non-attendance and whether these actually predict estimated non-attendance rates. The research questions underpinning this study were: *what are the most salient reasons that students perceive to affect their non-attendance to lectures and seminars?* Secondly; *what are the demographic and psychological variables and key reasons that predict students' estimated attendance at lectures and seminars?*

The timing of this study is pertinent, as attitudes to teaching at university have changed in recent years due to widening use of the internet and interactive technologies (Kelly, 2012). Furthermore, the recent increase in fees, growth in diversity and widening of participation within the sector, as well as increased numbers

of students on university courses (see Universities UK, 2014), demonstrates significant changes within Higher Education which could all impact on current attendance rates and the reasons students provide for their non-attendance at university classes.

Method

Participants

An opportunity sample of 618 undergraduate university students attending a public university in the North West of England with over 30,000 enrolled students took part in the research. The sample comprised 482 female and 133 male participants (with 3 respondents not specifying). Participants represented a number of courses within the university across multiple Faculties. Participants did not receive any recompense for taking part in the study.

Design

A cross-sectional, natural variation survey design was utilised for this piece of research. Participants were asked to estimate the proportion of lectures and seminars they had attended over the current academic year. Seven demographic explanatory variables were measured which included; year of degree, living arrangements, distance living from university, whether they were the first family member to attend university, number of hours in paid work per week, whether they were participating in voluntary work, and gender. A further two explanatory variables measured participants' perceived confidence in their course and their perceived sense of belongingness within the university. Finally, participants rated the degree to which 17

potential reasons for non-attendance, relating to teaching on the course and personal life, were self-relevant.

Materials

A bespoke questionnaire was designed for the purpose of this study. The questionnaire was divided into three parts. Part One required participants to answer two questions about their estimated percentage attendance level at lectures and separately at seminars over the academic year (2014-15). Total percentage scores were broken into boundaries i.e. 0-10% coded as 1, 11-20% coded as 2, 21-30% coded as 3, 31-40% coded as 4 etc. up to 91-100% being coded as 10. Students were aware of the difference between lectures and seminars as these are explicitly stated on their timetables.

Part Two asked seven demographic questions about the participants' background, e.g. year of study, gender etc. (see Table 1 for descriptions and data descriptive statistics). These were selected from a literature review highlighting the key demographic predictors of non-attendance. Two standardised questionnaires, The *Psychological Sense of School Membership* (PSSM) (Goodenow 1993a) and the *Perceived Confidence for Learning* (PCL) (Williams and Deci, 1996) were also included.

The *Psychological Sense of School Membership* (PSSM) (Goodenow, 1993a) is a self-report survey that assesses a students' perception of their connectedness to school. This survey was originally designed for adolescents within schools, although it was adapted for the purposes of the present study with amended wording to be relevant to a university audience. As such, the word 'school' was changed to 'university' e.g. '*I can really be myself at this university'*. All other details remained

the same as the original version. The survey was measured across a five-point Likert scale (ranging from 1 - *not at all* to 5 - *completely true*). Averaged scores were attained across the 18 items. A higher score indicates a stronger sense of belongingness or connectedness to university. The Cronbach's Alpha for this survey within the present study was 0.86, which is consistent with other research that has found high internal consistency (0.88), and after 4 weeks, good test-retest reliability (r = 0.78; Hagborg, 1998).

The *Perceived Confidence Scale for Learning* (PCL) (Williams and Deci, 1996) is a self-report survey that assesses how competent individuals feel in respect to a particular learning domain. The scale contains four items (e.g. *I feel capable of learning the material in this course)*. Items are measured on a 7-point Likert scale from (ranging from 1 - *not at all true* to 7 - *very true*). Higher scores indicate more confidence in learning on the course. The Cronbach's Alpha for this survey within the present study was 0.72.

