PREDICTING RETENTION, UNDERSTANDING ATTRITION: A PROSPECTIVE STUDY OF FOUNDATION YEAR STUDENTS

Lalage D Sanders*, BSc(Hons), PhD, C. Psychol, FHEA, CSci.
Telephone :+44 2920 416892,   email lsanders@cardiffmet.ac.uk

Annette P Daly PhD BEd BSSc CPsychol FHEA
Telephone:+44 2920 417228,   email apdaly@cardiffmet.ac.uk

Department of Applied Psychology, Cardiff School of Health Sciences, Cardiff Metropolitan University , Llandaff Campus, Western Avenue, Cardiff CF5 2YB, UK
FAX: +44 2920 416985

Katherine Fitzgerald, DClinPsy MSc BSc
Nephrology and Transplant Clinical Psychology Dept, Pentwyn Dialysis Unit, Unit C3, Avenue Industrial Estate, Croescardan Close, Cardiff CF23 8HE, UK
Telephone +44 2920 748455   email Katherine.Fitzgerald@wales.nhs.uk

*Corresponding author

Research was based at Cardiff Metropolitan University and data were collected there

and from the University of the West of England

ABSTRACT

The aim of this study was to evaluate two psychometric tools for identifying students at risk of failing to progress from a Foundation Year (FY) programme, a preparatory programme for those without the qualifications to enrol directly on to an undergraduate degree. Students from four FY programmes across two UK universities were invited to complete the survey at the start of the academic year (Time-1) and again towards the end of the FY (Time-2). The survey comprised the Academic Behaviour Confidence and Performance Expectation Ladder scales designed to measure students' expectations of their academic performance and achievement.   From a total of 198 participants (85% of enrolments), 90 completed measures at both points. End of year examining board outcomes were matched to the survey data. Time 1 data showed that two subscales of the confidence measure, Grades and Attendance, were indicative of subsequent progression issues. At Time 2, diminishing expectations were evident amongst those who subsequently failed to progress indicating a process of disengagement.   Therefore these measures could be used to identify students who might benefit from targeted interventions to help uncertain new entrants access the benefits that Higher Education can provide.

Key words: Retention   Academic Confidence, Foundation Year,   Doubting.

INTRODUCTION

The aim of this study was to ascertain whether it is possible to use psychometric measures with students on a Foundation Year (FY) programme at the start of the academic year to identify those at risk of non-completion. FY programmes can play

a significant part in the Widening Participation (WP) agenda, by providing a route into Higher Education (HE) for those without the entry qualifications for an undergraduate degree. Issues of student retention are as important for these programmes as for degree level study (van Stolk *et al.*, 2007; Rose-Adams, 2012; Welsh Assembly Government Report, 2009; Yorke and Thomas, 2003). Increasing student diversity without concomitant increases in withdrawal rates is a familiar challenge across the sector. At a time of limited resources, early identification of those at risk of withdrawing can enable focussed interventions designed to improve retention. This paper will begin by considering the relationship between WP agenda and retention and will then outline the role of FY programmes in this context before reviewing approaches to predicting academic outcome.

WP strategies are part of governmental policy of the last 15 years in the UK (e.g. Aim Higher project funded by the Higher Education Funding Council for England, 2011) and elsewhere (van Stolk *et al.,* 2007). It remains a central plank of the strategy for the sector as identified in the recent government consultative paper on a Teaching Excellence Framework for Higher Education in the UK (Department of Business, Innovation and Skills, 2015). These initiatives acknowledge that, traditionally, participation in HE has not been evenly distributed across the population. This needs addressing as the benefits of Higher Education are not restricted to financial advantage alone (e.g. Savage and Norton, 2012). The aim of WP strategies is to open HE to non-traditional students, either as defined by socio-economic group or by age, as part of the Lifelong Learning agenda. 'Lifelong Learning' refers to the notion that 'deliberate learning can and should occur throughout a person's lifetime' (Knapper and Cropley, 2000, p1.), including but not

restricted to continual professional development. Promotion of the Lifelong Learning agenda is based partly on rapidly developing technology requiring frequent updating of skills and abilities throughout a professional career, and partly on the need to ensure that our increasingly aging population is kept active and engaged throughout the senior years.

WP initiatives are only successful if the students complete their programme of study as early withdrawal is a waste of resources for both the individual student (Wilcox *et al.,* 2005), and the institution (Rhodes and Nevill, 2004). For the individual, the cost of withdrawal is likely to include not only a substantial financial debt for the student loan incurred but also damage to the self-esteem and worsened future prospects of employment (Rose-Adams, 2012;Torenbeek *et al.,* 2010)*.* Poor retention rates adversely affect not only the finances of an institution but also its reputation as attrition negatively impacts on its position in university league tables. Van Stolk *et al.* (2007), in their report for The National Audit Office, described an international comparison of student retention concluding that the UK's performance was reasonable but that there were lessons to be learned at both governmental and institutional level. Hence the Higher Education Funding Council for England developed a project, 'back on course' (sic) from 2009 to 2012 in response to increasing concern about the number of students leaving university early (Rose-Adams 2012).

Any attempt to understand attrition should take into account that transition to university has been acknowledged as challenging (Christie *et al.*, 2008; Hockings*et al.*, 2007; Hulme and De Wilde, 2015; Leese, 2010; Mercer, 2004; Tinto, 2008). The nature of the transition to degree level study means that appropriate levels of support

are crucial (Rickinson and Rutherford, 1996; Thomas, 2002).   Adapting to a different style of learning and teaching can present difficulties for new undergraduates who may also be experiencing simultaneous changes in their social and domestic circumstances (Stanley and Manthorpe, 2002). Social integration into the new environment is equally central to success (York, 2000, Christie *et al.,* 2008). Although non-completion rate in the UK is approximately 8% for full-time students (much higher for part-time students) it has been estimated that serious consideration of early withdrawal, or doubting may affect over 40% of undergraduates (Foster *et al.* 2012; Thomas, 2012; Xuereb, 2014). Support from friends and families may influence such doubters to stay the course (Xuereb, 2014). This may be one reason why many who began by doubting their ability to complete the course do not subsequently withdraw, although it has been established that those who doubt are more likely to leave their course than those who do not (Foster *et al.*, 2012). Thus, identifying doubters at an early stage would be desirable.

Missing teaching sessions is one manifestation of doubt; when this is detected early, supportive intervention can be effective in preventing withdrawal (Bevitt *et al.,* 2010). Whilst lack of attendance can be an indicator of disengagement (Woodfield *et al.*, 2006; McCluckie, 2012), it is also likely that absence will fuel disengagement resulting in a downward spiral of alienation from HE. Thus the efficacy of interventions could be improved if doubt or the beginnings of disengagement could be predicted prior to evident absence from the classroom.

A range of demographic elements has been identified as key indicators of those at risk of withdrawal (Davies and Elias, 2003; Rose-Adams, 2013; Welsh Assembly Government, 2009; Woodfield *et al.*, 2006). Importantly there is now a growing body

5

of research that links factors directly related to the WP agenda as being associated with withdrawal. No family history of university education is one such factor (Cook, 2004; Rose-Adams, 2013). Being an older student is another factor (Yorke and Longden; 2008, Rose-Adams, 2013) as is coming from a lower socio-economic background (Roberts, 2011). All three groups are targeted by WP interventions. An examination of a data set of 70% of the student population in HE in the UK 2006-12 concluded that non-traditional students are more likely to leave university early, and proportionately more likely to leave from more selective institutions, (Rose- Adams, 2013). Thus a number of factors have been identified as affecting student retention, many of which are directly relevant to the WP agenda illustrating the tension between these two sector-wide issues.

In this context Foundation Year (FY) programmes can be seen to be addressing both sector drivers: WP and retention. These programmes are intended for those without the formal entry qualifications for their chosen degree. Therefore although many FY programmes pre-date the inception of the WP agenda, their recruitment practices, by definition, target non-traditional students.   Furthermore many universities also offer international FY programmes which are specifically targeted at students coming to the UK to study. What all these programmes have in common is that they are designed to prepare students for, and ease the transition to, degree level studying and as such can be considered transitional courses (Rienties, Kaper *et al.* 2012). To set these programmes in context: within the UK's Framework for Higher Education Qualifications (FHEQ), the FY is considered to be Level 3, the same as A levels. This means that these programmes lie between undergraduate degrees, which

comprise Levels 4-6, and the General Certificate of Secondary Education (undertaken during compulsory education) which spans Levels 1 and 2.

