The use of biodata as a predictor of student discontinuation: phase one.

Alexandra Dobson¹, Ron Fisher² and Mark Francis¹

¹Newport Business School, University of Wales, Newport, Allt-yr-yn Campus, Allt-yr-yn Avenue, Newport, NP20 5DA. Email: alexandra.dobson@newport.ac.uk
²Griffith Business School, Griffith University, Gold Coast campus, Qld 4222 Australia

Abstract

This paper reports on the early stages of research intended to add to the body of knowledge on why first-year students discontinue their studies prematurely. The project is cross-institutional, involving researchers from the Business School at Griffith University in Australia and from Newport Business School. In this study the use of biodata and situational judgement indices will be used to attempt to assist in identifying students at risk of withdrawal. The research is a mixed methods approach, where a qualitative stage informs the development of a quantitative stage and the focus of this paper is to consider that first qualitative stage. In both institutions this stage involves interviewing staff and students to build a list of concepts arising from the phenomena in interview transcripts, (a grounded theory approach) which will then be used to inform the quantitative use of biodata and situational judgement tests. Some 20 to 30 recorded interviews in each institution will be carried out in the first stage and the data will be analysed using both manual analysis and NVivo. Once analysis is complete, data from both institutions will be compared to highlight both similarities and differences. The goal is to develop an assessment tool that will assist in identifying students at risk of discontinuing studies prematurely. By identifying students at risk early in their university life a number of interventions can be introduced at key points to improve retention. Biodata has been shown to be an effective tool in predicting and interpreting human behaviour and has been used widely in screening for employment but is less familiar in education settings.

Introduction and Background

The stimulus for this research came from discussions around issues relating to retention generally between researchers from Newport Business School, University of Wales and the Business School, at Griffith University, Gold Coast, Australia. Clearly discontinuation of studies and the outcomes flowing from that are generally perceived to be negative for both the individual and the institution. However, some research (e.g. Parry, 2002; Charlton et al. 2006) takes a contrary viewpoint. Parry (2002: 17) argues that ‘…failing can be a positive outcome. Sometimes withdrawal, drop-out or failure to complete courses represents successful personal choices rather than failures of the student of the system’. Charlton et al. (2006) also take the view that students leaving to take up suitable employment can be seen as a positive outcome. Following those preliminary discussions, it was felt that an interesting and useful international co-research project could be mounted where researchers could collaborate with one another to construct an assessment tool and test it, with the overarching aim being to assist understanding in the area. The findings of the UK National Audit Office report...
in 2007 illustrate the scale of the problem. The
report found that ‘around 28,000 full-time and
87,000 part-time undergraduates who
commenced their studies in 2004/05 were no
longer in higher education in 2005-06. This
non-continuation was estimated to result in
around £30m in lost revenue, with Russell
Group universities having the highest average
continuation rate and the universities created
since 1992 having the lowest average rate
overall’.

A considerable amount of work had
already been carried out at both institutions
into the complex reasons why students
discontinue their studies (e.g. Ramsay et al.,
2003; Lizzio et al., 2008). At Griffith, student
retention is identified in its strategic and
academic plans as being an area of concern
that has generated a range of organizational
actions. The Academic Plan (Griffith Academic
Plan, 2009) in discussing student retention
argues that at a University-wide level the
need to ‘improve capacity to identify and
support students at risk’ is important. The
importance of improving retention is
reinforced in the targets set in the academic
plan and further articulated in
Succeeding@Griffith (GIHE, 2009). There is no
doubt that retention is important to students
and the University alike, yet beyond the
conventional metrics of retention commonly
used to explain students’ discontinuance from
study there is a lack of clarity in explaining
Griffith’s low standing in student retention in
the overall university sector in Australia.

At Griffith University, the plan to use
Biodata and Situational Judgement Indices
(SJI) was already underway. As a result it was
felt that initially at least researchers at Griffith
would take the lead by working on the
Biodata measures through a process of
interviews leading to development of the
Situational Judgement questionnaires. The
scope of the research is to investigate and
develop instruments that measure, on an
individual student basis, the likelihood of a
student discontinuing university studies
prematurely. Although the study will be
aimed at first-year students it is anticipated
that the measure would be applicable at any
stage of a student’s academic life. The
teaching question to be addressed is: *How can
students at risk of prematurely discontinuing
studies be identified?* The study has clear links
with strategies relating to student retention
more generally.