Part Three asked participants to rate themselves on five-point Likert scale (ranging from 1 – *strongly disagree* to 5 – *strongly agree*), concerning the extent to which 17 reasons for non-attendance had influenced their attendance to lectures and seminars. These reasons included nine issues around teaching on the course such as having a coursework deadline, whether the session was linked to an assessment, perceived course difficulty, perceptions about teaching, the lecturing style, the time of the teaching session, class size, availability of online resources, and course enjoyment. Eight issues around a student's personal life were also included. These were social life, personal time management, mental health issues, illness, being unable to rearrange appointments, travel issues, family commitments, and living arrangements. Factors were selected for inclusion on the basis of an extensive

literature review within the area, and from 8 focus groups conducted by the researchers, which invited (N = 36) students to discuss reasons for their non-attendance to lectures and seminars.

Procedure

E-mails were sent out to all students studying undergraduate degrees within various university departments, inviting them to take part in a study investigating students' reasons for non-attendance at lectures and seminars. Participants either followed a link to an online questionnaire (n = 393) or completed a paper copy of the same questionnaire (n = 225) given to them on the University campus. Reminder emails were sent out to students at weekly intervals and opportunity sampling ensured that a small number of 'other' students who were studying different course were included within the final sample. Data collection occurred over a 3-week period. The questionnaire initially stated the nature of the study and provided details of the research team, how students could withdraw their data at a later date and invited students to ask questions if they required further information. Participants gave their consent to take part in the study by ticking that they understood the nature of the study and how the data would be used. Ethical approval for the research was gained from the University Ethics Committee. Data was inputted and analysed within SPSS version 21.

<< Insert Table 1 here>>

Results

Research Question 1 asked *what are the most salient reasons that students perceive affect their non-attendance at lectures and seminars?*

In order to answer this question, the mean scores of the 17 different reasons for non-attendance estimated by students are recorded in Table 2.

<< Insert Table 2 here >>

As can be seen from Table 2 the top five reasons for non-attendance at teaching sessions rated by students were very similar for lectures and seminars. Reasons for non-attendance at lectures were having a coursework deadline (M = 3.49), lack of enjoyment, (M = 3.16), illness (M = 3.15), perceptions about teaching (M = 3.14), with more positive perceptions leading to higher attendance, and the session not being linked to an assessment (M = 3.01). Coursework deadline was the most important reason for seminar non-attendance, (M = 3.56) followed by perceptions about teaching, (M = 3.22), lack of enjoyment (M = 3.20), illness (M = 3.14), and session not linked to an assessment (M = *3.12*).

Research Question 2 asked *what are the demographic and psychological variables and key reasons that predict students estimated attendance at lectures and seminars?*

In order to answer this question two multiple regression analyses were computed with the data in order to demonstrate how much variance in the outcome variables could be accounted for by the predictor variables. The outcome variables were firstly students' estimated lecture attendance over the past academic year, and

secondly students' estimated attendance to seminars over the past academic year, expressed as percentages. The seven demographic variables measured within the study (year group, living arrangements, distance from university, first in family to attend university, hours in paid employment, volunteering or not, and gender) and the scores on two standardised psychometric tests (sense of belongingness and perceived confidence), alongside the participants' scores on the 17 reasons for non-attendance were used as predictor variables within both models.

For model 1 (estimated lecture attendance) a significant model emerged, $F(26, 438) = 10.260, p < .001$. The R square value .379 indicates the predictors in the model account for about 38% of the variance in estimated lecture attendance, indicative of a large effect (Cohen, 1992).

Living arrangements was a significant predictor (β *-.153, p = .001*) and indicated that those living with parents or in their own home had better estimated lecture attendance than students living elsewhere. *Number of hours in paid employment* (β *-.084, p = .036*), demonstrates that as the number of hours a student spends in paid employment increases, their attendance declines. A s*ense of belonging* was a significant predictor (β *.187, p < .001*), as those with a higher sense of belongingness with their course also demonstrated increases in estimated level of attendance at lectures.

From the 17 possible reasons for non-attendance to lectures, five emerged as significant predictors. One of these related to teaching on the course, which was having a coursework deadline (β*. -161, p = .001*). Four significant predictors related to the student's personal life, included having social life commitments (β *.-158, p < .001*), having mental health issues (β *.-135, p = .003*), experiencing illness (β *.-141, p = .002*), and having problems with travel arrangements (β *.-105, p = .028*).

