FACTORS INFLUENCING STUDENTS' DECISIONS ABOUT POST-YEAR 10 EDUCATION

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Abstract

This paper reports pilot data from an instrument devised as part of a large ARC funded project that aims, among other things, to investigate factors that influence the decisions of students in rural and/or disadvantaged areas to continue their schooling beyond Year 10. One section of the pilot student questionnaire comprised 42 items designed to reflect dimensions believed to influence these decisions. Participants responded on 5-point Likert scales indicating the extent of their agreement from Strongly Disagree to Strongly Agree with each of the items. We were interested in the extent to which the data supported the theoretical structure that underpinned the structure of the questionnaire and in testing the appropriateness of the language used. The large scale data collection will survey students from Years 5 to 11 with as few adaptations for differences in literacy levels across that range as possible. To this end, the pilot questionnaire was administered to Year 5 (n = 44) and Year 9/10 students (n = 50) with identical wording for both grade levels. A factor analysis of the complete data set (n = 94) provided initial evidence that being happy at school; having family support to continue with education, and appropriate curriculum options and extra-curricular activities, perceiving oneself as a high achiever both in general and in relation to mathematics, having teacher and peer support to continue, being positive about English, planning to be an apprentice, and having a job type in mind are dimensions worthy of further exploration in the larger study.

Introduction

There have for many years been calls to improve the rates at which Australian young people remain engaged with education beyond Year 10. The Business Council of Australia (2003), for example, identified the wastage and the under-employment of individuals with latent potential, and the need for better research to provide a greater understanding of the problem and of what works and does not work in different communities and settings. More recently, initiatives outlined in the 2008 *Review of Australian Higher Education* (Bradley, Noonan, Nugent, & Scales, 2008) and the *National Partnership Agreement on Low Socioeconomic School Communities* (Council of Australian Governments, 2008) identified a number of under-researched areas in the post-Year 10 context, especially as they relate to rural, regional, and disadvantaged students and their retention in education.

In addition to negative economic consequences and social costs, early disengagement from education can have consequences for individuals in terms of their relationships with family, friends and community, as well as affecting their perceptions of themselves, their confidence, and mental health (Steverink, Weterhof, Bode, & Dittman-Kohli, 2001). These outcomes have costs to the community

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as a whole through lost productivity, ongoing skills shortages, and demands on the health, justice and welfare systems. The need for holistic approaches to the problem of low post-compulsory participation is required to address challenges involved at the family, community and institutional level has been established (Abbott-Chapman, 2011).

Factors influencing student retention

Liu and Nguyen (2011) listed characteristics of young people at risk of poor economic and personal outcomes based on findings of the Longitudinal Study of Australian Youth. They described being indigenous, born in Australia, living outside of a metropolitan area, having low academic achievement and poor literacy and numeracy skills at age 15, parents in blue-collar occupations or without university education and living in a non-nuclear family as contributors to being at risk over which individuals have little if any control. In addition, they listed factors that can be regarded as outcomes of individuals' choices that also contribute. These were; poor attitudes to school, attending a government school, having poor relationships with teachers and a history of poor behaviour as a student, disliking school, lack of engagement with extra-curricular school activities and, intending in Year 9 to leave school early (Liu & Nguyen, 2011). Having more than one of these characteristics can lead to greater risk.

Other researchers have also identified failure of students to connect with their secondary school curriculum (McWilliam, 2008) or to build satisfactory teacher/student relationships (Hyde & Durik, 2005) as impacting negatively on students staying on at school. The likelihood of disconnecting from schooling is further increased if the individual is from a low socio-economic status (SES) community and under economic pressures to find work to survive financially (Swanson, 2009). Hence, low SES is considered a risk factor in terms of students' initial and on-going schooling and academic and social development (Hay & Fielding-Barnsley, 2009). Associated with this risk is the concern that parents in lower SES communities have lower educational expectations and aspirations for their children, which indirectly influence students' academic achievement, academic self-concept and career aspirations (Neuenschwander, Vida, Garrett, & S., 2007). Students from low SES communities may also fail to connect with further and higher education institutions because of cost, transport, timetabling, and resource limitations (Lamb, Walstab, Teese, Vickers, & Rumberger, 2004). There is also evidence that one of the keys to raising post-compulsory completion rates is broader curriculum choice to allow a wider range of adolescents' developing personal and vocational interests to be satisfied (Sweet, 2002).