The research will develop a biographical
(biodata) measure to determine the likelihood
of students discontinuing first-year studies.
Biodata measures are designed to measure
students’ non-cognitive attributes and predict
multiple dimensions of university
performance (Oswald et al., 2004). Biodata has
been shown in numerous studies to be a valid
and reliable means of predicting future
behaviour and performance based on
questions about life and work experiences
(based on the belief that future actions may
frequently be predicted by past behaviours).
Items such as opinions, values, beliefs, and
attitudes are also considered (e.g. questions
about knowledge, ethics, leadership etc).
Biodata questions will be supplemented with
Situational Judgment Inventory (SJI) items,
both of which will invite students to select
from predetermined responses. While biodata
has been used extensively as a selection tool
for employment and in marketing contexts
(McBride et al., 1997; Carraher and Carraher,
2006), it has received limited attention in
educational research. While one study reports
the use of biodata in higher education
(Oswald et al., 2004), there are no reported
studies of its use in the area of student
retention.

The research will advance the body of
knowledge in the areas of student retention
and in the use of Biodata in educational
settings. It also has utility at an organisational
level by providing a means for both
institutions to address the issues of student
retention more effectively. The purpose of the
proposed research is to investigate how first-
year students in the Bachelor of Business
degree (at Griffith), who are likely to
discontinue studies can be identified at an
early stage. At NBS, the same process will be
used to facilitate understanding with regard
to first-year year students on the BA Business
Studies.

Many issues relating to transition are well
known, and a range of actions to reduce
The use of biodata as a predictor of student discontinuation

attrition has been implemented at university-level in both NBS and Griffith. However, the issue of propensity to discontinue first-year university studies from the perspective of students themselves has not been adequately addressed, either at the institutional level or in academic research.

Methodology

In this study a pragmatic approach is proposed (Creswell, 2000; Easterby-Smith et al., 2002) using mixed methods, ensuring that a robust and sound study results through triangulation of source and method (Tashakkori and Teddlie, 1998). Firstly, a qualitative phase will collect data at each university from a range of sources including academic staff to establish a framework for conceptualising what factors lead to students discontinuing university studies prematurely. Successful students (e.g. student in Griffith Honours College) will also be interviewed in order to gain a second-order insight into success and potential failure at university (i.e. from the perspectives of the students themselves). As with all qualitative research the exact number of interviews needed to achieve saturation of concepts cannot be known a priori but it is estimated that up to 25 interviews will be required for each group of interviewees, a total of approximately 50 interviews. Interviews will be audio-recorded and transcribed prior to analysis, which will be undertaken using Leximancer data mining software (Smith, 2004), together with a manual process based on the constant comparison of data (Strauss and Corbin, 1990, 1998). Outputs from the qualitative phase will be used to generate and inform biodata and SJI questionnaires.

The second phase of the research will be the development and application of detailed biodata and SJI questionnaires using outputs from the qualitative phase. Questions will be developed and tested until all themes generated in the qualitative phase have been accounted for. Measurement rubrics to be used with the biodata measure will be developed and tested. Once a questionnaire has been developed and tested it will be trialled on students enrolled in first-year business courses at each university. Data collected from questionnaires will be analysed using the measurement rubrics developed earlier. A similar approach will be adopted at Newport Business School (NBS). The number of students participating in the quantitative stage of the research will be approximately 500 at Griffith and between 50 and 100 at Newport. It should be noted that the research is at an early stage and as a result where appropriate, amendments to the methodology may take place. For instance NBS is significantly smaller than Griffith and it may be judged appropriate to interview smaller numbers of students.

Emerging Themes

Griffith University

Five interviews have been conducted at Griffith. Although in the early stages of analysis four main themes have emerged from the data:

Poor self-regulation. ‘The students who are seriously thinking of deferring or dropping out of university are the ones who quite openly admit to lack of motivation’ and ‘and self regulation. These are the ones who are not spending a lot of time studying as much as their peers’ and ‘personal, social, emotional, and self-regulatory behaviours play a big part’.

Lack of career orientation. The vast majority of students, up into the 80% bracket, are first year students; they know why they came to university and for many of them it is career related and ‘I think it is a risk factor if they don’t have a clear sense of purpose, I think a university has a lot of responsibility to identify those students who are lacking direction and not sure why they are here’ and ‘yes, I think targeted education in the first year can help students to develop that sense [of career orientation]; it is not that they either have it or
they don’t; for many students it is a developmental issue’ and ‘these were large first-year cohorts and I would talk to them about the skills they needed to develop; even if they thought something didn’t seem relevant, or wasn’t particularly exciting’ and ‘I think it is important to address some of those things [career development] head on’.

Loneliness. ‘Loneliness is a major problem particularly for indigenous students’ and ‘not knowing anyone is a major challenge for some students’ and ‘finding their way around the system is a major challenge for some students’.