For model 2 (estimated seminar attendance) a significant model emerged, $F(26, 417) = 10.110, p < .001$. The R square value .387 indicates the predictors in the model account for about 39% of the variance in estimated seminar attendance, indicative of a large effect (Cohen, 1992).

The significant predictors within this model were *Year of study* (β -.166, $p <$ .001) indicating that as students' progress through the academic year groups their attendance deteriorates. *Whether student was the first in the family to attend university* (β .084, $p = .034$) was a significant predictor indicating that those who were not the first in their family to attend university had better attendance. *Number of hours in paid employment* (β -.148, $p < .001$) demonstrates that as the number of hours a student spends in paid employment increases, their attendance declines. Finally, *sense of belongingness* (β .166, $p < .001$) demonstrates that as a sense of belongingness to university increases so does estimated level of attendance at seminars.

From the 17 possible reasons for non-attendance at seminars, four emerged as significant predictors. Two of these related to teaching on the course, which were having a coursework deadline (β .-193, $p < .001$), and whether the seminar is linked to an assessment (β .-172, $p < .001$). The remaining two variables were related to personal life issues, specifically, having mental health issues (β .-103, $p = .029$), and social life commitments (β .-106, $p < .016$).

<< Insert Table 3 and 4 here >>

Discussion

The results within the present study demonstrated that key predictors of poorer lecture and seminar attendance were a lower sense of belonging to university, working more hours in paid employment, having coursework deadlines, social life commitments or mental health issues. Predictor variables specific to lecture non-attendance included living away from home, illness and travel issues. Unique predictors for seminar non-attendance were being in an older year group, the first in the family to attend university, and whether the session was linked with an assessment.

A lack of belonging to university was a strong predictor of poorer attendance. This concept has not been extensively investigated in relation to attendance and to our knowledge the present study is one of the first to do so. The literature is however, fairly consistent in highlighting the importance of a sense of belonging in terms of students having more confidence, enthusiasm (Furrer and Skinner, 2003), self-efficacy (Goodenow, 1993b), better well-being (Anderman and Freeman, 2004), and higher retention (Thomas, 2012; Tovar et al., 2009). It is perhaps not surprising that the present study found a significant relationship between those who feel a greater sense of belonging and higher attendance rates. Perhaps this is due to associating university with feelings of acceptance, support, and positive regard from both staff and peers (Goodenow, 1993b; Thomas, 2012).

A second demographic predictor of non-attendance was the number of hours spent in paid employment. Support can be raised for Kelly, (2012) who reported that 39% of students were working part-time during their studies and that this was one of the main reasons students missed classes. Additionally, Paisey and Paisey, (2004) found that working part-time was the most common reason for missing classes. With

the increase in student fees in recent years, more students are required to work to fund their place at university. Indeed a study conducted by the NUS and Endsleigh Insurance Services Limited, (2015) reported that 77% of students have to work in order to fund their continuing education. Furthermore, an earlier report by the NUS and HSBC found that 70% of students polled stated that if fees rose to £7,000 per year they would be deterred from applying to go to University, as they would not be able to afford to live and pay fees (NUS/HSBC, 2010). Thus, work related issues could be particularly pertinent in explaining non-attendance.

Three key reasons for non-attendance across lectures and seminars emerged within the present study; coursework deadlines, mental health issues and social life commitments. A few previous studies have hinted that coursework commitments may have an effect on attendance (Friedman et al., 2001; Paisey and Paisey, 2004). The present study highlights this as an important reason, but it may reflect poor time management or lack of motivation to attend a lecture they think will not be engaging (Muir, 2009). Previous research has also suggested that social life commitments are a salient reason for non-attendance (i.e. Wadesango and Machingambi, 2011; Longhurst, 1999), which is supported within the present study, and could again reflect poor time management between two competing priorities (Bati et al., 2013).