FY programmes prepare students for degree level study by equipping them with the necessary academic skills, for example: academic writing, reviewing literature, undertaking critical analysis. These programmes have the additional benefit of improving students' confidence in their identity as learners and providing them with a taste of what is to come. Typically, these programmes focus on both study skills *per se* and material relevant to the degree(s) onto which they feed. For these reasons, FY programmes can also be used these days as part of the WP agenda. Moreover as preparation for degree level study they are designed to tackle many of the issues that influence retention. At the time of data collection there were over 700 FY programmes available on the UK's Universities and Colleges Admissions Service (UCAS) website, but the lack of consensus on terminology makes negotiating this information challenging (Sanders and Daly, 2013). Programmes are sometimes subsumed into a 4 year degree programme and others listed as stand-alone programmes. This may be because these programmes tend to be tailor-made for their host institution rather than a formal part of the FHEQ. Moreover across the UK the fees charged for FY show considerable variation. Where the FY leads directly onto a specified undergraduate pathway, the annual fee is usually set at the same level as the subsequent degree programme. Thus those undertaking a FY are paying 4 years of fees instead of 3 for the undergraduate programme.

Applicants for the FY fall largely into three main areas: those who did not achieve the required grades for their chosen degree programme; mature learners returning to study; and those who need specific skills for their chosen degree (e.g., laboratory

skills). In each of these cases, the student would not be permitted onto the first year of their preferred undergraduate programme, meaning that without the FY the candidate would have little or no chance of undertaking a degree. A key feature of these programmes is that there is a guaranteed place on a degree programme on successful completion of the FY. FY programmes are designed for non-traditional students and those with poorer prior educational attainment, two groups clearly identified as being at greater risk of leaving university early (Rose-Adams, 2012). For such non-traditional students there are two key factors that contribute to persistence with studies: achieving good grades and confidence about graduating (Markle, 2015). The task of FY programmes is to help students who progress to degree level to achieve these objectives through both the necessary learning skills and through early experience of the university learning context to give them confidence in their own ability. Such a start to an academic career is designed to prevent students experiencing the disadvantage of being under qualified compared to their peers (Heil *et al.*, 2014). Successful completion of a FY also ensures that students are adequately prepared for undergraduate study, based on three criteria for successful academic engagement identified by Thomas (2012): supporting peer relations, enabling meaningful interactions with staff and developing knowledge, identity and confidence. Indeed Sanders and Daly (2013) demonstrated that for FY graduates the chance of success on the first year of their degree programme was comparable to that of their direct entry counterparts.

However, unsuccessful completion or early withdrawal from a FY impacts negatively on an institution's retention rate in the same way as from an undergraduate degree. It is also likely to be as detrimental for the individual as at any point in university level

study. Arguably FY students could be considered more vulnerable to doubt and insecurity than those on degrees given that, by definition, they have been identified and categorised as ineligible for direct undergraduate enrolment. Therefore early identification of student uncertainty, of doubting about their chosen course (Foster *et al.* 2012; Thomas, 2012; Xuereb, 2014) could enable targetted support at this level just as it can for undergraduates. Tackling that process of predicting academic outcome has been tried in a number of different ways.

The extensive research into the background characteristics of non-completers when used to predict outcome can also result in inappropriate labelling of specific sub-groups within the population. Fowler and Norrie (2009) produced a Risk Tool based on the views of a large sample of staff and students about key background factors that may indicate a student is at risk of withdrawing from a nursing and midwifery programme. They argued that if this worked for early identification of those likely to withdraw, resources could be targeted appropriately. Whilst the aim is laudable this approach could risk fuelling uncertainty in students whose profile coincides with the risk factors.

Alternative approaches to identifying those at risk of non-completion include analysis of Learning Management Systems data and the deployment of psychometric tools. The move towards blended learning with the use of virtual learning environments has provided a novel means for predicting academic outcome. Learning Management Systems allow institutions to harvest data on student use and uptake of resources which has been shown to correlate with final grade (Macfadyen and Dawson, 2010). Exploring these data for online MBAs, Arbaugh (2014) found that teacher presence and student presence were key indicators of both perceived learning and delivery

medium satisfaction, whilst Tempelaar *et al.,* (2015) found that monitoring computer-assisted formative assessments was the best predictor of underperforming students. Such technologically sophisticated systems provide a useful mechanism for monitoring student engagement and progress. However, in order for these to be effective the student needs to have been enrolled upon the course for long enough to provide meaningful data.

Psychometrics have been evaluated to predict programme outcome with varying degrees of success. Woodfield *et al.* (2006) argue that the focus of attention has been on cognitive ability and personality variables, where the five-factor model dominated. More recently a belief in free will has been identified as correlating with better academic performance (Feldman *et al.*, 2016). Identifying characteristic traits of the individual as an approach has many of the disadvantages of the demographic approach of Fowler and Norrie (2009). A focus on in-built characteristics, be they academic ability, personality or family data, provides limited options as these are traits that are unlikely to be amendable to change and could be argued to be a step towards blaming or labelling the learner, rather than looking to institutional practices.

There are more specific psychometric measures relating to education. The Student Adaptation to College Questionnaire (Baker and Siryk, 1989) has been shown to be an effective measure of adjustment to an academic environment across a large number of studies (Credé and Niehorster, 2012; Rienties, Beausaert *et al.* 2012) although its factor structure appears to vary with populations (Feldt *et al.* 2011). However, as the title implies, the focus of this instrument is the process of adapting to college life, and therefore, similarly to the Learning Management Systems, requires the student to have some experience of the college before data can be

collected. Both types of instrument are sensitive to detecting disengagement and yet herein lies the difficulty. If the student has begun to disengage, then any intervention needs to be able to reverse such a trend, potentially a formidable task.   Being able to predict at the start of a programme who is likely to disengage and therefore be at risk of withdrawal could enable focussed support at an early stage before disengagement has become manifest.

A psychometric tactic that addresses both the problems of timing and of inbuilt traits is to measure academic motivation and achievement emotion as predictors of performance. This overcomes the need for some of the academic year to pass before data collection as these instruments can be deployed at the point of enrolment. Moreover motivation and achievement emotion may be more amenable to enhancement than underlying personality traits. One such instrument is the Motivated Strategies for Learning Questionnaire (MSLQ; Pintrich, Smith, Garcia and McKeachie, 1991 cited in Duncan and McKeachie, 2005). This scale has been used effectively over the last 25 years and has demonstrated a clear link between academic outcome and both motivation and cognitive style. In a similar vein the Academic Motivation Scale (Vallerand *et al.* 1992) has also been shown to be effective across a range of studies although its psychometric properties show some variation with self-determination theory on which it was based (e.g. Cockley, 2000; Fairchild *et al.* 2005). The Achievement Emotions Questionnaire (AEQ) has also been shown to be both valid and reliable (Pekrun *et al.* 2011) with a high degree of measurement invariance across different cultures (Frenzel *et al.* 2007). Whilst the AEQ could theoretically be used at the point of enrolment, as the items focus on emotions related to studying, its efficacy as a predictor at this stage would depend

on the similarity between past academic experience and that into which the student is then entering.

An alternative approach to understanding the variation in student response to Higher Education is to explore confidence with the Academic Behavioural Confidence Scale (ABC). Unlike personality traits, student confidence is known to be highly malleable (Zorkina and Nalbone, 2003) which suggests that interventions could effect improvements. Like much of the MSLQ the ABC is based in the theory and principles of self-efficacy (Bandura, 2006) but differs in emphasis. Self-efficacy can be defined as the conviction that one can successfully execute the behaviour required to produce outcomes (Bandura, 1977). Where the MSLQ focusses on the achieving the outcomes, ABC focusses instead on the behaviour itself. The items that make up the ABC relate to specific behaviours associated with being enrolled on an undergraduate programme which reflects Bandura's (2006) argument that any attempt to measure self-efficacy should be situation-specific. The ABC's emphasis on future anticipated behaviours makes it particularly suitable for use right at the start of a college career, before any decision about successful adjustment can be made. The future-focus is designed to pick up students' doubts about their ability to engage and perform the behaviours that may be required for a successful outcome. Previous research with the ABC has shown that this confidence varies between discipline groups (e.g. Sanders and Sander, 2007; Matoti and Jonquiera, 2009; Matoti, 2011) and that it can predict end of semester outcomes (e.g. Nicholson *et al.* 2013). (For a detailed discussion of its psychometric properties see Sander and Sanders, 2009).