The attitudes, beliefs and behaviours of secondary school teachers have been shown to help shape the post-school pathways chosen by school leavers (Abbott-Chapman & Kilpatrick, 2001) with some teachers having low expectations of their students' capacities to learn (Beswick, 2005, 2007). Changing the beliefs and attitudes to post-Year 10 education of students', their teachers, families, and communities is not something that can be achieved quickly or easily – it is well established that deeply held beliefs are resistant to change (Green, 1971). The longer that a belief has been held the more opportunity there has been for it to become enmeshed with other beliefs and hence increasingly central to the individual's belief system and thus harder to change. It is, therefore, reasonable to assume that interventions aimed at influencing students' intentions with respect to post-Year 10 education should begin much earlier than the later years of secondary school and be sustained in order to have sufficient time to have an impact. This study includes Year 5 students with a view to determining the nature of students' intentions about post-Year 10 education at this stage. In the larger study these students will be tracked to Year 7 providing longitudinal data that along with cross-sectional data will allow insights into how post-Year 10 intentions develop over time.

The Tasmanian context of the study

Tasmania's rural and highly dispersed population makes difficult equality of provision, and access to, education. Indeed Tasmania's population is more dispersed than that of any other Australian state

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(Australian Bureau of Statistics, 2010). According to the Ministerial Committee of Employment, Education and Youth Affairs (MCEETYA) Schools Geographic Location Classification (SGLC) (Jones, 2004) all of Tasmania outside the greater Hobart area is provincial or remote. Tasmania is also the most socio-economically disadvantaged of all the states as measured by a number of socio-economic indices including disposable household income, adult and youth unemployment rates, and reliance on government financial assistance. In 2007 only 47% of Tasmanian workers had a post-Year 10 qualification even though 86% of the jobs in Australia required a qualification at that level (Government of Tasmania, 2007). Tasmania's post-Year 10 retention rates have lagged those of other states. For example, in 2008 only 55% of students stayed on until Year 12 compared with the Australian average of 62% (Australian Bureau of Statistics, 2008). Tasmanian young people have a higher probability than their interstate peers of belonging to a group called the "NEET" (not in education, employment, or training), a group who are disengaged from learning, in part because of low aspirations and poor transitional pathways (Lamb & McKenzie, 2001).

In view of the above, Tasmanian students, particularly those in rural areas are relatively likely to have the characteristics of youth at risk of not making a successful transition to adult life that were listed by Liu and Nguyen (2011) as ones over which individuals have no control. In addition, post-Year 10 education in Tasmania is primarily provided in separate institutions requiring many students, particularly those in rural and remote locations to make long daily bus journeys or to leave home in order to board in larger regional centres. There is evidence that these circumstances impact negatively on the aspirations and plans of rural and regional students and their parents (Kilpatrick & Abbott-Chapman, 2002).

The study

The study was designed to answer the overall research question, "What is best educational practice to enhance student retention in schooling beyond the compulsory years, especially for students in rural, regional, and disadvantaged areas?" An essential part of this is investigating factors that influence students' decisions to continue their schooling beyond Year 10. The data reported here are from the pilot of the student questionnaire with students in Years 5 and 9/10.

