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Casualties of Schooling? 18 to 22 Year Old Students in a Tertiary Bridging Program

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Abstract: A sample of 81 students between the ages of 18 and 22 years in a tertiary bridging program at a regional university completed a questionnaire examining how demographics, social context, academic engagement and the ability to cope with the curriculum complexity influenced academic success in high school and adversely affected their preparedness for tertiary study. The demographics of the study participants, including socio-economic status, private/public school attendance and first in family to attend university were such that the study participants could not be considered to be members of a disadvantaged group. The study supports the hypothesis that a number of the study participants are casualties of their schooling and their poor long term academic performance at high school occurred due to poor student-teacher relationships with associated poor academic engagement. The implications for educational pedagogy for educators in tertiary bridging programs are discussed.

Introduction

The use of tertiary bridging programs for non-traditional students to gain access to, or better prepare for, tertiary study is becoming more popular in the Australian tertiary education sector. This study examined one cohort of 18 to 22 year old students in a tertiary bridging program that was conducted at a regional university in Queensland. The program is accessed by individuals who are either, not academically qualified to attend university, or who wish to develop their skills prior to commencing tertiary study. The bridging program commenced in second semester 2006 with an enrolment of 66. The semester 2 2009 enrolment was 295. Historically, 50% of the students who have attended the program were aged between 18 and 22 years of age with only 10% of the 18 to 22 year old students possessing the academic qualifications necessary to be accepted for undergraduate study at the institution where the study was conducted. In the cohort that was the subject of this study, 21% possessed a tertiary entrance ranking from secondary school in Queensland, with 11.1% having a rank which would enable them to gain access to a general undergraduate degree at the institution where the bridging program is conducted. The modal age for students entering the bridging program is 18 years of age. These statistics indicate that many students who have not succeeded in traditional schooling have been motivated to continue their education at the tertiary level within a very short period of time after leaving secondary school and after a long term history of poor academic performance.

The aims of the research were to ascertain the factors from a student's background which contributed to the low levels of academic achievement demonstrated in secondary school. The research is significant as this bridging program is a recent innovation within the university and no research had been completed at the university in relation to this group of

non-traditional tertiary students and their particular educational requirements. The research is also timely on the wider tertiary scene in Australia as a recent review of Australian higher education (Bradley, Noonan, Nugent, & Scales, 2008) recommended that by the year 2020 40% of Australians between 25 and 34 years of age should possess at least a bachelor level qualification. Non-traditional students such as those who are the subject of this study will provide one possible approach to meeting this goal.

Literature Review

Introduction

The approach taken in the study was to examine whether the lack of academic performance by the target group was associated with a common demographic feature, such as low socio-economic status, or whether one of the major educational theories that have been used in recent times to explain cognitive development and academic achievement offered an explanation. The theories examined in the review are the staged cognitive development theory of Piaget (1964, 1972), the cultural-social theories of Vygotsky (Wertsch, 2008), Brunner (1988) and Bandura (1989), and the bioecological theory (Bronfenbrenner & Evans, 2000; Bronfenbrenner & Ceci, 1994). The more recent literature on academic engagement is also presented.

Staged cognitive development

Piaget (1964, 1972) theorised that students went through four distinct stages, namely the sensorimotor stage (infancy), the pre-operational stage (toddler to early childhood), the concrete operational stage (elementary to early adolescence) and the formal operational stage (adolescence and adulthood). Each of these stages was associated with specific cognitive capabilities at a particular age which, in turn, indicated what students would be capable of doing at that time (Piaget, 1972). Riegel (1973) has also proposed an additional stage, called dialectical reasoning, which was identified as occurring after the formal operational stage.

Piaget (1964) described the development of knowledge as:

> a spontaneous process, tied to the process of embryogenesis. Embryogenesis concerns the development of the body, but it concerns as well the development of the nervous system and the development of mental functions. In the case of the development of knowledge in children, embryogenesis ends only in adulthood. (p. 176)

He also distinguished between cognitive development and learning when he observed that "development explains learning, and this opinion is contrary to the widely held opinion that development is a sum of discrete learning experiences" (p. 176). Thus, Piaget's theory is underpinned by the view that the mind undergoes a spontaneous development that is associated with the age of the individual and that knowledge can only be understood by a mind which has reached the necessary developmental stage.

The staged cognitive development theory has been challenged for a number of reasons, including the age norms proposed and the nature of the tasks used to determine the stages themselves (Huitt & Hummel, 2003; Kuhn, 2008; Nigro, 2006) and the ability of children of a very young age to perform complex tasks such as understanding the logic of falsification (Lawson, 1990). Even in situations where researchers have attempted to address the criticisms associated with the theory the authors did "not claim there is a 'true' Piaget to be discovered, or that the problems with his theory vanish when it is better understood" (Lourenço & Machado, 1996, p. 143).

Piaget's theory provides one possible explanation for poor long term academic performance whereby the process of embryogenesis for the student occurs at a slower rate than that required by the delivered curriculum. In such circumstances the student would not be able to understand the complexity of the curriculum and where this situation continued for a significant period, poor academic outcomes would result.