In combination with the ABC, this study used the Performance Expectation Ladder (PEL). Like the original 1990 version of the MSLQ, the PEL requires the student to make an explicit comparison between their own performance and that of others in their class. Thus the PEL is based on social comparison theory, in particular, the principles of an external frame of reference as described by Skaalvik and Skaalvik (2002). They proposed that this is:

> *a process by which a student compares his or her performance with the perceived performance of another which may be a comparison group or a comparison person (Skaalvik and Skaalvik, 2002, p. 234).*

Like the ABC, the PEL is future-focussed, requiring students to identify their expected grades at designated future time points and used in this manner has shown differences in the expectations of male and female students (Sanders *et al.*, 2009).

The aim of the current study was to determine whether it is possible to use these measures of student confidence and expected performance at the start of the year to predict end-of-year academic outcome. The implication of this is not to find blame within the student but rather to help institutions identify and therefore act to support doubting students who want to benefit from HE.

The ABC with its 17 items is a more concise scale than others and, combined with the 4 question PEL, if effective as predictors, has the potential to be deployed across cohorts in a timely fashion meaning early intervention could then be targeted appropriately.

The first objective of the study was to detect initial uncertainty, that is: testing whether those students who subsequently prove to be successful (i.e. those who pass the programme at the first examination board) can be distinguished from their peers (i.e. those who do not) by their ABC and PEL scores. The second objective was to understand attrition, i.e. to see what changes were apparent in ABC and PEL scores for these two groups of students' six months' experience of the programme and its associated assessment and feedback.

METHOD

SAMPLE

The study was undertaken in two post '92 [1] universities. This part of the sector traditionally recruits more WP students than the pre-'92 institutions. Participants were recruited across four programmes: Science FY and Health Professions FY in an English university; Health Science FY and Social Science FY at a Welsh university. All four programmes were pathways to specified undergraduate degrees and all four based their learning and teaching strategies on a blended combination of traditional methods supported by Virtual Learning Environments. The study was approved by the Ethics Committees in each institution. Data collection, collation and storage were in line with the institutions' ethical frameworks.

---

[1] Universities in England and Wales can be distinguished by the date of their creation, before or after the Further and Higher Education Act 1992 which enabled polytechnics and colleges of Higher Education to apply for university status.

For three of these four FY programmes, the proportion of school-leavers to mature students was approximately 4:1, but on the Health Professions programme, this proportion was reversed.   Whilst mature applicants were normally considered on an individual basis, the requirement for admission for school-leavers on all but the Health Professions FY used the number of points from Advanced Level ('A' Level) examinations, as defined by the University and Colleges Admission Service in the UK[2]. The points tariff required for admission ranged from 80 -120 (equivalent to two A levels at E or D grade). In contrast the degrees onto which the programmes led had entry requirements typically of 300 points (equivalent to three B grades). Thus there was a substantial gap in entry requirements between these FY programmes and the pathways onto which they led.

INSTRUMENTS

This quantitative survey comprised two questionnaires designed to measure students' expectations of future academic behaviour and achievement (Sander and Sanders, 2009). The first was the Academic Behavioural Confidence Scale (ABC) in its shortened form which comprises 17 statements and yields four subscales measuring confidence about Grades, Verbalising, Attendance and Studying (Appendix 1). The stem question reads: 'How confident are you that you will be able to:' and the response options are a 5 point scale where 1 represents 'Not at all confident' to 5, 'Very confident'; the score is taken as the mean rating for each subscale.

---

[2] The tariff points for A level grades are: A=120, B=100, C=80, D=60, E=40.

The second was the Performance Expectation Ladder (PEL), where participants estimate their own expected marks on a graphic ladder representing the range of possible marks, with a putative 'national average' highlighted at 57%. In this version the task was to estimate the overall course mark likely to be achieved by the respondent and by their year group as a whole at two future time points: the end of their foundation year and the point of degree graduation. The task thus requires a visual comparison about the position of the self in relation to the year group.

A third section of the survey was a brief background questionnaire comprising 10 closed questions seeking information on: qualifications, dyslexia, dependents, age and employment. All these demographic factors were proposed to be associated with increased risk of dropping out for nursing and midwifery students (Fowler and Norrie, 2009).

PROCEDURE

There were three phases to data collection; in the first, participants were invited to complete the survey at the start of the academic year in the autumn term (Time 1). The research assistant (KF) invited students to participate at the start of a lecture, distributing questionnaires to those willing to complete them. The second phase was when this survey was repeated in late spring towards the end of the Foundation Year (Time 2). The demographic questions were answered only on the first occasion that a student contributed data. All recruitment of participants and collection of data were completed by the research assistant who was clearly separate from the teaching staff. The final phase was the collection of progression data from the end of year examining boards.

METHOD OF ANALYSIS

The participants were categorised into two discrete groups by the outcome from the end of programme summer examining boards: those who passed and those who did not. This latter group included those that had withdrawn, as well as those with mitigating circumstances that prevented them passing, or possibly from taking the examinations, and those who failed, some of whom will have subsequently passed at the September Retrieval examining boards. It is acknowledged that this group is heterogeneous; however what they had in common was that they were distinguished from their peers who were able to progress after the first attempt at assessments. As such it is a very crude distinction and one that is likely to underestimate the differences between students who will eventually progress and those who will not. However, examining board data available for analysis did not allow a more nuanced approach. In the interests of clarity, hereinafter, these two groups are referred to by the labels: Successful and Unsuccessful whilst acknowledging that these names mask the heterogeneity of the second group. Moreover the use of the term in this context relates only to the outcome at the summer examining board and is not to be considered a judgement of the overall outcome from the programme. All analyses of the measures taken during the year were retrospective, as these two groups could only be identified at the end of the year.

ABC and PEL data were entered onto IBM SPSS v22. For the PEL Differential scores were calculated by subtracting the expected score for the Year Group from their own expected score so that a negative score indicated expecting to achieve lower marks than their peers. Mixed Anovas were used for the ABC and for PEL

data separately in order to monitor the impact on confidence and expectations in turn. The between subjects factor was examining board outcome and within subject factors were time and the psychometric instrument. To test the predictive value of the ABC, PEL and demographic data logistic regression was used, (Brace *et al.*, 2012).

RESULTS

At the start of the academic year in which data were collected, the four programmes comprised a total 232 students. Table 1 shows this broken down by programme and by participation in the study. Three of the cohorts are of comparable size with the Health Professions programme being markedly smaller. There were 198 survey participants in total representing 85% of enrolments; of these, 90 completed surveys at both T1 and T2.

TABLE 1 ABOUT HERE

There were five participants whose outcome data were unavailable. It is evident that, for the year in question, the pass rate at the summer examining board in the English university was notably higher than in the Welsh one. It should be noted that for all four programmes the summer examining board did not define progression rates as the Retrieval Boards in September provided a second opportunity for students. The highest pass rate belongs to its Science programme which also has the most stringent entry qualifications (120 A level points) whilst the second highest, Health Professions programme, comprised the greatest proportion of mature students and had no formal entry tariff. The Science programme also had the lowest

participation rate in this study with many students preferring not to complete the survey.

DEMOGRAPHIC DATA

The mean ages of the two outcome groups were very similar (Successful 21.05; Unsuccessful 21.49) although the standard deviation for the Unsuccessful group was greater indicating greater variability (Successful 4.2; Unsuccessful 7.5). There was little difference in the mean A level tariff scores (Successful 166; Unsuccessful 171), with similar standard deviations (Successful 90.2; Unsuccessful 78.5).

The demographic variables that appear in the Fowler and Norrie (2009) Risk Tool are given in Table 2. Only 25 students had not achieved the minimum of five Grade Cs at GCSE and they did appear to have a slightly lower progression rate than the sample as a whole which was 56%. There is no evidence that having dyslexia is associated with poorer progression rates, nor for employment status. Both of these run counter to the Fowler and Norrie (2009) prediction. In line with the Risk Tool prediction, having children seems to indicate poorer outcome but possession of A levels also did not appear associated with Success.

TABLE 2 ABOUT HERE

PREDICTING RETENTION

The four sub-scales of the ABC were tested for internal reliability using Cronbach alpha; all four had satisfactory levels (alpha >.07; see Table 3 column 1). The main aim of the study was to ascertain whether either of the two questionnaire measures,

Academic Behaviour Confidence (ABC) and Performance Expectation Ladder (PEL), administered at the start of the year, could forecast academic outcome. The first objective was to see whether initial uncertainty detected by the psychometrics was susequently associated with less successful outcome at the examining board.