Participants

Participants were drawn from one primary school and one secondary school and comprised 44 Year 5 students (19 male and 25 female), 20 students in Year 9 and 30 in Year 10 (40 male and 10 female). The schools were located in or near to Hobart, selected for convenience in terms of proximity to members of the research team. The pilot study schools were within the only Tasmanian area categorised as Metropolitan according to the SGLC (Jones, 2004) and hence the factors known to impact school retention negatively may be less acute in these schools compared to those in other SGLC areas. However, all Tasmanian regions have been identified as characterized by relatively low levels of literacy, Year 10 and Year 12 completion, and tertiary qualifications, as well as high unemployment and low participation rates (Australian Government, 2012). It was, therefore, considered that differences between the pilot participants and those for the larger study would be sufficiently small to allow the purposes of the pilot study to be achieved.

Instrument

The student questionnaire included a section comprising 42 Likert type items designed to investigate factors known from the literature to influence students' decisions about continuing education beyond Year 10. These were: engagement with schooling (Cavanagh & Waugh, 2004); connection with the school curriculum (McWilliam, 2008); connections with further and higher education institutions (Lamb et al., 2004); relationships with teachers (Hyde & Durik, 2005); perceptions of teacher and parental aspirations (Kilpatrick & Abbott-Chapman, 2002); career aspirations; and academic self-concept (Lamb et al., 2004). In addition items intended to measure other possibly relevant dimensions that were suggested in literature not directly related to retention were also included. These dimensions

were; school culture (Fullan, 2003; Schein, 1999; Sergiovanni, 2000), the physical environment of the school, administrative arrangements that might impact the convenience of getting to school, perceptions of friends' aspirations. Illustrative examples of items from each of the 12 dimensions of the questionnaire are provided in Cranston, Allen, Watson, Hay, & Beswick (these proceedings) as well as in Table 1. Participants responded on 5-point scales indicating the extent of their agreement from Strongly Disagree to Strongly Agree with each of the items. Items were identically worded for both the Year 5 and Year 9 participants in the pilot study.

Procedure

The questionnaire was administered by members of the research team with the assistance of class teachers. The questionnaire was available in both online and hard copy versions with the format actually used dependent upon access to in-class computers. A factor analysis of the combined Year 5 and Year 9 data was conducted in order to maximise the sample size and because it was reasonable to assume on the basis of the literature that similar factors would underlie the responses of both groups.

Results

The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.787 which was above the recommended minimum of 0.6, and Bartlett's test of sphericity was significant (χ^2 (861) = 2481.20, p<0.01) suggesting the data were factorable (Hair, Black, Babin, Anderson, & Tatham, 2006). Solutions for three, four, five, six, seven and eight factors were examined using both Varimax and Oblimin rotations. The eight factor solution with Varimax rotation was preferred because of its greater interpretability and alignment with relevant factors identified from the literature. The eight factors accounted for 19.3%, 9.7%, 9.6%, 8.3%, 6.9%, 6.5%, 4.1 % and 4.0% of the total variance respectively. Loadings less than 0.4 were suppressed. The names of the factors, examples of items that loaded on each, and Cronbach's alpha reliability scores for each of the first six factors are shown in Table 1. The example items are ordered from highest to lowest loading on the relevant factor. All of the Cronbach alpha scores were above the acceptable level of 0.7 (Hair et al., 2006). It is recognised that Factors 7 and 8 each comprising a single item, may be unreliable or unstable and hence need to be interpreted with caution (Tabachnick & Fidell, 2001). They have not been ignored because they represent interesting leads for further research that will also clarify their status. Just one item, "My teachers encourage me to keep studying after Year 12" did not load sufficiently on any factor. Each of the first six factors is discussed in turn in the following sub-sections. Factors 7 and 8 comprising the single items shown in Table 1 are self-explanatory.