Lack of social skills. ‘It is a combination of factors, they have got to have at the broadest level the social and cultural capital to be able to engage with university processes which are certainly alien to students, particularly those who are the first in their family to come to university’ and ‘so often we leave that [social capital] out of account when we are looking at skill development; we skip that step often and go straight to the basic skills of numeracy and literacy and academic literacy skills for example; and they are very important’ and ‘you have to look at the student life-cycle and understand where they come from and what skills they may need before they even enter the university. It is a combination of social and cultural skills as well as the academic skills that we so often emphasize; and that involves coming to terms with the ways of knowing, being and doing at a university more broadly; and how you make your way around the system and then with in a discipline or if they are doing multi-disciplinary study it makes it even more complex’ and ‘we expect them to come to terms with the conventions of a discipline or a range of disciplines; that is a critical set of skills that needs to make explicit rather than assumed’.

Newport Business School

At Newport, four interviews had taken place at the time of writing, all of which were amongst academic and administrative staff based in Newport Business School. Some of the emerging themes mirrored early results from Griffith. For instance Poor Self Regulation emerged strongly as a factor in student discontinuation but interestingly one strong theme was the difficulty which some students encounter when attempting to combine work, family life and study.

Poor Self Regulation. “Students who lack motivation are more likely to drop out, especially if they are weaker (in terms of their inherent intellectual capabilities), students to begin with. If they struggle with the some of the work, they require greater commitment. However, balanced against that factor there are students who are not so able but show high degrees of self discipline and motivation and consequently manage to complete their studies. Sometimes students do not appear to have thought carefully enough about the course they have chosen to study or cannot be persuaded to depart from a chosen path even when it becomes clear that they are struggling. For instance a student might choose a pathway that includes accountancy when they do not have the appropriate numerical skills and find it frustrating when they fail to achieve the level of success they had expected. This leads them to becoming disillusioned and then discontinuing. Sometimes this occurs even when they have been counselled not to follow a particular pathway”.

Social Skills. ‘You’re always guaranteed that in those first couple of weeks you’ll lose a couple of students because they find it difficult to make the transition when they move away from home and feel isolated. Sometimes it is surprising however because they can seem to be confident and don’t obviously lack social skills but they find the move from school to University really difficult. It is not always easy to detect who will be find the transition most problematic and this makes assisting those at risk, more difficult.

In terms of working throughout the year those who have less well-developed social skills may find it more difficult but again the picture is complex. Quieter students who are highly motivated tend to stay with us, they
The use of biodata as a predictor of student discontinuation

may not appear to have such well developed social skills but as long as they form friendships, they generally do well. Again there is a strong link with motivation and judging at the outset which students possess motivation is difficult. When someone becomes isolated and particularly when they start to miss classes is often a strong indicator that they may not continue.’

Work/life balance. ‘This can be really difficult for students to juggle because many of our students come from a socio/economic background that means that even when they are full-time, they need to work to support themselves as they pass through university. This can put huge strains on students and unless they are highly motivated can mean that they find the balance too difficult to maintain. In many cases, students can have additional pressures that come from having children or from responsibilities as carers. It is obviously creating an additional burden but we do have many students who manage to combine working and caring for family members and being successful academically. Factors like persistence and determination are important because those individuals who have those personality traits are likely to be able to overcome many of the obstacles.’

Discussion

It is anticipated that the research will generate academic and practical outcomes. From an academic perspective the research will advance knowledge in two ways: 1) by addressing a gap in literature concerning the application of biodata to the area of first-year retention; and 2) by advancing knowledge of first-year student retention issues. The research will also provide practical information that will assist both Griffith and Newport in understanding and managing student attrition effectively and efficiently. Application of the biodata measures early in students’ university lives should identify students at risk of discontinuance of studies thus allowing strategies to be developed, suitable support to be provided and retention to be improved.

The research will also provide opportunities for continuing studies whereby students identified at risk can be monitored throughout their university life. Identifying students at risk of discontinuing studies prematurely offers opportunities for the University to manage student retention proactively.

Conclusion

As the name of this paper implies the research is in its early stages and the authors intend to report their findings where appropriate as the research continues. The international collaborative nature of the research should yield some interesting outcomes and at this early stage there are already similarities between the findings emerging from the interviewees in both Business Schools. There are a number of reasons why the authors view this research as important. By assisting in building a picture of the characteristics that may contribute to student discontinuation the financial cost to both institutions may be lessened over time. The research while specific to Newport and Griffith will clearly have implications for other institutions and in carrying out the research the authors aim to contribute to a debate that lies at the heart of higher education. While the cost in terms of loss of revenue is important, particularly at a time when higher education is under increasing pressure it is the more subtle but pervasive effects for individuals and society that are of most interest. Leaving aside the group of students for whom discontinuation is a positive step toward some alternative pathway, it is likely that for the majority ‘dropping out’ will bring with it long term economic and social consequences that negatively impact on their lives.

REFERENCES

BOURNE, J. 2007. Staying the course: The retention of students in higher education. Report by the National Audit Office,


SMITH, A. 2004. Leximancer Manual (ver 2.0), [PDF File installed with Leximancer program].