Table 3 shows the mean and standard deviation on the four subscales of the ABC for the two groups.

TABLE 3 ABOUT HERE

For Verbalising there was no evident difference between the two groups. For the first subscale, Grades, the difference between the two groups suggested that the Unsuccessful students initially expected higher marks than the Successful. In contrast the differences in the Studying and Attendance subscales were the opposite, with the Unsuccessful appearing less confident about their ability to study and to attend even at this early point in their programme.

Table 3 also presents the means and standard deviations for the PEL Differntial (own expected marks minus year group expected marks). It is noteworthy that the mean score for the Successful group for both future mark points, the end of the FY and at degree graduation, are positive, indicating that they tend to expect to do better than their year group. This contrasts with the Unsuccessful group whose mean scores are both negative suggesting that they tend to expect to do worse than their year group.

A logistic regression was performed on the T1 data with examining board outcome as the DV and the psychometric instruments and demographic data as predictor

variables. The psychometric instruments comprised the four subscales of the ABC and the Differntials from the PEL for FY and at Graduation. The demographic data comprised age, and the following categorical variables: programme (non-binary therefore dummy variables were deployed), having A levels, having 5 or more C grade GCSEs, having children, having part-time work and dyslexia status. A total of 199 cases were analysed and the full model significantly predicted outcome (ominbus chi-square = 35.576, df 15, p=.002) The model accounted for between 23.8% and 31.9% of the variance in outcome with 64.9% of the Unsuccessful, and 70.3% of the Successful students accurately predicted; overall predictions were 67.9% accurate. Table 4 lists the predictor variables with their co-efficients, the Wald statistic, degrees of freedom and probability.

TABLE 4 ABOUT HERE

It is evident from this that the only two variables that are statistically significant are ABC Grades, which negatively predicts success, and ABC Attendance which predicts it positively. (Although Programme 1 is significant, the overall effect of Programme is not). The value of the exponentiated coefficient or odds ratio indicates that every one unit increase in Grades is associated with a decrease in the odds of.21 (95% CI 0.067 and 0.622). In the case of Attendance each unit increase is associated with an increase in odds rato of 3.318 (95% CI 1.46 and 7.52).

T1 Post Hoc

In order to ascertain whether the psychometrics were testing anything beyond compliance with the invitation to participate in the research, the participation rate at

T1 was compared for the two groups but there was no statistical association (chi square = 2.62, df 1, p=.106).

UNDERSTANDING ATTRITION

The second objective, examining changes over time for each group, the Successful and Unsuccessful, was intended to shed light on the mechanisms of attrition. These data were collected after approximately six months' experience of the programme and its associated assessment and feedback.

The mean scores for the ABC, by outcome group over time are given in Figure 1.

FIGURE 1 ABOUT HERE

From this it is evident that the group means diverged over time, with the Unsuccessful group showing marked drop in confidence at T2. For the Successful group the Grades and Verbalising show a slight increase, Studying a slight drop and Attendance a more sustained drop. The Anova for the ABC scores employed a 2 * 2 * 4 design, (outcome * time * subscale). Mauchley's test of sphericity was significant (p<.001) so the Greenhouse-Geisser epsilon statistic is reported. There was a significant main effect of time ($F_{1,86}$ =16.323, p<.001, η^2 =.16) and also a time by outcome interaction ($F_{1,88}$ =11.011, p=.001, η^2 =.11). There was a significant main effect of sub-scale ($F_{2.373, 208.832}$ = 63.475, p<.001, η^2 =.42) although this would be expected given that the four subscales are measuring different constructs. There was no interaction between subscale and outcome ($F_{2.373, 208.832}$ = 0.392, p=.711, η^2 =.00). nor between time and subscale ($F_{2.729, 240.136}$ = 2.199, p=.095, η^2 =.02) nor between time, subscale and outcome ($F_{2.729, 240.136}$ = 0.978, p=.398, η^2 =.01) The

main effect of outcome (Successful or Unsuccessful) was significant ($F_{1,88}$ = 4.346, p=.040, η^2 =.05). Thus the Anova results show that there is a signficant difference in the ABC scores of the two groups, accounting for 16% of the variance, that the scores change over time accounting for 11% of the variance, and change differently over time for the two groups accounting for 5% of the variance..

The Differential scores from the PEL (own expected marks minus year group expected marks) are plotted in Figure 2

FIGURE 2 ABOUT HERE

From this there appear to be group differences at T1 and again the groups diverge at T2 with the Successful showing a rise in expectations and the Unsuccessful showing a drop. The Anova for the ABC scores employed a 2 * 2 * 2 design (outcome * time * future mark point, i.e. Foundation Year and Graduation). There was no significant main effect of time ($F_{1,68}$ =0.837, p=.364, η^2 =.01) but there was a significant time by outcome interaction ($F_{1,68}$ =10.353, p=.002, η^2 =.13). There was no significant main effect of future mark point ($F_{1,68}$= 1.695, p=.197, η^2 =.02) but there was a significant interaction between future mark point and outcome ($F_{1,68}$ = 6.384, p=.014, η^2 =.09). There was no signficant interaction between time and future mark point ($F_{1,68}$ = 2.067, p=.155, η^2 =.03) but there was a signficant interaction between time, future mark point and outcome ($F_{1,68}$ = 4.221, p=.044, η^2 =.06). The main effect of outcome (Successful or Unsuccessful) was significant ($F_{1,68}$ = 10.209, p=.002, η^2 =.13). Thus the Anova results show that there is a signficant difference in the PEL scores of the two groups accounting for 13% of the variance; that the scores change differently over time for the two groups accounting for 13% of the variance; and that

the two groups respond differently for the two different future mark points and that this different response is also affected by time, accounting for 6% of the variance.

T2 Post Hoc

It should be noted however that the number in the Unsuccessful group who completed this component of the survey was small (n=38). This led to a second post hoc analysis to see whether participation at T2 was related to outcome. This was significant, more of the Successful group participating in the study at this juncture (chi square= 16.07, df 1, p<.001). This is likely to be linked to a Differntial drop in attendance as there was no apparent rise in the proportion of those present at data collection points who were unwilling to participate.

DISCUSSION

The main aim of this study was to see whether it was possible to use these two psychometric tools to predict retention by identifying those at risk of not progressing. Whilst it was evident that the Performance Expectation Ladder (PEL) did not provide any such data at the start of the year, two subscales of the Academic Behavioural Confidence (ABC) scale, Grades and Attendance, appeared to be indicative of subsequent problems. Grades negatively predicted success which would appear to suggest that students who are expecting high marks may disengage when those expectations, for whatever reason, are not fulfilled. It would seem that even as early as the first week of the autumn term, there is some link between an uncertainty about being able to sustain a regular pattern of attendance with subsequent progression issues. This is perhaps similar to the notion of 'doubting' (Foster *et al.*

2012; Xuereb, 2014). Not all students who doubt withdraw, but those who do withdraw first experience doubts. These findings suggest that these sub-scales, at least when administered as part of the ABC, may allow us to identify those at risk of withdrawal, enabling the use of targeted interventions such as those used by Bevitt *et al.,* (2010) or Harley *et al.* (2007). The model indicated this would be successful in predicting the two groups approximately two thirds of the time. Interventions providing additional support targeted at early doubters may be more acceptable and potentially more effective than targeting groups by demographic characteristics.

The second main aim of the study was to understand how those at risk of withdrawing develop over the academic year, as the engagement of students is known to be crucial to successful outcomes (Kinderman, 2007; Kraus and Coates, 2008; Thomas and Hanson, 2014). Moreover, engagement can help students to develop their student identity and their sense of themselves as learners in this new context (Hockings *et al.*, 2007) becoming part of a new community of practice (Christie *et al.,* 2008; Harris and Shelswell, 2005). The key to success for a student may be in staying engaged (Troisi, 2014), which highlights the perseverance required to succeed. Thus tracking students over time shows how the experience of the programme itself may effect changes in the individual responses. The ABC data collected around Easter time show that, for the Unsuccessful group, confidence appears to be diminishing, with all four scales showing decrements, and significant differences emerging between the groups over time. It would seem that this group are experiencing a negative impact on their self-efficacy as the programme draws to its end, maybe losing or perhaps never acquiring the sense of belonging that is critical to engagement (Thomas, 2012). As lecturers we need to consider how we

can work to instill that sense of belonging in all students. This finding is in contrast to the Successful group who show no decrease in confidence on Verbalising, Studying or Grades. They do however demonstrate a drop in confidence about attending, but the mean for this group remains above that for the other group at this time point, and indeed the gap has increased. This drop in confidence for the sample as a whole is an issue of concern for us, as lecturers, when even the succeeding students appear less confident about attending. Are we failing to engage them? Or is it simply that they have discovered that if they do miss a class they can catch up at a later stage. This is an area that would be benefit from a qualitative approach to understand what is happening.