Surprisingly few studies have mentioned mental health issues as a possible reason for non-attendance amongst university students. This is despite 20% of students considering themselves to have a mental health issue and 92% experiencing feelings of mental distress at some point in their university career (Kerr, 2013). With such a high proportion of students experiencing distress related to university it is unsurprising that attendance would be negatively affected. The present study therefore

provides support for previous research that has found mental health issues such as stress and depression could be linked to non-attendance (Woodfield et al., 2007).

Unique predictors within the lecture model were living away from home, experiencing illness and travel issues. A few studies have suggested that living arrangements may influence academic outcomes (Stanca, 2006), retention and withdrawal from courses (Harrison, 2006). The present study suggests that living arrangements influence other university outcomes such as levels of absenteeism, and in particular, that living away from home is associated with poorer class attendance. This is perhaps not the most surprising finding, as students living away from home have to manage more change in their transition to university. As well as beginning a new course they will have new living arrangements, and will need to negotiate these changes outside of their home environment and without the direct support of parents or guardians. These living adjustments could impact negatively on attendance levels. Illness and travel issues have also been noted as salient predictors within previous research (Westrick et al., 2009; Bati et al., 2013), what is unclear however, is why these predictors emerged as significant for lectures but not seminars. Further research is needed to uncover why this might be the case.

Unique predictors within the seminar model included being the first in the family to attend university, year of study and whether the session was linked to an assessment or not. First generation students were more at risk of poorer attendance at seminars. This group of students may be more disadvantaged at university as they are more likely to come from a low-income background (Engle and Tinto, 2008) and may have to work to support themselves, which could impact on attendance. First generation students may also feel a lack of belonging to the university and subsequently not see benefits of integrating and attending regularly (Thomas, 2012).

Seminar attendance may particularly suffer, as unlike lectures they may not be seen as core teaching by students, and the interactive nature may be more of a challenge for students who do not have a strong sense of belonging. Devadoss and Foltz, (1996) demonstrated that student attendance level deteriorates over time. In the latter years of studying a degree students may become more self-aware and be more selective in the teaching sessions they attend therefore perceiving seminars as less important than lectures, and may mean other commitments take priority. Finally, if students do not see the relevance of a teaching session such as when it is not directly linked to an assessment they are less likely to attend. Presumably, students feel their time commitments could be better spent elsewhere, such as studying for exams in other subjects and subsequently missing classes (Bati et al., 2013).

Limitations and directions for future research

The present study utilized a large number of students across a range of distinct courses, however, as it adopted a cross-sectional, correlational design, causality cannot be inferred. It is possible that the significant predictors within this study such as lack of belonging to university were in fact a consequence and not a cause of poorer attendance. With the type of design utilized within the study the direction of any effects cannot be reliably determined. Nonetheless, there were strong and significant relationships between a number of different predictor variables and the outcomes of non-attendance. These results maintain that an important relationship exists between attendance and the variables that were found to be significant, which could be further explored within longitudinal and experimental studies. Furthermore, adopting a design that is able to account for the fact that students on the same course will be more similar than students on a different course (perhaps by using more

advance statistical test such as multi-level modelling) could address some of the inherent differences in students across courses and universities.

A potential limitation of the present study concerns the outcome variable of students' estimated seminar and lecture attendance. There are concerns that asking students to estimate, rather than relying upon actual attendance figures, could lead to an overestimation of attendance (Kelly, 2012). Despite this being a potential issue leading to some biases within the results, the decision to include this element was made on a number of grounds. Firstly, adopting such an approach allowed for ease of data collection across multiple courses and Faculties within the university that would otherwise have needed considerable coordination. Secondly, although lecture attendance is often monitored within traditional lectures, this is not always the case within seminars, and differences in how attendance is recorded are evident across courses. Thirdly, asking students to estimate their attendance level allowed students to complete the questionnaire anonymously. Requesting actual attendance figures for each student could lead to biases in responses, as students would know they are potentially identifiable. Finally, collecting attendance data from more *objective* means i.e. using data from attendance registers, can lead to misleading results. When using paper registers students have reported the register not being passed around the whole class, signing in for their friends, and leaving after a break in the lecture. When using online registers students have reported problems with the internet connections and as registration can often be done from outside the lecture room this does not guarantee the student was actually within the class. For these reasons the decision to use estimated attendance rates was taken.