Cultural-social theory of cognitive development

A number of educational theorists propose that cognitive development and learning are a consequence of cultural and social interactions. A common theme of the cultural-social theories of cognitive development posits that the process through which cognitive development occurs is that of cultural and social interaction. Vygotsky argued that "higher mental functions appear first on the 'interpersonal' (i.e. social) plane and only later on the 'intrapsychological' (i.e. individual) plane" (Wertsch, 2008, p. 67). Bandura (1989) proposed that "human expectations, beliefs, emotional bents and cognitive competencies are developed and modified by social influences that convey information and activate emotional reactions through modelling, instruction and social persuasion" (p. 3). Learning and cognitive development are thus proposed as being initially constructed as a result of social interaction between people and understood by the individual as a social construct before being internalised to become a personal construct.

The proposal that learning occurs as a part of the social context of the learner has been tested empirically. Wegerif, Mercer and Dawes (1999) established a relationship between speech within a social context and learning. Mercer (2008) also established "that adults can guide children in how to use talk effectively, as a cultural and psychological tool, and there is evidence that this can make a significant contribution to children's self-regulated learning and their intellectual development" (p. 99). The influence of social context on language development has also demonstrated where "friends generated more than did nonfriends" (Pellegrini, et al., 1998, p. 49). Rogoff (1991) established that the learning transfer from adult to child occurred in situations where no communication was involved, but social interactions were still occurring. Even when children participated in the adult world as observers "the repeated and varied experience in supported routine and challenging situations" (p. 351) resulted in the children becoming skilled in the cognitive activities which were involved.

Bruner (1988) adopted the view that cognitive development for an individual was a two way process, in that it is influenced from the outside by cultural and social factors and from the inside by the nature of the cognitive frameworks which already exist. He explained that:

> the development of human intellectual functioning from infancy to such perfection as it may reach is shaped by a series of technological advances in the use of mind…These techniques are not, in the main, inventions of the individuals who are "growing up"; they are, rather skills transmitted with varying efficiency and success by the culture (p. 33).

Bruner (1977) proposed that a body of knowledge, even from the highly structured subjects such as Mathematics, Physics and History, could be introduced to students at a very early age so long as it was introduced in a manner which utilised the existing cognitive structures which were available to the student at that time.

The cultural/social theory of cognitive development requires that an appropriately supportive social context must exist for the individual before cognitive development and learning are able to take place. The major social relationships for young people exist with their family, peers and teachers. If one or more of these aspects of a student's social context was dysfunctional for a significant period, then cognitive development and learning would be negatively impacted with poor educational outcomes resulting.

Bioecological model of cognitive development

A number of attempts have been made to rationalise the different influences on the developmental process of the individual in a single framework. One such framework, ecological system theory, describes the individual as "developing within a complex system of relationships affected by multiple levels of the surrounding environment" (Berk, 2006, p. 26). In the bioecological model of Bronfenbrenner and Evans (2000), the environment of the individual is divided into four layers, namely the microsystem, the mesosystem, the exosystem and the macrosystem with each system operating at a greater distance to influence the developing individual. Cognitive development, in the bioecological model, occurs due to the effects of "mechanisms of organism-environment interaction", also called "proximal processes" (Bronfenbrenner & Ceci, 1994, p. 569). Effective proximal processes are posited in the theory to lead to a number of outcomes, including the actualisation of potentials for differentiated perception and response and acquiring knowledge and skill. The model also proposes that "when proximal processes are weak, genetically based potentials for effective psychological functioning remain relatively unrealized but they become actualized to a progressively greater extent as proximal processes increase in magnitude" (p. 569).

In an educational context, the bioecological theory suggests that underachieving students are not necessarily lacking in the potential to achieve, but rather, their latent abilities have not been actualised by their exposure to an appropriate environment. A student throughout the primary and secondary years of schooling has no control or influence over the environment within which they find themselves, except perhaps in relation to their choice of friends. Thus, where a student has a long history of poor academic success the bio-ecological model would suggest that a change at some level within the student's environment would be necessary before significant change would be seen in their cognitive capacities and academic performance. This point in time will often occur for most individuals when they have finished secondary school and separated from the traditional family and/or school environment.

Academic Engagement

The potential for a student to learn successfully has also been related to an educational construct called engagement. Engagement with school has been identified psychologically with interest, feelings of connectedness, and motivation and behaviourally with attendance, participation in activities, effort and social interactions (Woolley & Bowen, 2007). It has also been described as "a way to ameliorate low levels of academic achievement, high levels of student boredom and disaffection and high dropout rates" (Fredricks, Blumenfeld, & Paris, 2004). The engagement construct has been defined in a number of different ways, but normally includes an emotional component, which describes the emotional connection that the student has with school and school work, and a behavioural component, which includes the specific behaviours and effort which must be demonstrated to cope with and understand the curriculum which is encountered in the classroom (Dunleavy & Milton, 2008; Finn & Voelkl, 1993; Fredricks, et al., 2004; Woodward & Munns, 2003; Woolley & Bowen, 2007).