In addition to the deterioration in the Unsuccessful group's confidence scores, they are also showing a drop in their expected marks, whilst the expectations of the Successful group have risen. This difference is most pronounced when anticipating their FY marks but is still evident when they were thinking ahead to the point of graduation. The slight improvement in their expectations for that future mark point may suggest that whilst this group's immediate expectations have lowered through the year they are still relatively positive about the longer term. Indeed the end goal, wanting a good job or just simply to graduate, can be effective in preventing doubters from dropping out (Xuereb, 2014).

Taking an overview of these results it would seem that initially there was a small distinguishing feature between the groups confined to the Grades and Attendance subscales; yet as the year progresses the groups diverge, as evidenced by the Unsuccessful group's drop in confidence and lowered expected marks. At this point, this group is exhibiting a number of characteristics that indicate a lowering of self-

efficacy and possibly self-esteem. Would an intervention at this stage be too late to reverse the negative tendencies identified and to help students back on track? A more intensive approach such as Student Management Teams (Troisi, 2014) might be effective.

Collecting data in this context is predicated on the assumption that the volunteer participants are representative of the population from which they are drawn. In this study there were effectively two reasons why any one student did not participate, the first being that they were absent at the point of recruitment to the study. This explanation applies largely to T2 where the Unsuccessful group were particularly under-represented. Thus we might deduce that this group's lack of confidence in their own attendance was justified, or perhaps a self-fulfilling prophecy. It also means that the difference that appears evident in the psychometric data may in fact underestimate a real difference between the two groups, if the non-attenders were in fact the least engaged students. The other reason was, of course, those who declined the invitation to participate. There were relatively few of these in three of the four programmes; however the Health Science group in England were the exception: at T1 where nearly all the 81 enrolled students were present at data collection, only 33 agreed to take part. This opposes the idea that there may be some underlying characteristic that inclines students to participate in both research and their programme, for this was also the programme with the highest pass-rate.

There were differences between the programmes in some of the responses but the aim of this study was not to explore programme differences. We know that FY programmes vary in their entry requirements, the types of candidate they recruit and the degrees onto which they feed, so differences in themselves are not the focus of

this paper. Rather, it is that despite these differences, the variation in student type and in qualifications, some telling patterns still emerged.

The data shed light on other issues that are pertinent to our understanding of the student experience of transition to university. Looking at the marks expected by the sample as a whole at both time points there is considerable optimism overall. In fact, at the start of the year only 29 participants (15%) expected marks below that identified as the putative 'national average' and this expectation was in no way predictive of their examining board outcome as 14 of these subsequently passed. It is possible that this marker point on the ladder was ignored by participants in completing the task, but this seems unlikely given the graphic nature of the ladder itself and the clear shading of the 57% marker. It is more probable that participants were demonstrating a level of unrealistic optimism that has been noted before with this task (Sander and Sanders, 2003). A study on the neuroscience of unrealistic optimism has argued that it is tied to diminished neural coding of unpleasant messages (Sharot *et al.*, 2011). This would go some way to explaining the perplexing finding that students lacking the qualifications for direct entry degree level indicate that they expect that they and their peers will do better than the national average throughout their degree programme. Another contributing factor could be that the marking scales in schools and colleges uses the higher ranges of the percentages more readily than is the custom in the Higher Education sector in the UK. For example a mark in the 80s might be considered 'good' in schools whilst it is considered 'excellent' in university.   Those used to expecting higher marks routinely would be likely to regard the 57% marker as an 'unpleasant message' and therefore ignore it. It may be that we, as lecturers, are so familiar with our standard marking

scheme that we fail to appreciate that, for our students, it is quite different from anything they may have experienced previously, almost a different marking currency.

Whatever the mechanism, one potential side effect of such high expectations is the inevitable disappointment that will arise once students begin to receive marks for their assessments which are likely to fall far short of their expectations, and highly likely, then, to affect their confidence, as demonstrated by the negative relationship between the Grades subscale and outcome. Providing students with marking schemes may not be sufficient to effect a change in their expectations. We need to manage these expectations sensitively in their early days at university and particularly before assignments are returned in order to ameliorate the potentially damaging disappointment our new students may experience.

A second general issue is that participants almost universally expected their marks to improve over the course of their academic career. Whilst unrealistic optimism may contribute to this, the need for an expectancy of success as part of motivation has been understood since Tolman's work in the 1930s (cited in Davey, 2004) and critically applied to the field of education (e.g. Wigfield and Eccles, 2000). Therefore it is not surprising that a prerequisite for embarking on four years of study, and all the resources and commitment that this entails, would be at least an expectation of success. Moreover, perceived threats to that expectation would fuel uncertainty and consequently rock the foundation of commitment and motivation necessary to succeed. In this context success may be aptly considered 'having a degree' rather becoming learners (Molesworth *et al.*, 2009), a focus on product rather than process.

A drop in ABC scores over time has been found previously (Sander and Sanders, 2003). It was suggested that rather than confidence affecting performance, perhaps performance affects confidence. If that were the case, then the drops in all four subscales shown by the Unsuccessful group might be seen as indicative of a growing doubt about whether they have the appropriate academic skills for the programme, thereby performance begins affecting confidence. However, this interpretation is too simplistic in light of the fact that this group were still expecting improved marks at the point of graduation; they had not, therefore, identified themselves as ineligible for a degree.

A major limitation of this study is that the outcome measure, progression at the summer examining board, is a very crude indicator of retention. It has been acknowledged that the so-called Unsuccessful group will have included those with mitigating circumstances, i.e. those who may have had good reason for not taking or passing assessments at the first attempt, those who subsequently pass assessments at the Retrieval Examination Board and who may go on to succeed at higher levels. Unfortunately it was not possible to obtain data that distinguished those with mitigating circumstances from those who failed as the only outcome measure available across all four programmes simply distinguished progressing students from others. Nonetheless, despite this heterogeneity, there was a significant difference between the two groups. The mechanism here is unclear; were they unable to commit to attending and this prevented their success? Or were those who lacked the necessary motivation to succeed showing symptoms of this at the start? This could be unpicked through a focussed qualitative approach. Whatever the mechanism, if this is a robust finding, then it offers a means of identifying

students at risk of failure and thereby providing an opportunity for action to reduce attrition.

There are also many limitations to this type of approach to understanding the student experience. Psychometric tests will always have their limits and a true picture of the subjective experience requires a qualitative rather than a quantitative approach. Such an approach allows us to explore this multi-faceted experience, the role of adaptability, willingness to access support, response to feedback, and perhaps reveal a real and complex account of the students' experience.   However, there is yet value in a quantitative approach if it helps us understand how disengagement progresses, and perhaps more importantly allows us to identify those who may benefit from extra support before patterns of behaviour have become too entrenched to change.

In conclusion, we know that engagement is a prerequisite of success (Trowler, 2010) that attendance and engagement are closely linked. These data tell us that doubt surrounding future attendance, and unrealistically high expectations about marks can be identified early and appears to be associated with later progression problems. The ABC and PEL may be used as a means of identifying students at risk of leaving early; from these data the ABC scores may be an effective predictor at the start of their programme whilst both measures appear diagnostic later in the year. The extent to which similar patterns may occur with first year undergraduates in the UK is currently under investigation with a larger sample; whether this pattern is restricted to the UK would be worthy of research.

REFERENCES

Arbaugh, J. B. (2014). System, scholar, or students? Which most influences online

MBA course effectiveness? Journal of Computer Assisted Learning, 30(4), 349-

362. doi: 10.1111/jcal.12048.

Baker, R. W., and Siryk, B. (1989). SACQ Student Adaptation to College

Questionnaire (2nd edition ed.). Los Angeles: Western Psychological Services.

Bandura, A. (1977). Self-efficacy: towards a unifying theory of behavioural change.

Psychological Review, 84, 191-215.

Bandura, A. (2006).Guide for constructing self-efficacy scales. Retrieved 15 January

2016 from: www.uky.edu/~eushe2/Bandura/Bandura**Guide**2006.pdf.

