

**The Prediction of Educational Outcomes in the
Adult Learner, using the Theory of Planned
Behaviour and Self-Esteem**

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Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institute of higher learning.

Christine Clark

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(Sign)

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(Date)

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Ethical Approval

This study was approved by Auckland University of Technology Ethics Committee (AUTEC) on the 24th August 2009 for 3 years. Reference Number 09/97.

Abstract

Adult students ($n = 211$) from a Private Training Establishment located in a low socio-economic area of Counties Manukau, New Zealand, were assessed for intent to achieve and actual outcome. Each year in New Zealand approximately 25% of students leaving school do so with no qualifications. It is estimated that in the Counties Manukau Region there are 77,000 adults with no educational qualifications, impacting on earning ability and on self-esteem. Failure rate at tertiary education is high, with 38% of under 18 year olds not achieving, and this figure worsens with age. The cost to New Zealand of having people not in employment, not in education and not in training is estimated to be close to \$1.0 billion per year and in Counties Manukau the cost of youth unemployment is between \$55 and \$73 million per annum.

This study applied The Theory of Planned Behaviour to assess intent to achieve, and was expanded to include a self-esteem component (Rosenberg's Self-Esteem Scale, 1965). The Theory of Planned Behaviour sufficiently predicted intent, and was significantly improved with the self-esteem component. The Rosenberg Self-Esteem Scale successfully predicted outcome, however findings need to be interpreted with caution. The initial self-esteem levels ($M=20.59$), whilst just above the accepted criteria ($M=20.00$) validate other studies indicating that New Zealand has an over-all low level of self-esteem compared with other similar countries. These findings indicate opportunity for future research into the prediction of outcome and ability of learning establishments to mitigate risk of non-achievement for the adult learner. They also support the further investigation of the low level of self-esteem as evidenced in this study.

Introduction

This research investigates the relationship between self-esteem and non-completion of tertiary qualifications at a Private Training Establishment in Manukau, New Zealand. The study is conducted under the tenant that: 1) The Theory of Planned Behaviour and self-esteem both predict intention to complete; 2) Components for the Theory of Planned Behaviour and self-esteem will predict educational outcome; 3) Self-Esteem will increase over the duration of the programme, and; 4) Ethnicity influences; outcome, self-esteem levels and Theory of Planned Behaviour components. Assessing self-esteem alongside the Theory of Planned Behaviour (TPB) may lead to recommendations for remedial changes, encouraging completion and qualification obtainment.

This study will overview the significance of non-completion of study, both on New Zealand society and on the individual, and will use tools to examine the predictability of completion of study. It will examine research related to factors affecting non-completion and methods previously used to predict this. The ability to predict barriers to the learner completing their studies would enable a provider to assist that learner and minimise the risk of non-completion, thereby significantly reducing the number of people failing to achieve a positive outcome.

Education in New Zealand

For the purposes of this study the learner is defined as anyone over the age of 16 years who has left secondary school and is now continuing onto some form of tertiary study. Qualifications that can be achieved by this adult learner range from Level 2 to Level 10 (Appendix A) on the New Zealand Qualifications Framework (New Zealand Qualifications Authority, 2004) and can be obtained through a variety of providers;

universities and polytechnics; public, private and community training establishments (including English language schools); and industry training.

This study, targets learners enrolled at a Private Training Establishment providing programmes from Levels 1 to 4 (Appendix A). Many of these learners are at risk of not completing their qualification, a situation causing alarm throughout educational and governmental departments, and typifying a trend in education throughout New Zealand (Scott, 2008).

In 2007, there were 579,000 students enrolled in all types of formal tertiary qualifications in New Zealand. This figure, reflective of approximately 19% of the population eligible for tertiary learning, reduces by 30% when looking at the numbers completing their studies (Profiles & Trends, 2007). Examining these figures of such poor completion rates, the question must be asked as to why so few learners are achieving qualifications? Any assistance towards recognising barriers to completion must be seen as a valuable tool to the learner, educational facility and society as a whole.