Engagement with school and learning for each individual is in a constant state of flux and is dependent upon the particular context and environment that an individual is in (Finn & Rock, 1997). The individual's particular level of engagement "may stem from opportunities in the school or classroom for participation, interpersonal relationships, and intellectual endeavours" (Fredricks, et al., 2004, p. 61). Finn and Rock (1997) identified statistically significant relationships between academic engagement, using a construct they called resilience, and a number of environmental and contextual factors. Improved engagement was

seen in students who lived with both biological parents, students who resided with a single parent but who had a higher level of schooling, students who resided in a household with a higher average yearly income and for students who had parents who were employed full-time.

Literature Summary

The literature reviewed supports the view that the preparedness of an individual to learn at a specific time depends on a complex interplay of factors that exist at that point in time. These factors are all dynamic in nature and are constantly changing to influence a person's preparedness and ability to learn. The ability to successfully incorporate new knowledge requires the individual to operate within a cultural and societal framework which supports his/her particular needs, have an appropriately supportive social context within the classroom and family, have the appropriate level of cognitive development to support the new knowledge and have a satisfactory level of engagement with the educational situation. In the case of the study participants the explanation for the lack of successful academic performance was hypothesised to be due to one or more of these factors not being met for a significant period of time.

Method

A questionnaire was developed composed of an introductory demographics section followed by a series of Likert style items using a five point scale ranging from Strongly Disagree to Strongly Agree. This questionnaire was used as a component of a wider research study targeting the students in the bridging program. The questionnaire was piloted utilising 39 respondents who had completed the program in semester one 2009 and a number of academics. Following initial feedback the final questionnaire was compiled with 81 items. This questionnaire was completed by 157 respondents from the semester two 2009 student cohort, representing a 75% completion rate. 81 of the respondents were between the ages of 18 and 22 years.

A Principal Components Analysis using Direct Oblimin rotation and Kaiser normalisation was completed using the Likert scale items that resulted in the identification of six factors which could be used for further analysis. The scales identified comprised 50 items which indicates a 3.14:1 response to item ratio for the questionnaire. Factors were named based upon their constituent items as follows.

Scale	No Items	Cronbach's Alpha
Scholastic Engagement	7 items	.910
Emotional Engagement	7 items	.901
Family Relationships	9 items	.922
Teacher Relationships	7 items	.929
Peer Relationships	7 items	.902
Capacity to Cope	5 items	.902

Table 1: Questionnaire Scales

The lowest factor loading used for any item to be included in a factor was .600 with all inter-item correlations for a given factor being at least statistically significant with $p<.01$. The Cronbach's alpha values indicate a high level of internal reliability for each scale. The eigenvalues and percentage of variance explained by each of the factors is shown in Table 2.

Factor	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
Family Relationships	11.355	27.036	27.036
Teacher Relationships	5.031	11.978	39.014
Scholastic Engagement	4.429	10.545	49.559
Peer Relationships	3.349	7.974	57.533
Emotional Engagement	2.642	6.290	63.823
Capacity to Cope	1.778	4.234	68.057

Table 2: Variance explained by identified factors

The level of academic achievement was measured by using a combination of four Likert style items, such as "I achieved good grades in all my subjects", and the respondent's reported grades from Section 1 of the questionnaire. The Cronbach's alpha for this scale was .808.

The factor analysis identified only two factors that were identified as composing the engagement construct. The two dimensional structure of the engagement construct has support in the literature (Woodward & Munns, 2003). The items comprising the scholastic engagement scale appeared to cover both the behavioural and cognitive engagement dimensions (Fredricks, et al., 2004) described in some of the literature.

The capacity to cope scale provided a measure of the respondent's capacity to cope with the complexity of the curriculum and utilised items such as "I found my schoolwork easy to understand" and "I knew how to do my homework". The nature of the items in this scale enables its use in indirectly assessing whether the respondents' level of cognitive development was sufficient to cope with the demands of the difficulty level of the curriculum offerings.

The academic achievement scale was composed of two different components. Respondents reported their average subject grades for the last two years of school on an A-E scale and also responded to four Likert style items, such as "I achieved good grades in ALL of my subjects" and "Exams were easy to get good grades on". The grades for the first four reported subjects were converted to a value from one for an E to five for an A and then added to the responses for the Likert style items.

Discussion

The items in the demographic section of the questionnaire allowed the comparison of a number of demographic factors for the sample group to the wider student population. The only demographic difference identified for the sample group was in relation to the percentage of respondents who resided with both parents during their last 2 years of school. The 2006 Australian census indicates that 63% of 16 year old students in Queensland resided with both parents (Baxter, Gray, & Hayes, 2009) whilst the sample in this study contained only 51.6%.

The analysis identified that 38.3% of participants attended a private school for some of Years 11 and 12 which compares to the figures available for school attendance in the wider population. The percentage of students in private secondary schools in Australia in 2004 was approximately 35% (Ryan & Watson, 2005, p. 12). In 2008 the proportion of senior secondary students in Queensland in Catholic and independent schools was reported as 39.3% (Australian Education Council, 2008).