Bevitt, D., Baldwin, C., and Calvert, J. (2010). Intervening early: attendance and

performance monitoring as a trigger for first year support in the Biosciences.

Bioscience Education, 15. Retrieved 13 March 2015 from:

http://dx.doi.org/10.3108/beej.15.4.

Brace, N., Kemp, R. and Snelgar, R. (2012). *SPSS for Psychologists: A Guide To

Data Analysis*, 5th Edition. London: Palgrave.

Christie, H., Tett, L., Cree, V.E., Hounsell, J. and McCune, V. (2008). A real

rollercoaster of confidence and emotions: learning to be a university student.

Studies in Higher Education, 33, 567-581.

Cockley, K.O. (2000) Examining the validity of the Academic Motivation Scale by

   comparing scale construction to self-determination theory. *Psychological*

   Reports, 86(2):560-4.

Cook, T. (2004). Heading them off at the pass: predicting retention problems. *Higher*

   Education Academy Report.

Credé, M., and Niehorster, S. (2012). Adjustment to College as Measured by the

   Student Adaptation to College Questionnaire: A Quantitative Review of its

   Structure and Relationships with Correlates and Consequences. Educational

   Psychology Review, 24(1), 133-165. doi: 10.1007/s10648-011-9184-5.

Davey, G. (Ed). (2004). *Complete Psychology*. London: Hodder and Stoughton.

Davies, R. and Elias, P. (2003). Dropping out: a study of early leavers from Higher

   Education. *Department of Education and Skills Research Report 386.*

Department of Business, Innovation and Skills (2015). *Fulfilling our potential:*

   teaching excellence, social mobility and student choice. Green paper Cm 9141

   London: The Stationery Office. Retrieved 29 January 2016 from

   http://www.gov.uk/government/consultations/higher-education-teaching-

   excellence-social-mobility-and-student-choice.

Duncan, T. G., and McKeachie, W. J. (2005). The Making of the Motivated

   Strategies for Learning Questionnaire. *Educational Psychologist*, 40, 117-128.

Fairchild, A.J.. Horst, S.J., Finney, S.J. and Barron. K.E (2005) Evaluating existing

   and new validity evidence for the Academic Motivation Scale. *Contemporary*

   Educational Psychology, 30(3), 331-358.

Feldman, G., Chandrashekar, S.P. and Wong, K.F.E. (2016). The freedom to excel: belief in free will predicts better academic performance. *Personality and Individual Differences, 90, 377-383.*

Feldt, R.C., Graham, M. and Dew, D. (2011). *Measuring adjustment to college: construct validity of the Student Adaptation to College Questionnaire.* Measurement and Evaluation in Counseling and Development*, 44(2), 92-104.*

Foster, E., Lawther, S., Keenan, C., Bates, N., Colley, B. and Lefever, R. (2012) The HERE Project 2008-2011, Final Report.. York: Higher Education Academy. Retrieved 24 August 2015 from https://www.heacademy.ac.uk/resource/here-project.

Fowler, J. and Norrie, P. (2009). Development of an attrition risk prediction tool*. British Journal of Nursing, 18,* 1194-1200.

Frenzel, A.C., Thrash, T.M., Pekrun, R. and Goetz, T (2007) Achievement Emotions in Germany and China: A Cross-Cultural Validation of the Academic Emotions Questionnaire—Mathematics. *Journal of Cross-Cultural Psychology,* 38(3), 302-309.

Harley, D., Winn, S., Pemberton. S., and Wilcox, P. (2007) Using texts to support students' transition to university. *Innovations in Education and Teaching International,* 44(3), 229-241.

Harris, S.R. and Shelswell, N. (2005). In*: Beyond communities of practice: language, power and social context.* D. Barton, and K. Tusting, (Eds). Cambridge: Cambridge University Press.

Heil, S., Reisel, L., and Attewell, P. (2014). College Selectivity and Degree Completion. *American Educational Research Journal*, *51*, 913-935.

Higher Education Funding Council for England. (2011). *Aim higher*. Retrieved 18 November, 2013 from http://www.hefce.ac.uk/whatwedo/wp/recentwork/aimhigher/.

Hockings, C., Cooke, S. and Bowl, M. (2007). 'Academic engagement' within a widening participation context – a 3D analysis. *Teaching in Higher Education, 12*, 721-733.

Hulme, J. and de Wilde, J. (2015). Tackling transition in STEM disciplines: supporting the Science, Technology, Engineering and Mathematics student journey into Higher Education in England and Wales. *Higher Education Academy*.

Kinderman, T.A. (2007). Effects of naturally existing peer groups on changes in academic engagement in a cohort of sixth graders. *Child Development, 78*, 1186-1203.

Knapper, C. and Cropley, A. (2000). *Lifelong Learning in Higher Education.* Third Edition. London: Kogan- Page.

Kraus, K-L. and Coates, H. (2008). Students' engagement in first-year university. *Assessment and Evaluation in Higher Education, 33,* 493-505.

Leese, M. (2010). Bridging the gap: supporting student transition into Higher Education. *Journal of Further and Higher Education, 34*, 239-251.

Macfadyen, L. P., and Dawson, S. (2010). Mining LMS data to develop an "early warning system" for educators: A proof of concept. Computers & Education, 54(2), 588-599. doi: 10.1016/j.compedu.2009.09.008.

Markle, G. (2015) Factors influencing persistence among non-traditional university students, Adult Education Quarterly, DOI: 10.1177/0741713615583085.

Matoti, S. (2011).Measuring the Academic Self-Efficacy of Students at a South African Higher Education Institution. *Journal of Psychology in Africa*. 21(1), 151-154.

Matoti, S.N. and Jonquiera, K.E. (2009).Assessing the academic behavioural confidence (ABC) of first-year students at the Central University of Technology, Free State. *Interim Interdisciplinary Journal* 8(2) 41-60.

McCluckie, B. (2012). Identifying students 'at risk' of withdrawal using ROC analysis of attendance data. *Journal of Further and Higher Education*, *38*, 523-535.

Mercer, J. (2004). *Mature Students: a misunderstood population?* Regional Futures: Formal and Informal Learning Perspectives, Universities Association of Continuing Education Annual Conference, Centre for Lifelong Learning, University of Glamorgan, 5th-7th April 2004.

Molesworth, M., Nixon, E. and Scullion, R. (2009). Having, being and Higher Education: the marketisation of the university and the transformation of the student into consumer. *Teaching in Higher Education 1*, 277-287.

Nicholson, L., Putwain, D., Connors, E. and Hornby-Atkinson, P. (2013).The key to successful achievement as an undergraduate student: confidence and realistic expectations? Studies in Higher Education, 38 (2). pp. 285-298.

Pekrun, R., Goetz, T., Frenzel, A. C., Barchfeld, P., and Perry, R. P. (2011). Measuring emotions in students' learning and performance: The Achievement Emotions Questionnaire (AEQ). Contemporary educational psychology, 36(1), 36-48. doi: 10.1016/j.cedpsych.2010.10.002.

Rhodes, C. and Nevill, A. (2004). Academic and social integration in Higher Education: a survey of satisfaction and dissatisfaction within a first-year education studies cohort at a new university. *Journal of Further and Higher Education, 28*, 179-193.

Rickinson, B. and Rutherford, D. (1996). Systematic monitoring of the adjustment to university of undergraduates: a strategy for reducing withdrawal rates. *British Journal of Guidance and Counselling, 24*, 213-225.

Rienties, B., Beausaert, S., Grohnert, T., Niemantsverdriet, S., and Kommers, P. (2012). Understanding academic performance of international students: the role of ethnicity, academic and social integration. Higher Education, 63(6), 685-700. doi: 10.1007/s10734-011-9468-1.

Rienties, B., Kaper, W., Struyven, K., Tempelaar, D. T., Van Gastel, L., Vrancken, S.,... Virgailaite-Meckauskaite, E. (2012). A review of the role of Information Communication Technology and course design in transitional education practices. Interactive Learning Environments, 20(6), 563-581. doi: 10.1080/10494820.2010.542757.

Roberts, S. (2011) Traditional practice for non-traditional students? Examining the
role of pedagogy in higer education retention. *Journal of Further and Higher
Education,* 35(2), 183-199.

Rose-Adams, J. (2012). Leaving university early: a research report from the back on
course project, **back on** course/ The Open University: Milton Keynes.

Rose-Adams, J. (2013). Leaving university early: exploring relationships between
institution type, student withdrawal and implications for social mobility*.
Widening Participation and Lifelong Learning,* 15(2) 96-112.