Researchers investigating as to why qualification attainment is low have established that the degree of achievement at secondary school level affects all levels of tertiary study, and is a significant factor for tertiary qualification attainment in the general population (Scott, 2008; Ussher, 2008). Scott (2008) followed the progress of 24,300 New Zealand students who left school in 2004, of whom 49 % had achieved NCEA Level 3 and almost all of them (90 %) enrolled in a Bachelor Degree Level Programme. Of these students, 75 % passed their first year tertiary programmes, 8 % did not pass however stayed on to retry, and the final 17 % failed to complete. Those students with lesser school leaving qualifications passed significantly fewer programmes and had twice the drop out rate of the degree students who had entered with Level 3 NCEA (Scott, 2008). Those with no or very low qualifications upon

entering tertiary studies already face significant obstacles. Many of these students enter into tertiary study with a Private Training Establishment (PTE) as they do not meet the criteria for enrolment with a polytechnic or university. This research will review some of the obstacles these students face and the statistics supporting this evidence.

Scott (2008) states how internationally, New Zealand has one of the lowest retention rates at upper secondary school level in the Organisation for Economic Co-operation and Development Countries, (OECD, 2007). The levels of 15 to 19 year olds not in education or employment identify early school leaving as an issue in New Zealand, with 80% of students enrolled in school after their 16th birthday, compared with 89% for the OECD (see Figure 1), and with much wider disparities for M ori and Pasifika (OECD, 2008).

David Earle, a senior analyst for the New Zealand Ministry of Education analysed information gained from the Adult Literacy and Life Skills Survey completed in 2006.

This survey measured the literacy, numeracy and problem solving skills of 7,131 New Zealanders aged 15 ó 65 years and collected extensive information on the participantø education, employment income and other areas. From this survey Earle (2009) was able to establish that higher English-based literacy and numeracy abilities and higher-level

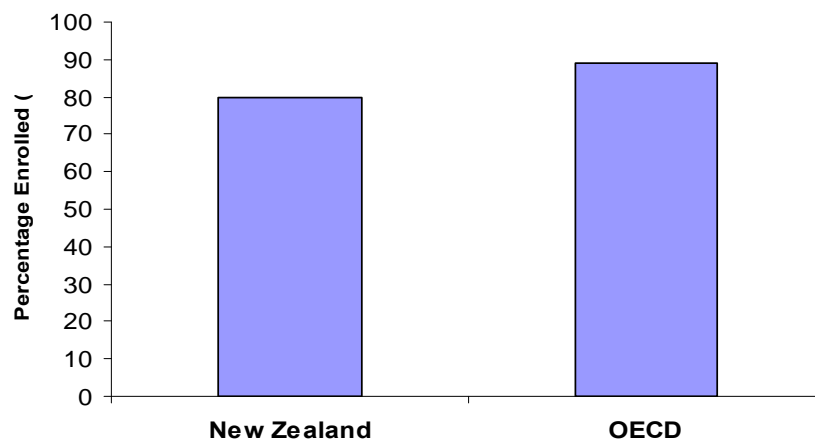


Figure 1: *Number of New Zealand students enrolled in a school aged 16 and over compared to the Organisation of Economic Co-operation and Development (OECD) international percentage of students enrolled in a school, aged 16 and over.*

qualifications are related to proportionally higher hourly wages. This supports other New Zealand studies, for example Ussher (2008) and Scott (2008), that employment and income are directly related to qualification.

Further to this survey Schagen & Lawes (2009) report on the direct correlation, between the higher levels of education, literacy skills, income and general well being (both physical and psychosocial), of the participant. The implications of this, for the region of Counties Manukau, are acknowledged within the demographic over-view.

Counties Manukau Demographics

The New Zealand Index of Deprivation (NZDep, 2006) is used to provide a guide for the economic and social well-being of an area and decimalises New Zealand, with ten being the most deprived areas of New Zealand (Salmond, Crampton & Atkinson, 2007). New Zealand Index of Deprivation Scale develops its grading by using census data (See Table 1).