Table 1

Factors underlying the combined Year 5 and Year 9 data (n=94)

Factor number	Factor name	No. of items loading on the factor	Examples of items	Cronbach's α
1	Happy at school	16	I have good teachers. When I am not in class there are good places at this school to spend time with my friends during breaks. I feel safe at school.	0.932
2	Family support to continue	7	My parents/guardians want me to keep studying after Year 12. I plan to go to university.	0.843
3	Attractive curriculum and extra-curricular options	5	I have opportunities to be involved in sports, clubs and other activities, e.g. music, drama, chess. My school offers a wide range of subjects.	0.813
4	High achieving including maths	5	I am capable of doing well in Mathematics.	0.815
5	Teacher and friend	3	My friends plan to go on past Year 10.	0.713

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	support to continue			
6	Positive about English	3	I am capable of doing of doing well at English.	0.833
7	Plan for apprenticeship	1	I plan to get an apprenticeship.	-
8	Know what job type wanted	1	I know what sort of job I want to have when I finish my education.	-

Factor 1: Happy at school

This factor encompasses the opposites of many of the mediating risk factors identified by Liu and Nguyen (2011) and others, in that it reflects positive attitudes to school and relationships with teachers, and engagement with extra-curricular school activities. Items loading on this factor portrayed teachers as competent, supportive, interested and caring. It also included items suggesting a safe school environment that facilitates interactions with friends outside of class time and positive perceptions of the school timetable and start and finish times.

Factor 2: Family support to continue

This factor reflects students' perceptions of their parents' aspirations for them to continue with education beyond year 10 and Year 12 as well as their own valuing of education and aspirations to attend university.

Factor 3: Attractive curriculum and extra-curricular options

The items loading on this factor suggest the availability of a wide variety of attractive school subject choices as well as extra-curricular activities and encouragement to be involved with them.

Factor 4: High achieving including maths

This factor suggests a positive self-image and high achievement with respect to school work in general and mathematics in particular, as well as a perception of being well prepared for the next stage of schooling.

Factor 5: Teacher and friend support to continue

The three items loading on this factor reflect friends aspiring to continue their education beyond Year 10 and Year 12 as well as the perception of high teacher expectations although the latter are not linked specifically to continuing education.

Factor 6: Positive about English

Items relating to perceived capability and working hard in English loaded on this factor.

Discussion

Factor 1, identified in this pilot study is consistent with the emphasis in the literature on the importance of positive relationships with teachers (Abbott-Chapman & Kilpatrick, 2001; Hyde & Durik, 2005; Liu & Nguyen, 2011). However, this factor also included elements related to perceptions of the school environment as safe, providing appropriate places for socialising, and a workable daily timetable. These are less prominent in the literature but combine with positive student-teacher relationships to convey a sense of being generally happy at school. Parental aspirations, reflected in Factor 2, also feature in the literature related to retention (Neuenschwander et al., 2007) particularly in relation to students from low socio-economic backgrounds. Factors 1 and 2 both include aspects of the construct Cavanagh and Waugh (2004) termed "student educational values" (p. 248) to describe students' seeing their education as important (Factor 2), having positive attitudes to school (Factor 1), and linking continued learning with the achievement of their goals.

In this study an interesting, engaging curriculum, identified as important for secondary school

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students (McWilliam, 2008; Sweet, 2002), correlated with the availability of and encouragement to participate in extra-curricular activities. The inclusion of both curriculum and extra-curricular choices in this factor may be the result of the inclusion of primary school students in this study – it could be that curriculum options and extra-curricular activities differ in importance for older and younger students. Alternatively, some students may not be engaged with the curriculum from primary school or attractive extra-curricular activities could provide a means of engaging (or re-engaging) older students with school. These questions will be explored in the larger study.

Students' academic achievement and academic self-concept were described be (Neuenschwander et al., 2007) as indirectly and negatively affected by lower parental aspirations for their children's education. In this study items reflecting general academic self-concept and perceived achievement loaded on Factor 4 along with items that specifically referred to mathematics. In contrast to this, items related to self-concept, perceived achievement, and application in English formed a separate factor (Factor 6). Liu and Nguyen (2011) cited poor academic achievement and low literacy and numeracy skills (as opposed to perceptions of achievement in these domains or self-concept in relation to them) at age 15 (Years 9 or 10) as risk factors for poor transitions to adult life. The inclusion of Year 5 in the larger study, as well as in this pilot study, will allow questions about the nature and extent of changes in students' self-concepts and perceived achievement in English and mathematics from primary school through to the senior secondary years to be examined. The extent to which these variables, as well as actual achievement, impact decisions about post-Year 10 will also be explored.