Sander, P. and Sanders, L., (2003). Measuring confidence in academic study: A
summary report. *Electronic Journal of Research in Educational Psychology and
Psychopedagogy*, *1*, 1-17. Retrieved April, 2013 from
http://www.investigacionpsicopedagogica.org/revista/articulos/1/english/Art_1_1
.pdf.

Sander, P. and Sanders, L. (2009). Measuring academic behavioural confidence: the
ABC scale revisited. *Studies in Higher Education, 34*, 19-35.

Sanders, L. and Daly, A. (2012-13) Building a Successful Foundation? The Role of
Foundation Year Courses in Preparing Students for Their Degree. Widening
Participation and Life Long Learning: Special Issue: What Works? 14, 42-56.

Sanders, L. and Sander, P (2007) Academic Behavioural Confidence: A comparison
of medical and psychology students. Electronic Journal of research in
Educational Psychology and Psychopedagogy 13(4) 633-649.

http://www.investigacion-psicopedagogica.org/revista/articulos/13/english/Art_13_150.pdf.

Sanders, L., Sander, P. and Mercer, J..(2009) Rogue Males? Approaches To Study And Academic Performance Of Male Psychology Students. Psychology Teaching Review, 15(1), 3-17.

Savage, J. and Norton, A. (2012) *Nonfinancial benefits of Higher Education.* Carlton, Victoria: Grattan Institute.

Sharot, T., Korn, C., and Dolan, R. (2011). How unrealistic optimism is maintained in the face of reality. *Nature Neuroscience, 14*, 1475-1479.

Skaalvik, E.M. and Skaalvik, S. (2002). Internal and external frames of reference for academic self-concept. *Educational Psychologist*, 37, 233-244.

Stanley, N. and Manthorpe, J. (2002). *Responding to students' mental health needs: problems and responses*. London: Jessica Kingsley Publishers.

Tempelaar, D. T., Rienties, B., and Giesbers, B. (2015). In search for the most informative data for feedback generation: Learning Analytics in a data-rich context. Computers in Human Behavior, 47, 157-167. doi: 10.1016/j.chb.2014.05.038.

Thomas, B. G. and Hanson, J. (2014). Developing social integration to enhance student retention and success in Higher Education: the GROW@BU initiative. *Widening Participation and Lifelong Learning. 12*, 58-70.

Thomas, L. (2002). Student retention in Higher Education: the role of institutional habitus. *Journal of Education Policy, 17*, 423–442.

Thomas, L. (2012). Building student engagement and belonging in Higher Education at a time of change: a summary of the findings and recommendations from the What Works? Student Retention and Success Programme. York: Higher Education Academy. Retrieved 24 August 2015 from: https://www.heacademy.ac.uk/sites/default/files/what_works_summary_report_1.pdf.

Tinto, V. (2008, November). *Access without support is not opportunity*. Paper presented at the 36th Annual Institute for Chief Academic Officers. The Council of Independent Colleges, Seattle, Washington.

Torenbeek, M., Jansen, E. and Hofman, A. (2010).The effects of the fit between secondary and university education on the first-year student achievement. *Studies in Higher Education,* 35(6), 659-675.

Troisi, J.D. (2014) Making the grade and staying engaged: the influence of student management teams on student classroom outcomes. *Teaching of Psychology*, 41(2) 99-103.

Trowler, V. (2010). *Student engagement literature review*. York, UK: Higher Education Academy.

Vallerand, R. J., Pelletier, L. G., Blais, M. R., Brière, N. M., Senécal, C., and Vallières, E. F. (1992). The academic motivation scale: A measure of intrinsic, extrinsic, and amotivation in education. Educational and Psychological Measurement, 52, 1003–1017.

van Stolk, C., Tiessen, J., Clift, J. and Levitt, R. (2007). *Staying the course: The retention of students in Higher Education.* London: National Audit Office.

Welsh Assembly Government Report. (2009). *Student Withdrawal from Higher Education.* Prepared on behalf of the Department for Children Education Lifelong Learning and Skills. Cardiff: Welsh Assembly Government.

Wigfield, A. and Eccles, J.S. (2000). Expectancy–Value Theory of Achievement Motivation. *Contemporary Educational Psychology, 25*, 68–81.

Wilcox, P., Winn, S. and Fyvie-Gauld, M. (2005). 'It was nothing to do with the university; it was just the people': the role of social support in the first year experience of Higher Education. *Studies in Higher Education, 30*, 707-722.

Woodfield, R., Jessop, D. and McMillan, L. (2006).Gender differences in undergraduate attendance rates. *Studies in Higher Education,* 31, 1-22.

Xuereb, S. (2014.) Why students consider terminating their studies and what convinces them to stay. *Active Learning in Higher Education, 15*, 145-156.

Yorke, M. and Longden, B. (2008) The first year experience of Higher Education in the UK. Final Report. York: Higher Education Academy. https://www.heacademy.ac.uk/sites/default/files/fyefinalreport_0.pdf.

Yorke, M. and Thomas, L. (2003). Improving the retention of students from lower socio-economic groups. *Journal of Higher Education Policy and Management, 25*, 63–74.

Yorke, M. (2000). The quality of student experience. What can institutions learn from data relating to non-completion? *Quality in Higher Education, 6*, 61-75.

Zorkina, Y. and Nalbone, D.P. (2003). Effect of induced level of confidence on college students' performance on a cognitive test. *Current Research In Social*

Psychology, *8*. Retrieved 20 April, 2013 from

http://www.uiowa.edu/~grpproc/crisp/crisp.8.11.html.

APPENDIX I

ITEMS AND SUBSCALES OF THE ACADEMIC BEHAVIOURAL CONFIDENCE SCALE

Grades

[2] Produce your best work under examination conditions

[7] Attain good grades in your work

[10] Produce coursework at the required standard.

[11] Write in an appropriate academic style.

[13] Pass assessments at the first attempt.

[16] Produce your best work in coursework assignments

Verbalising

[3] Respond to questions asked by a lecturer in front of a full lecture theatre

[5] Give a presentation to a small group of fellow students

[8] Engage in profitable academic debate with your peers

[9] Ask lecturers questions about the material they are teaching, during a lecture

Studying

[1] Study effectively on your own in independent / private study

[4] Manage your work load to meet coursework deadlines

[14] Plan appropriate revision schedules.

[15] Remain adequately motivated throughout.

Attendance

[6] Attend most taught sessions

[12] Be on time for lectures.

[17] Attend tutorials

TABLES

Table 1 Student numbers by programme

	Welsh University		England University		Total
	Health Sciences	Social Sciences	Health Professions	Science	
Enrolled Sept	71	62	18	81	232
Survey T1	61 (86%)	54 (87%)	16 (89%)	33 (41%)	164 (71%)
Survey T2	41 (58%)	21 (34%)	14 (78%)	49 (60%)	125 (54%)
Participate at either time	64 (90%)	57 (92%)	18 (100%)	59 (73%)	198 (85%)
Survey T1**and** T2	38 (54%)	18 (29%)	12 (67%)	22 (27%)	90 (39%)
Passed at summer board	32	23	11	63	129
Summer pass rate	45%	37%	61%	78%	56%

Percentages calculated from September enrolment figures

Table 2 Demographic Details by Examining Board Outcome

		Fowler and Norrie (2009) Risk	Total N	Success rate
GCSE Results	Less than 5 at Grade C	√	25	52%
Having children		√	10	30%
Do you have A levels?	No		39	51%
Dyslexia status	Diagnosed as dyslexic	√	12	67%
Employment status	Employed	√	65	63%

Table 3 Psychometric Scores at T1 – means (SD)

Instrument	Successful (N=84)	Unsuccessful (N=76)
ABC Subscale (Cronbach's)		
Grades: (.832)	**3.70** (0.60)	**3.78** (0.56)
Verbalising (.854)	**3.34** (0.79)	**3.35** (0.75)
Studying (.811)	**3.72** (0.59)	**3.68** (0.66)
Attendance (.758)	**4.5** (0.58)	**4.24** (0.58)
PEL Differential		
Foundation Year	**1.03** (7.60)	**-0.47** 6.58)
Graduation	**0.64** (8.20)	**-0.64** (7.56)