Tables 3 and 4 show comparisons for socio-economic status and first in family to attend university between students in the bridging program and students enrolled in other programs at the institution where the study was conducted.

Program	All Ages			18 - 22 Years (inclusive)		
	Number Low SES	Proportion Low SES	Total Number of Students	Number Low SES	Proportion Low SES	Total Number of Students
Bridging Program Enrolments	16	6.81%	235	8	7.62%	105
Enrolments in Other Programs [1]	643	12.37%	5199	354	14.50%	2442

Based on 2006 ABS Census SEIFA Classifications
[1] *Includes undergraduate, postgraduate and non-award students*

Table 3: Proportion of students from low socio-economic status background

Program	All Ages			18 - 22 Years (inclusive)		
	Number First in Family	Proportion First in Family	Total Number of Students	Number First in Family	Proportion First in Family	Total Number of Students
Bridging Program Enrolments	111	47.23%	235	43	40.95%	105
Enrolments in Other Programs [1]	2607	50.14%	5199	1284	52.58%	2442

[1] *Includes undergraduate, postgraduate and non-award students*

Table 4: Proportion of Students First in Family to Attend University

These comparisons show no evidence to indicate that socio-economic status, first in family to attend university or the type of school attended were associated with the poor academic outcomes demonstrated by the participants while in secondary school.

The discussion from this point will examine the overall inter-relationships between each of the scales identified and will describe the relative importance of the student-teacher relationship when compared to that with family and peers in influencing academic engagement and achievement. The association between the quality of the student-teacher relationship and the amount of study, school absence and secondary school completion will then be presented.

A Spearman's rank correlation coefficient matrix was generated for each of the 7 scales identified in order to determine the nature of their inter-relationships and is shown in Table 5.

		Scholastic Engagement	Family Relationships	Teacher Relationships	Emotional Engagement	Peer Relationships	Capacity To Cope	Academic Achievement
Scholastic Engagement	Corr Coefficient	1.000	.348**	.310**	.478**	-.193	.147	.424**
	Sig. (2-tailed)	.	.002	.007	.000	.093	.202	.000
	N	77	75	74	76	77	77	68
Family Relationships	Corr Coefficient	.348**	1.000	.209	.302**	.203	.170	.231
	Sig. (2-tailed)	.002	.	.072	.007	.072	.134	.055
	N	75	79	75	78	79	79	70
Teacher Relationships	Corr Coefficient	.310**	.209	1.000	.553**	.096	.386**	.386**
	Sig. (2-tailed)	.007	.072	.	.000	.407	.001	.001
	N	74	75	77	77	77	77	68
Emotional Engagement	Corr Coefficient	.478**	.302**	.553**	1.000	.114	.253*	.387**
	Sig. (2-tailed)	.000	.007	.000	.	.315	.023	.001
	N	76	78	77	80	80	80	70
Peer Relationships	Corr Coefficient	-.193	.203	.096	.114	1.000	.284*	.089
	Sig. (2-tailed)	.093	.072	.407	.315	.	.010	.463
	N	77	79	77	80	81	81	71
Capacity To Cope	Corr Coefficient	.147	.170	.386**	.253*	.284*	1.000	.572**
	Sig. (2-tailed)	.202	.134	.001	.023	.010	.	.000
	N	77	79	77	80	81	81	71
Academic Achievement	Corr Coefficient	.424**	.231	.386**	.387**	.089	.572**	1.000
	Sig. (2-tailed)	.000	.055	.001	.001	.463	.000	.
	N	68	70	68	70	71	71	71

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 5: Scale Correlation Matrix

The data in the matrix may be represented using the following correlation map shown in Figure 1. The shaded area indicates the scope of influence for the student-teacher relationship.

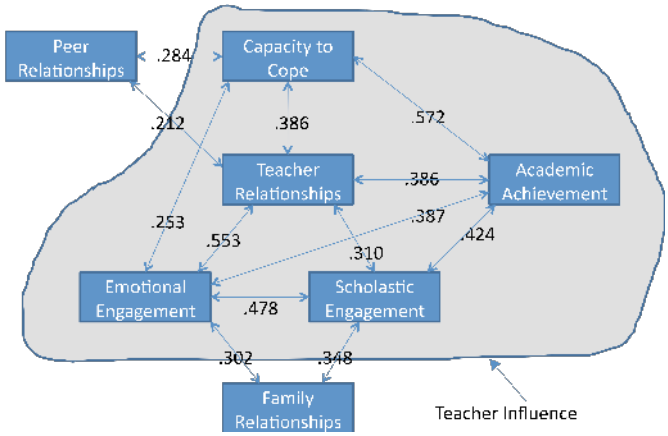

Figure 1: Scale Correlation Map

The following significant characteristics are apparent from the statistically significant correlations.