Table 1: *Variables included in New Zealand Index of Deprivation Scale (NZDep2006).*

| <i>Dimension of deprivation</i> | <i>Variable description (in order of decreasing weight)</i> |
|--|---|
| Income | People aged 18-64 receiving a means tested benefit People living in equivalised households with income below an income threshold |
| Own home | People not living in own home |
| Support | People aged <65 living in a single parent family |
| Employment | People aged 18-64 unemployed |
| Qualifications | People aged 18-64 without any qualifications |
| Living space | People living in equivalised households below a bedroom occupancy threshold |
| Communication | People with no access to a telephone |
| Transport | People with no access to a car |

Based on this information the Royal Commission on Auckland governance (2009) compiled a report on 'The Social Landscape in the Auckland Region'. This report states that the Counties Manukau Region has the highest number of NZDep decile ten areas in New Zealand with 48% of Manukau region and 45% of Papakura being decile eight to ten. These areas are the dominant catchment regions of the students attending the PTE hosting this study.

The Private Training Establishment under study is located in Manukau, two kilometres from the centre of New Zealand's largest city, Manukau (see Figure 2). The population is just over 433,000 people and includes the nation's largest population of Maori and Pacific Island people and the second largest population of Asian people in New Zealand. Nearly 37% (1 160,000) people live in the most deprived areas of New Zealand, as per the Counties Manukau Regional Facilitation Statement, 2008 (Middleton, 2008). Counties Manukau has the largest proportion of youth i.e. aged between 15 and 19, comprising 42% of the population compared with 36% for the rest of New Zealand. Many of these youth have serious problems, usually associated with the socio-cultural conditions within which they live (Middleton, 2008).

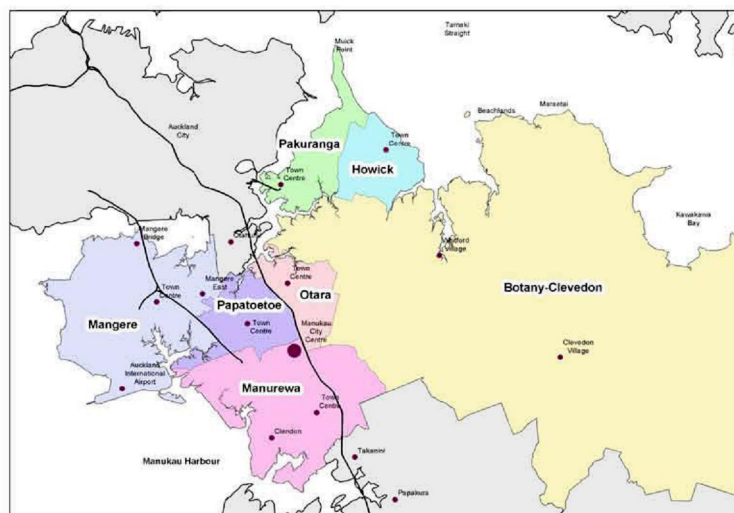


Figure 2: *Map of the Counties Manukau Region, New Zealand. Small spots show main suburbs and the larger spot shows location of the Private Training Establishment involved in this study, Manukau City (Field & Dale-Gander, 2009).*

The 'Developing Resilient Young People in Counties Manukau, a Strategic Plan for Youth Health 2003-2008' examines the problems identified with youth health in the Counties Manukau region and reports on further studies undertaken by Jackson, Palmer, Lindsay and Peace (2001) for the Counties Manukau District Health Board. In this study Jackson et al. (2001) provides information relating to the serious psychological and physical health issues of the young in this region, which are more prevalent than in any other region in New Zealand. Amongst some of the issues is the high incidence of alcohol and drug abuse, with 33% of all students involved in binge drinking and about 25% of male students and 33% of female secondary school students in Counties Manukau reporting a lifetime prevalence of sexual abuse (Jackson et al., 2001).

Counties Manukau, when compared to the rest of New Zealand, has the greatest number of adults (1 77,000) without any qualifications. Retention and achievement in education at the tertiary level in New Zealand appears to be very poor, especially in the geographical area that this study encroaches. A survey completed in 2005 by the Tertiary Education Commission (Education Counts, 2005) found that nationally 38% of under 18 year olds failed to complete a programme of study, this percentage increased with age, 43% of 25-35 year olds and 57% of those aged over 40. These figures are on an average 10% higher in the Counties Manukau Region than any other region. This current study is investigating methods that may assist with limiting the numbers of people who have not completed their qualification. As previously discussed, there is a proven positive correlation between qualification and earning potential (OECD Report 2008; Schagen, 2009; Earle, 2009; Scott, 2009), thus any assistance towards reversing this trend would have far reaching effects.