Table 4 Logistic Regression analysis summary for T1 variables predicting

Examination Board Outcome

	β	S.E.	Wald	Df	p	Exp(β)
T1 ABC Grades	**-1.587**	**.567**	**7.829**	**1**	**.005**	**.205**
T1 ABC Studying	-.015	.359	.002	1	.968	.985
T1 ABC Verbalising	.129	.502	.065	1	.798	1.137
T1 ABC Attendance	**1.199**	**.418**	**8.247**	**1**	**.004**	**3.318**
T1 PEL FY Differential	.042	.061	.469	1	.493	1.042
T1 PEL Graduation Differential	.046	.050	.843	1	.359	1.047
Age	.055	.062	.785	1	.376	1.056
Programme			6.140	3	.105	
Programme (1)	-1.589	.718	4.893	1	.027	.204
Programme (2)	-1.451	.747	3.773	1	.052	.234
Programme (3)	-.576	.947	.371	1	.543	.562
A levels	.032	.554	.003	1	.954	1.033
GCSE grades	-.321	.776	.171	1	.679	.725
Employment	-.851	.466	3.326	1	.068	.427
Children	3.064	1.651	3.441	1	.064	21.404
Dyslexia status	-.633	1.261	.252	1	.616	.531
Constant	-.903	3.464	.068	1	.794	.405

Figure 1 Academic Behavioural Confidence Subscales over time by outcome group
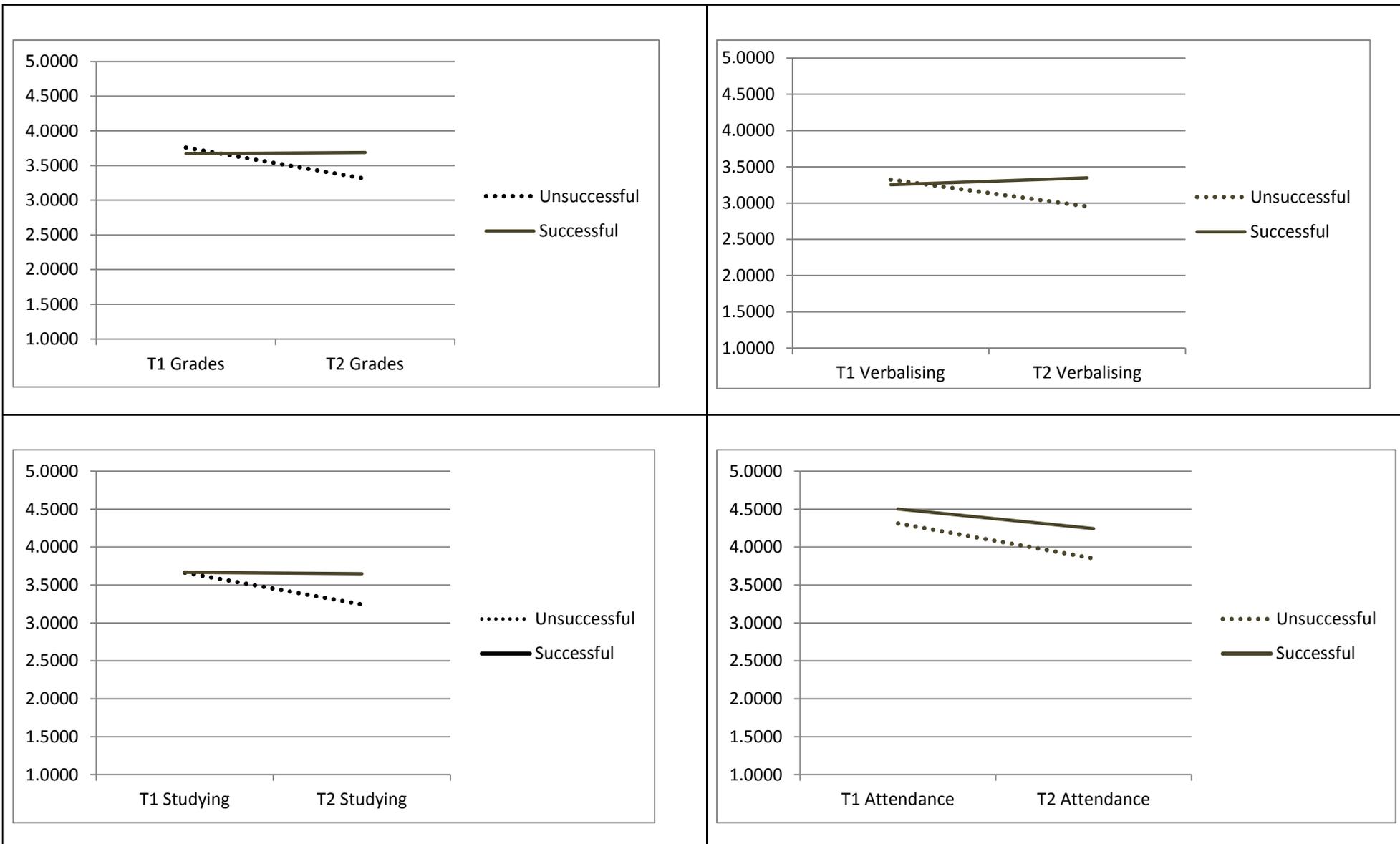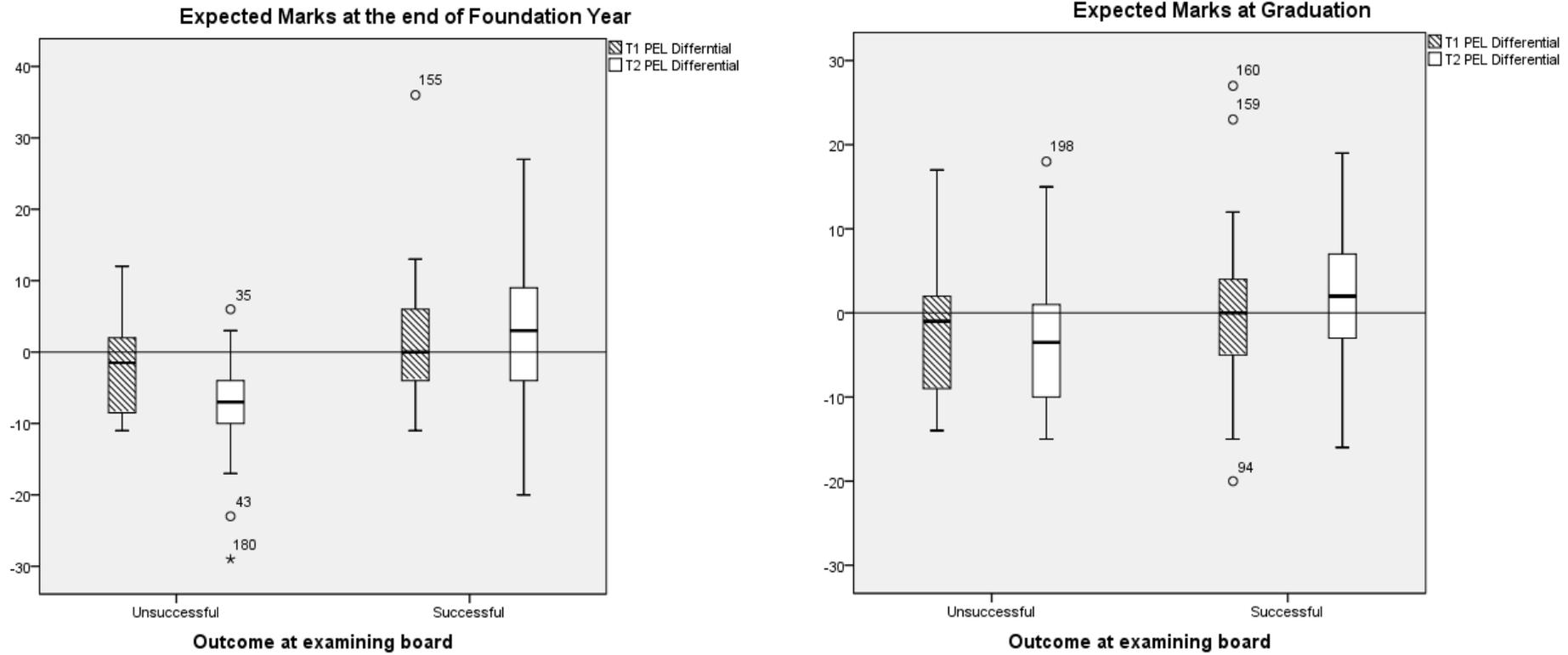
Figure 2 Expected marks for Foundation Year and at Graduation over time by outcome group

Horizontal reference lines indicates there is no difference between their own expected mark and that they expected for year group