Within any research attempting to investigate reasons and predictors for non-attendance there is the potential for a sample selection bias, as only students who were

conscientious, motivated, and paid attention to announcements and email requests would have completed the survey. It is possible that only those students with better levels of attendance participated within this research. It is likely that there are non-attending students who did not participate and the results should be interpreted within this light. Nonetheless, steps were carried out in order to reduce this effect, for example, participants knew they were completely anonymous, and they were asked to complete the questionnaire online. Students already identifiable as having poor attendance were also specifically targeted with emails asking for their participation within the study. Further research adopting a qualitative approach where students known as poor attenders are contacted individually and asked to participate, perhaps in a phone interview, could address some of these issues and gain a deeper understanding of the reasons why they choose not to attend. Research concerning student engagement has often fixated on the 'authentic' student; those who are young, full-time, and live on campus, whereas little focus has been given to those outside of these parameters (Thomas, 2015). Further research with non-traditional students could be essential in fully understanding reasons for non-attendance.

Other potentially important variables were not included within this study. Factors such as academic achievement and self-esteem are potentially important and could be included within future research. Furthermore, assessing whether attendance policies had any effect on actual attendance levels and therefore assessment grades would be an interesting idea (Golding, 2009).

The decision to include fewer variables within the present study was made to give the questionnaire clarity and brevity and therefore maximize participation. Selecting variables such as belongingness and perceived confidence was important as less has been said about how these variables impact on attendance. Further research

might be particularly beneficial within the area of belonging in a university context, as it was a salient predictor in both lecture and seminar models. Research has shown the benefits of belonging for black and minority ethnic (BME), low income, and first generation students (Eddy and Hogan, 2014; Jehangir, 2010; Luthar and Becker, 2002), and more could be investigated around belongingness and attendance issues.

Implications

The implications for this study are wide and far reaching. A powerful predictor of non-attendance across both lectures and seminars within university students from various courses was lack of belonging to the university. Research has suggested that making students feel part of a community and engaging with them from the beginning of their course is vitally important for student engagement (Cahill et al., 2014), and it is likely the effects would be similar on student attendance. The Higher Education Academy (Thomas, 2012) has made some suggestions to universities that would improve belonging, including developing meaningful interactions between staff and students and having supportive peer relationships. More specifically, adopting the Personal and Academic Support System (PASS), which involves group tutorials aiming to build good working relationships between students and staff might be particularly effective. This program has already proven successful in improving retention and progression and perhaps it could also have an influence upon attendance.

An important demographic predictor of both lecture and seminar non-attendance was working more hours in paid employment. Students whose attendance is impacted by this variable should be particularly targeted, as they are the group who are most at risk of non-attendance. Ideas to support this group of students could be similar to those suggested by Webb, Christian and Armitage, (2007) who asked

participants to plan their own intervention for attending class. Students developed ideas like meet with friends before a lecture, stay in the night before a class, and set an alarm, all of which could aid effective time management.

From the 17 different reasons assessed within the study three (coursework deadlines, mental health issues and social life commitments) emerged as predictors of non-attendance to both lectures and seminars. Interventions to reduce the impact that coursework deadlines have upon lecture non-attendance should be implemented, such as the course designer thinking carefully about workload (Bowyer, 2012). Co-ordination of assignments within a course, and especially for students studying across Faculties is particularly important. Mental health is of increasing concern amongst university students and it is perhaps unsurprising that it can be linked with non-attendance. Universities need to be better at noticing and supporting students with mental health issues, an intervention such as 'look after your mate' by the mental health charity Student Minds (Student Minds, 2014) could be helpful in this regard. Students who mention that social life commitments negatively impact on their attendance could also be targeted with interventions such as those mentioned above by Webb et al., (2007), again to help manage competing interests.