The Impact of Non-Completion of Education.

The non-completion of a learner has significant implications on all aspects of the life of the learner, society and the tertiary organisation. Stuart Middleton, an educationalist based at Manukau Institute of Technology, has recently published a paper looking at the cost of having youth not in employment, not in education and not in training, referred to as -NEETø(Middleton, 2009). His paper looks at the cost to the individual as well as to society. He cites research by Rumberger (2001), and Godfrey, Hutton, Bradshaw, Coles, Craig and Johnson (2002), which describes the ramifications upon both the individual and society. The person who drops out of secondary education with no qualifications is more likely to be ÷unemployed, living in poverty, receiving public assistance, in prison, unhealthy, divorced, and ultimately single parents with children who drop out from high school themselvesö (Middleton, 2009). This is also supported by other research identified in Research as Evidence (2007) describing males born in 1970 that had experienced six months or more of NEET status were:

- Three times more likely to have depression.
- More than four times more likely to be out of work.
- Five times more likely to have a criminal record.
- Six times less likely to have qualifications.

Other New Zealand research supports these findings. An Ernst and Young Report commissioned in 2005 by the Manukau City Council identified a large number of ways in which youth unemployment potentially gives rise to economic costs, some of which will be borne directly by the unemployed youth and some by society more generally. This report was able to quantify cost associated with direct and indirect

effects of lower current and future incomes, adverse health outcomes and effects of youths' psychological well-being, and crime-related costs. They estimated that the total cost of youth unemployment in Manukau City is between \$55 and \$73 million per annum (Ernst and Young, 2005).

Impact of Non-Achievement Internationally.

Similar findings are reported in the United Kingdom. A report prepared for the United Kingdom Department for Education and Skills in 2002 provided estimates of costs associated with NEETs aged 16-18 years (Godfrey et al., 2002). Although this report was limited, the combined cost per person NEET at age 16-18 years over a lifetime, was estimated at almost £100,000. In the United Kingdom the NEET group numbers are around 1.3 million with an annual cost to the UK of £3.65 billion (Hayes, as cited in Middleton, 2009). In New Zealand dollar terms this is an estimated cost to the community of around \$75,000 per NEET youth each year, similar figures to those of New Zealand (Middleton, 2009). It was estimated that should 10% of the U.K. NEET population become productive, the saving to the economy would exceed £100 million, unfortunately no similar figures are available for New Zealand.

A study carried out in Michigan in 2000 calculated the financial costs incurred by Michigan businesses and institutions of higher learning when students leave high school without learning basic skills, and used this as a basis for calculating the cost to the entire United States (Greene, 2000). Greene stated "Equating this to the entire United States, the lack of basic skills costs a total of approximately \$16.6 billion each year. In addition to these monetary costs, the human costs are incalculable" (Greene, 2000, p. 1).

A recent United States report, "The Silent Epidemic: Perspectives of High School Dropouts" (Bridgeland, Dilulio, & Morison, 2006), highlighted the reduced

ability of dropouts to maintain employment and support themselves, maintain reasonable health, and to stay clear of the criminal justice system. This study reported that students who do not achieve high school graduation earn an average of \$9,200 less per year than high school graduates, and about \$1 million less over a lifetime than the college graduate. Also of relevance is the association between education and good health. At every age range, the more education received, the healthier the individual. Among Americans over 45 years of age, college graduates are twice as likely as dropouts to report being of excellent or very good health (Baum & Payea, 2004).

Still discussing the United States, four out of every 10 young adults aged between 16-24 who lacked a high school diploma received some type of government assistance in 2001, and a dropout is more than eight times as likely to be in jail or prison as a person with at least a high school diploma (Harlow, 2006). Studies show that the lifetime cost to the nation for each youth who drops out of school and later moves into a life of crime and substance abuse ranges from \$1.7 to \$2.3 million U.S. (Snyder & Sickmund, 2006).

Impact on the Educational Facility.

Little research has examined the cost of dropouts to the educational institution. The Oxford Review of Education, reviewing the cost of dropouts on 19 Colleges (Fielding, Belfield & Thomas, 1998), cites a figure from the Audit Commission/Office for Standards in Education (1993) of £500m for a year as cost of the dropouts from A Level programmes. Fielding (1998), clearly disputes the validity of this figure however Fielding provides a thorough discussion on the implications of the 20% of dropouts on resources, staff allocation, educational effectiveness, and allocation of funding both within the institution and within the sector.