- The only aspect of the respondents' social context which is directly correlated with academic achievement is the nature of the student-teacher relationship (ρ=.386, p=.001);
- The primary influence on the students' emotional engagement with school is the quality of the student teacher relationship (ρ=.553, p<.001);
- The influence of the family relationship is seen to act through its influence on emotional and scholastic engagement;
- The influence of the peer group is seen to act via supporting students with understanding and coping with the complexity of the curriculum; and
- The student-teacher relationship has the capacity to influence virtually all aspects of the students' experience at school and is able to override the influences of the family by acting in relation to emotional engagement and of peers by acting on the capacity to cope with the curriculum complexity.

The box plots, shown in Figure 2, report the quality of the different aspects of the social context for the study participants. The mid-range for each scale is shown denoting the neutral position.

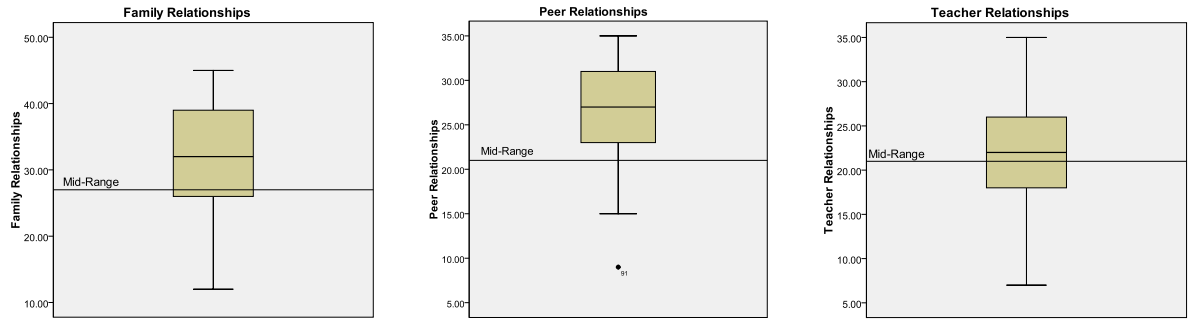

Figure 2: Social Relationship Scales

It is apparent that the quality of family and peer relationships were good, particularly the peer relationships. However, the quality of the teacher relationships was of a much lower standard with just under 50% of participants reporting a negative quality of overall student-teacher relationships. A further breakdown for the teacher relationships scale is shown in the frequency distribution shown in Figure 3.

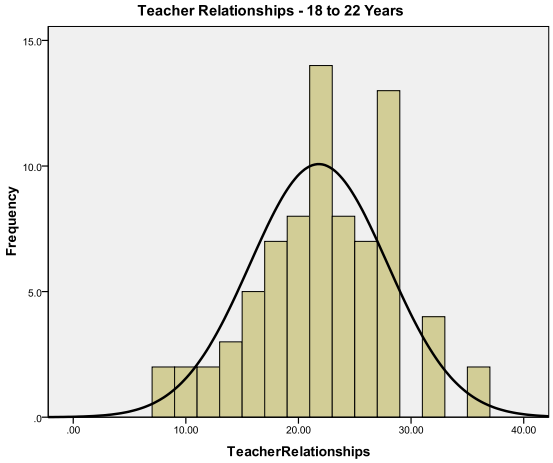

Figure 3: Teacher Relationships Frequency Distribution

Considering that the scale has a range of values from 7 to 35 and only 6 (7.8%) respondents scored above 28 on the scale, it is apparent that few respondents report a high quality of student-teacher relationships.

Respondents to the questionnaire reported the mean number of weekly hours of study completed during the last 2 years of schooling. The table shown below shows the correlations of the academic achievement scale with all other scales identified in the questionnaire. The first row includes all participants who reported less than 6.5 hours of weekly study. Each subsequent row includes participants for successively less weekly study with the last row including those participants who reported doing no study each week.

Hours Study	Scholastic Engagement			Family Relationships			Teacher Relationships			Emotional Engagement			Peer Relationships			CapacityToCope		
	C C	Sig	N	C C	Sig	N	C C	Sig	N	C C	Sig	N	C C	Sig	N	C C	Sig	N
0-6.5	.474**	.001	45	.065	.666	46	.387**	.000	47	.500**	.000	47	.118	.429	47	.584**	.000	47
0-5.5	.448**	.002	44	.062	.689	44	.348**	.022	43	.480**	.001	45	.082	.593	45	.560**	.000	45
0-4.5	.394**	.016	37	.002	.992	37	.356**	.031	37	.516**	.001	38	.280	.089	38	.520**	.001	38
0-3.5	.309	.110	28	-.009	.963	29	.407*	.081	28	.456**	.013	29	.245	.201	29	.534**	.003	29
0-2.5	.316	.163	21	-.209	.350	22	.523**	.015	21	.418	.053	22	.068	.765	22	.532*	.011	22
0-1.5	.102	.708	16	-.077	.776	16	.546*	.029	16	.411	.114	16	.260	.331	16	.500**	.049	16
0	.186	.563	12	-.166	.607	12	.678*	.015	12	.336	.285	12	.369	.238	12	.417	.122	12

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).
C C = Spearmans Rank Correlation Coefficient

Table 6: Scale Correlations by Reducing Hours of Study (18 to 22 Years)

The scales which include statistically significant correlations are compared graphically below to assist with interpretation of the table. The dashed lines indicate the point where results are not statistically significant.