The present study has highlighted a number of factors that could be targeted specifically by universities in order to help overcome the issues that impact negatively on student attendance and so ultimately benefit students, staff and the university as a whole.

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Table 1. Response and explanatory variables: descriptions, and descriptive statistics.

Study variable	**Description**	**Sample size**	**Descriptive Statistics**
Estimated Lecture Attendance	*Participants estimated their percentage attendance to lectures over the current academic year.*	n = 614	Mean 7.99 Standard Deviation 2.02
Estimated Seminar Attendance	*Participants estimated their percentage attendance to seminars over the current academic year.*	n = 612	Mean 7.23 Standard Deviation 2.53
Year of study	*Participant's current year of study at university (n = 622)*	Foundation year (n = 31) Year 1 (n = 220) Year 2 (n = 180) Year 3 (n = 182)	5.1% 35.9% 29.4% 29.7%
Living Arrangements	*What are the participants term time living arrangements (n = 625)*	With parents/own home (n = 278) Other [1](n = 338)	45.1% 54.9%
Distance from university	*Approximate number of miles students lived from university (n = 582)*	n = 582	Median 3.65 Mean 7.20 Standard Deviation 9.51
Family first to attend university	*Whether participant is first person in immediate family to attend university (n = 627)*	Yes (n = 298) No (n = 320)	48.2% 51.8%
Paid work	*The number of hours per week that the participant spent in paid employment (n = 601)*	n = 601	Median[2] 0 Mean 7.26 Standard Deviation 9.30
Voluntary work	*Whether the participant is involved in regular voluntary work*	Yes (n = 133) No (n = 485)	21.5% 78.5%
Gender	*Male or Female (n= 615)*	Male (n = 133) Female (n = 482)	21.6% 78.4%
Perceived confidence	*Participants mean score on PCS for learning (n = 557)*	n = 557	Mean 5.27 Standard Deviation 1.20
Sense of belongingness	*Participants mean score on the PSSM (n = 600)*	n = 600	Mean 3.52 Standard Deviation 0.56

[1] Includes private rented accommodation, living in university accommodation and house shares
[2] Median values are used for continuous variables that are not normally distributed

Table 2: Mean and Standard deviation participants' reasons for non-attendance to lectures and seminars.

	Lectures		***Seminars***	
Reasons for not-attending	***M (SD)***	***N***	***M (SD)***	***N***
1. Course work deadline	3.49 (1.41)	554	3.56 (1.39)	537
2. Lack of enjoyment	3.16 (1.35)	553	3.20 (1.34)	535
3. Illness	3.15 (1.37)	558	3.14 (1.36)	540
4. Perceptions about teaching	3.14 (1.33)	554	3.22 (1.38)	536
5. Not linked to an assessment	3.01 (1.31)	557	3.12 (1.35)	538
6. Inconvenient time of session	2.92 (1.30)	554	2.99 (1.32)	535
7. Other appointments to attend	2.90 (1.39)	555	2.86 (1.38)	537
8. Resources available online	2.79 (1.31)	553	2.71 (1.31)	537
9. Travel issues	2.65 (1.44)	558	2.51 (1.40)	541
10. Family commitments	2.54 (1.38)	559	2.52 (1.36)	542
11. Dislike lecturing style	2.44 (1.27)	555	2.53 (1.34)	536
12. Poor time management	2.32 (1.25)	552	2.29 (1.25)	534
13. Social life commitments	2.16 (1.15)	556	2.22 (1.19)	534
14. Difficult materials	2.13 (1.08)	557	2.14 (1.10)	538
15. Mental Health issues	1.91 (1.30)	552	1.89 (1.29)	534
16. Accommodation problems	1.86 (1.09)	556	1.85 (1.08)	538
17. Too many students	1.79 (1.02)	550	1.90 (1.13)	534

Table 3: Multiple regression models showing significant predictors of estimated Lecture attendance