Teacher expectations and peer-group aspirations in relation to continuing education were reflected in Factor 5 separate from similar items relating to parents and guardians, and students' own aspirations. Teacher expectations have been recognised in the literature as important to student outcomes (Abbott-Chapman & Kilpatrick, 2001; Beswick, 2005, 2007). In this study just one item referred directly to teacher expectations although there were many that referred to other attitudes and behaviours of teachers. All teacher related items, apart from the one relating to their expectations and the one that did not load on any factor, loaded on Factor 1 suggesting that high teacher expectations may be perceived differently by students from other teacher characteristics.

Both of the single item factors (Factors 7 and 8) reflected having well-defined and quite definite post-school plans. They present interesting possibilities to be explored in the larger study, particularly in view of the requirement of the Tasmanian Qualifications Authority (TQA) for awarding the Tasmanian Certificate of Education (TCE) at the end of Year 10, 11 or 12 be dependent upon students having developed and reviewed a plan for their education and training (TQA, 2010). The consequent emphasis in Tasmanian schools on supporting students to plan for successful transitions to working life has been reflected in pathway planning curricula for Years 8, 9 and 10 (Tasmanian Department of Education, 2010). In Year 8 the focus is on setting goals and considering how these might be achieved with an emphasis, consistent with Cavanagh and Waugh's (2004) concept of student educational values, on how continued learning could contribute. From Year 9 pathway planning curricula include quite specific information about workplaces, possible occupations, and education and training providers and may result in some students forming clear images of their future working lives. It is not clear whether having definite post-school plans makes other factors impacting retention (e.g., relationships with teachers, parental aspirations, friends' intentions with respect to education, and academic self-concept) less important and hence might ameliorate possible negative impacts arising from these factors, or whether these factors largely determine the kinds of pathway plans that students devise. It is also possible that definite plans may make students less open to considering alternatives of which they were not aware or considered unrealistic at the time of planning.

Conclusion

It is evident from this study and from the literature in the field that the process by which students arrive at decisions about their educational futures is a complex one influenced by a multiplicity of interacting factors. This questionnaire used in this study was devised to reflect dimensions evident

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from the literature and the factor analysis reported here was conducted to assess the extent to which these dimensions underpinned the responses of the pilot study participants. There are sufficient parallels between the findings reported here and the literature to suggest that the questionnaire is soundly based. At the same time differences suggest interesting possibilities for the larger study and for other further research. These include: the interplay of students' perceptions of their teachers competence, behaviours and attitudes towards them and their perceptions of the school environment more broadly; the roles of engaging curriculum and attractive extra-curricular activities; the impacts and connections among of students' academic self-concepts in general, and in relation to English and mathematics; the interaction of peer aspirations and teacher expectations, and; issues arising from students having clearly defined plans for their future pathways.

The findings of this study need to be viewed with caution due to the small numbers of participants drawn from just two schools that were in a metropolitan area. In addition, the combination of data from Years 5 and 9/10 that allowed a defensible factor analysis to be conducted may have obscured differences between the older and younger students. The inclusion of primary school students in the larger study will allow possible differences between the factors influencing the thinking of older and younger students in relation to post-Year 10 education to be explored. This will have important implications for the targeting interventions aimed at improving retention beyond Year 10. The setting of this research in Tasmania with its relatively low retention rates and high incidence of many of variables associated with risk of poor economic and personal outcomes identified by Liu and Nguyen (2011) means that its findings will be relevant to other rural, regional, and disadvantaged Australian communities.

Acknowledgements

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