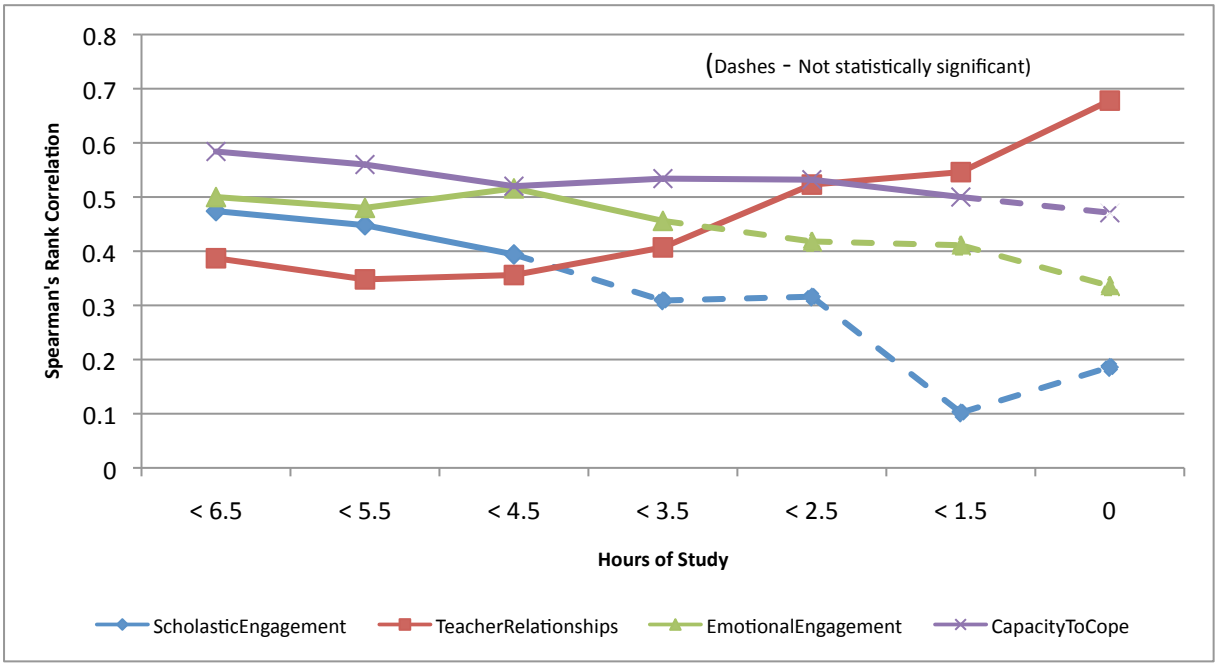

Figure 4: Correlations by Hours of Study (18 to 22 Years)

Figure 4 demonstrates that as the number of hours of study completed each week decreases, the correlation of scholastic and emotional engagement with academic achievement reduce markedly. At the same time the correlation for academic achievement increases markedly with the quality of the student-teacher relationship. For respondents who reported no study at all, the only statistically significant correlation was for the nature of the student-teacher relationship (ρ=.678, p=.015). This provides support for the interpretation that the quality of the student-teacher relationship became more important in promoting academic achievement in students who were not active and engaged in their educational experiences.

The table below shows the Spearman Rank Correlation Coefficients for all scales for respondents who reported 0 hours of study on average per week during their last 2 years at school.

		Scholastic Engagement	Family Relationships	Teacher Relationships	Emotional Engagement	Peer Relationships	Capacity To Cope	Achievement Final
Scholastic Engagement	Correlation Coefficient	1.000	.140	.333	.684**	.031	.084	.186
	Sig. (2-tailed)	.	.634	.245	.007	.916	.775	.563
	N	14	14	14	14	14	14	12
Family Relationships	Correlation Coefficient	.140	1.000	.022	-.002	.299	.277	-.166
	Sig. (2-tailed)	.634	.	.940	.994	.299	.337	.607
	N	14	14	14	14	14	14	12
Teacher Relationships	Correlation Coefficient	.333	.022	1.000	.394	.088	.756**	.678*
	Sig. (2-tailed)	.245	.940	.	.164	.764	.002	.015
	N	14	14	14	14	14	14	12
Emotional Engagement	Correlation Coefficient	.684**	-.002	.394	1.000	-.044	.115	.336
	Sig. (2-tailed)	.007	.994	.164	.	.880	.695	.285
	N	14	14	14	14	14	14	12
Peer Relationships	Correlation Coefficient	.031	.299	.088	-.044	1.000	.533*	.369
	Sig. (2-tailed)	.916	.299	.764	.880	.	.050	.238
	N	14	14	14	14	14	14	12
Capacity To Cope	Correlation Coefficient	.084	.277	.756**	.115	.533*	1.000	.471
	Sig. (2-tailed)	.775	.337	.002	.695	.050	.	.122
	N	14	14	14	14	14	14	12
Achievement Final	Correlation Coefficient	.186	-.166	.678*	.336	.369	.471	1.000
	Sig. (2-tailed)	.563	.607	.015	.285	.238	.122	.
	N	12	12	12	12	12	12	12