	Model 2: Estimated Seminar Attendance		
	Model 1: Estimated Lecture Attendance		
Predictor variables	**B**	**SE B**	**β**
Constant	*9.437*	*.869*	
Year of study	*-.152*	*.091*	*-.068*
Living Arrangements (Home =0, Other =1)	*-.612*	*.187*	*-.153***
Distance from university	*-.013*	*.010*	*-.060*
Family first to attend university (Yes =0, No =1)	*.084*	*.154*	*.021*
Paid work	*-.018*	*.008*	*-.084**
Voluntary work (Yes =0, No =1)	*-.038*	*.193*	*-.008*
Gender (Male =0, female =1)	*.209*	*.193*	*.044*
Perceived confidence	*.025*	*.081*	*.015*
Sense of belongingness	*.674*	*.175*	*.187****
Course work deadline	*-.227*	*.065*	*-.161****
Not linked to assessment	*-.037*	*.071*	*-.024*
Difficult materials	*-.167*	*.088*	*-.090*
Perceptions about teaching	*.126*	*.075*	*.084*
Dislike lecturing style	*-.091*	*.076*	*-.058*
Too many students	*.051*	*.087*	*.026*
Inconvenient time of session	*-.072*	*.069*	*-.048*
Resources available online	*-.103*	*.069*	*-.068*
Lack of enjoyment	*.104*	*.071*	*.070*
Social life commitments	*-.272*	*.076*	*-.158****
Poor time management	*-.103*	*.074*	*-.065*
Mental health issues	*-.205*	*.070*	*-.135***
Illness	*-.206*	*.067*	*-.141***
Other appointments to attend	*.028*	*.064*	*.019*
Travel issues	*-.143*	*.065*	*-.105**
Family commitments	*.051*	*.065*	*.035*
Accommodation problems	*-.056*	*.081*	*-.030*
Total R^2	*.379*		
F	*F (26, 438) = 10.260, p < .001*		

**= p < .05; ** = p < .01; *** = p < .001.*

Table 4: Multiple regression models showing significant predictors of estimated Seminar attendance

Predictor variables	**B**	**SE B**	**β**
Constant	*9.942*	*1.135*	
Year of study	*-476*	*.120*	*-.166****
Living Arrangements (Home =0, Other =1)	*.372*	*.245*	*-.072*
Distance from university	*-.003*	*.013*	*-.010*
Family first to attend university (Yes =0, No =1)	*.428*	*.202*	*.084**
Paid work	*-.039*	*.011*	*-.148****
Voluntary work (Yes =0, No =1)	*.086*	*.247*	*.014*
Gender (Male =0, female =1)	*-.095*	*.253*	*-.016*
Perceived confidence	*-.006*	*.107*	*-.003*
Sense of belongingness	*.771*	*.230*	*.166****
Course work deadline	*-.353*	*.087*	*-.193****
Not linked to assessment	*-.325*	*.090*	*-.172****
Difficult materials	*.069*	*.113*	*.030*
Perceptions about teaching	*.008*	*.092*	*.004*
Dislike lecturing style	*-.157*	*.094*	*-.082*
Too many students	*-.151*	*.099*	*-.069*
Inconvenient time of session	*-.112*	*.087*	*-.059*
Resources available online	*-.039*	*.089*	*-.020*
Lack of enjoyment	*.166*	*.095*	*.086*
Social life commitments	*-.229*	*.095*	*-.106**
Poor time management	*-.140*	*.094*	*-.070*
Mental health issues	*.203*	*.092*	*-.103**
Illness	*-.055*	*.088*	*-.029*
Other appointments to attend	*-.065*	*.087*	*-.035*
Travel issues	*-.093*	*.087*	*-.052*
Family commitments	*.149*	*.086*	*.079*
Accommodation problems	*-.106*	*.105*	*-.045*
Total R^2	*.387*		
F	*F (26, 417) = 10.110, p < .001*		

* = *p < .05*; ** = *p < .01*; *** = *p < .001*.