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 7: Correlations 0 Hours Study per Week (18 to 22 Years)

The only statistically significant correlations evident other then the teacher relationships and academic achievement scales already identified are seen for the capacity to cope scale with teacher relationships (ρ=.756, p=.002), capacity to cope with peer relationships (ρ=.533, p=.050) and emotional engagement with scholastic engagement (ρ=.684, p=.007). The capacity to cope correlations again demonstrates the importance of the nature of the teacher relationship, but also the importance of a positive peer relationship for students who are not actively engaged. Of particular interest is the lack of any statistically significant correlations for the nature of the family relationship. These correlations further support the interpretation that the classroom experience is the determining factor for the disengaged student's ability to cope with and understand the curriculum content and to achieve academic success. The correlations for academic achievement for respondents who reported 0 hours of study per week are summarised graphically in Figure 5 with the correlations between factors shown.

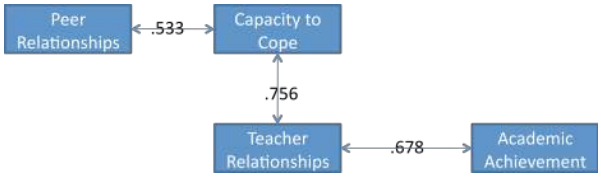

Figure 5: Correlation Relationships 0 Hours of Study (18 to 22 Years)

Item 9 from the questionnaire (On average, how many days each year were you absent from school?) was used to examine how absence from school was associated with the respondents' school experience. The Spearman's rank correlation coefficient was calculated comparing the number of days a respondent was absent for each of the scales identified as shown in Table 8.

		Scholastic Engagement	Family Relationships	Teacher Relationships	Emotional Engagement	Peer Relationships	Capacity Cope	To Achievement Final
Days Absent	Correlation Coefficient	-.302*	-.040	-.253*	-.308**	.153	.010	-.082
	Sig. (2-tailed)	.013	.747	.036	.010	.206	.934	.521
	N	67	68	69	70	70	70	63

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table 8: Scale Correlations for Days Absent (18 to 22 Years)

The number of days absent is negatively correlated at a statistically significant level with scholastic engagement (ρ=-.302, p=.013), teacher relationships (ρ=-.253, p=.036) and emotional engagement (ρ=-.308, p=.010). This suggests that the motivation for absence from school for the group as a whole is to be found in the engagement the respondent had with the school and classroom and the nature of the student-teacher relationship. The very low correlation between the number of days absent and the family relationship (ρ=-.040, p=.747) and peer relationships (ρ=.153, p=.206) clearly indicates that absence from school is not connected to the nature of the family or peer relationships for the group as a whole. The correlations for capacity to cope (ρ=.010, p=.934) and academic achievement (ρ=-.082, p=.521) also indicate that absence from school was also not due to an inability to cope with the difficulty of the curriculum or due to a lack of academic performance.

The dataset was also divided into two groups based upon how the reported number of days absent compared to the mean of 18.686 days. A Mann-Whitney U test was conducted comparing the two groups with the results shown in Table 9.

	Scholastic Engagement	Family Relationships	Teacher Relationships	Emotional Engagement	Peer Relationships	Capacity Cope	To Achievement Final
Mann-Whitney U	315.500	539.000	420.000	396.500	424.500	542.500	445.500
Wilcoxon W	721.500	974.000	826.000	831.500	1285.500	1403.500	796.500
Z	-2.934	-.329	-1.889	-2.365	-2.034	-.623	-.497
Asymp. Sig. (2-tailed)	.003	.742	.059	.018	.042	.533	.619

a. Grouping Variable: AbsentGroups

Table 9: Mann-Whitney U Test for Days Absent

Statistically significant differences were identified between the groups for the levels of scholastic engagement (p=.003), emotional engagement (p=.018) and peer relationships (p=.042). The result for teacher relationships (p=.059) was just outside the cut-off for statistical significance at the 95% level. An examination of the box plots for these scales

indicates that respondents from the group with higher then mean absence have a poorer quality of engagement and teacher relationships.

Respondents to the questionnaire also reported the highest grade of school reached. The dataset was divided into 2 groups based upon whether the final year of secondary schooling had been completed or not. A Mann-Whitney U test comparing the groups was completed with the results shown in Table 10.

	Scholastic Engagement	Family Relationships	Teacher Relationships	Emotional Engagement	Peer Relationships	Capacity Cope	To Achievement Final
Mann-Whitney U	539.500	724.000	447.000	510.500	648.500	726.500	595.500
Wilcoxon W	1004.500	1252.000	943.000	1071.500	1824.500	1287.500	1541.500
Z	-1.731	-.280	-2.771	-2.594	-1.384	-.632	-.077
Asymp. Sig. (2-tailed)	.083	.779	.006	.009	.166	.527	.939

a. Grouping Variable: Reached12

Table 10: U Tests for School Completion

Statistically significant differences were demonstrated for teacher relationships (p=.006) and emotional engagement (p=.009). The box plots comparing the emotional engagement and teacher relationships for the groups are shown in Figure 6.

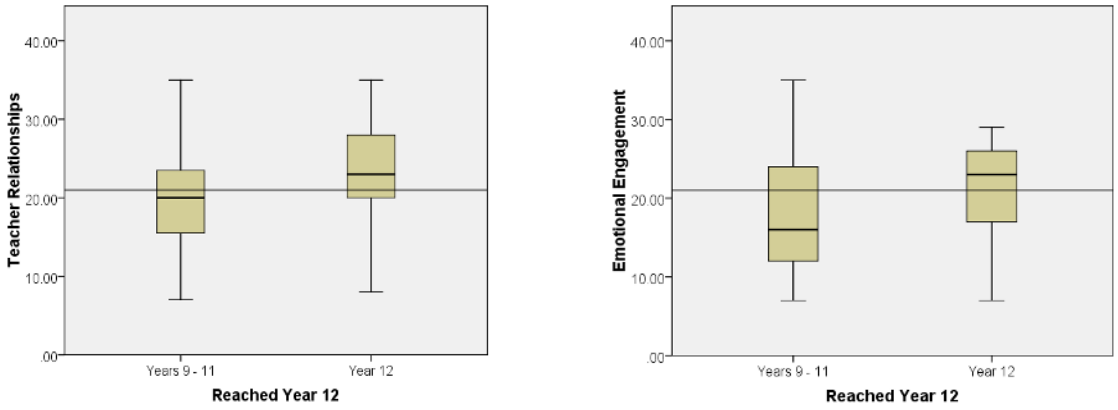

Figure 6: Emotional Engagement and Teacher Relationships Comparison

These results suggest that completion of secondary school was influenced by the level of engagement and the nature of the student-teacher relationships that were experienced. It does not support the view that an inability to cope with the school curriculum, poor academic results or dysfunctional family or peer relationships were involved in the failure to complete secondary schooling.

Conclusion

The comparative data available in relation to socio-economic background, family residential situation and private/public school attendance does not demonstrate any major differences between the study participants and the traditional undergraduate student population at the institution where the study was conducted and it does not appear that the study participants as a whole have membership of a significantly disadvantaged demographic group.

The results of this study indicate that the nature of the student-teacher relationship is the only aspect of the participants' social context that the data indicated was directly correlated to their level of academic achievement at a statistically significant level. The family was identified as influencing achievement indirectly by influencing academic engagement, whereas the peer relationship was shown to act indirectly via the student's capacity to cope with the curriculum complexity. It is apparent that the teacher occupies a position of hegemony in relation to the family and peers in the ability to influence academic engagement, the capacity to cope with the curriculum complexity and academic achievement for the study participants.

The analysis demonstrated that the study participants reported overall positive relationships with their families and peers. The data also demonstrated that the nature of the relationships with teachers during the last 2 years of schooling were of a much lower quality. All of these factors would suggest that the poor nature of the student-teacher relationship has had a significant adverse effect on the academic performance at school for some study participants. A poor student-teacher relationship was demonstrated to have the ability to adversely affect a student's engagement with school and their capacity to cope with the curriculum and, thus, their overall academic performance and ability to be academically prepared for tertiary study. An examination of reported weekly study and absenteeism demonstrated that the student-teacher relationship became even more important for students who are not academically engaged, and for students who report doing no study each week it was the only statistically significant predictor of academic achievement. This findings provide strong support for cultural-social theorists in relation to the important role that supportive social relationships play in effective learning.

The major implications that this study has on educational practice in secondary school and the tertiary bridging program is that educators must be aware of the hegemony that the student-teacher relationship has in respect of the academic experience of students, particularly those who are poorly engaged. Educators of students such as those in this study cannot lay blame for poor academic performance on a poor family situation, the negative influence of peers, an inability to cope with the curriculum complexity or a lack of academic engagement or ability. This study supports the stance that all of these aspects are able to be affected in a positive manner by a good quality student-teacher relationship. The study would also indicate that teacher education programs include a focus on the important role that the student-teacher relationship has in successful learning at the secondary level of education.

The title of this paper poses a question in relation to whether students in the bridging program may be considered to be casualties of their schooling. The Oxford dictionary defines the term casualty in part as "…a person or thing badly affected by an event or situation". It must be emphasised that there is no requirement in the definition of casualty as to intent on the part of any individual to "badly affect" the person and there are no statements being made in this study in relation to intent on the part of any person, particularly teachers, to hinder students' academic experience and endeavours. This research demonstrated that the student-teacher relationship had the dominant influence on the students' capacity to cope with the curriculum, the level of emotional engagement and academic achievement. The influence was seen to increase for students with high levels of absenteeism, low levels of study and those who failed to complete their secondary schooling. Considering that the quality of the student-teacher relationships for these disengaged students was identified as being of a very low level, the stance is supported that some study participants may be viewed as being casualties of school due to the poor quality of the student-teacher relationships experienced.

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