Future discussion could include the disruption to class and the decreased opportunity to those not able to enrol on that programme due to a roll that has been close off due to no further places being available. Damage to the reputation and therefore recruitment opportunities to the private sector has also not been costed. With the focus on seats of funding to the Private Tertiary Sector in New Zealand, any person not completing is a direct daily cost until replaced, if replacement is an option. The non-completer also costs the provider if they are not a positive outcome after 60 days. After this time period, if the person is not in employment or training, the institution will be awarded a negative outcome rating (Tertiary Education Commission, 2010). Too many negative outcomes will result in the funding for that programme being removed the following year, or a decrease in funded opportunities will be allocated. Many PTEs in New Zealand have had funding significantly reduced due to poor performance that is, too many negative outcomes.

The Private Training Establishment

The PTE used in this study offers a range of training options:

- Youth Training; aimed at 16 to 18 year olds, provided by the Preparation for Defence Forces Programme and the Retail and Customer Services Programme. Both are of 40 to 48 weeks in duration and staircase into limited employment and further education. These two programmes are at Level 2 on the NZQA Framework.
- Training Opportunities Programmes; learners are aged 18 years plus. These programmes are in response to local demand, for example, Lifeguards for Manukau City Council, a 20 week programme at Level 2, and the Ambassadors, a Level 1 programme. The Ambassador Programme recruits the mature, long term unemployed, trains them in basic skills over eight weeks and then provides Town Centres with local people to attend to customer service and community care for a period of six months. During this

time the Ambassadors look for permanent employment. The lifeguards are employed by Manukau City Council as Pool Attendants for the summer months and many are offered full term contracts.

- Foundation Learning Programmes of which there are three types: first, preparation for entry into the Defence Forces/Police. Second, preparation into the health care industry, and third, entry into the early childcare industry. The PTE provides four consecutive programmes for both health care and Defence Forces but only the one for early childcare. Age range; 16 to 45 years.
- Health Care Level 4 Programmes: There are two programmes, one of which receives Government Student Achievement Funding and provides people already in employment with the opportunity to up-skill and gain health care qualifications. The other programme is similar content; however the learners are in-house for 40 weeks. Age range is 16 to 45 years.
- The Pilot: An initiative the PTE was asked to develop, integrating secondary school students into a tertiary environment. The programme provides unit standards from Levels 1 to 3 and students will gain numeracy, literacy and health care credits, as well as attend their local secondary school for a proportion of the week.
- In-work; a programme designed with an employer, upskilling their workforce in numeracy and literacy with a particular emphasis on applicability in the health care arena. This is at Level 2 on the qualifications framework.

All programmes, with the exception of the Ambassadors, include numeracy and literacy, with a number of core unit standards (Level 1-3) promoting health and safety, first aid and personal management. These promote a belief in learning and provide a basis on which the learner can go onto higher level tertiary study. Over 50% of learners later enrol at the Manukau Institute of Technology, a local polytechnic. Positive outcomes for this provider are approximately 75-80%, 15 to 20% higher than the stated

requirement from the Government funding organisation; the Tertiary Education Commission.

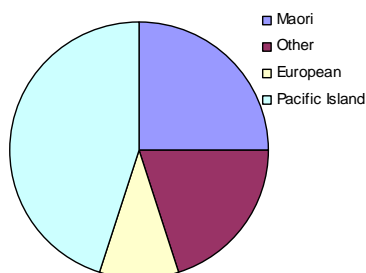


Figure 3: *Ethnic groupings of students enrolled in the Private Training Establishment involved in this study, between the ages of 16 and 60 years old.*

The age range of the students is 16 to 60 years, and ethnicity (see Figure 3) is approximately 45% Pacific Island, 25% Maori, 10% European and 20% other (e.g. Asian, Iranian, Indian and African). The students come from a wide range of backgrounds and many have stressors that encourage non-completion of their programme. Financially, this impacts on the funding and viability of future programmes for the PTE, on the socio-economics of the region, and on the personal development of the learner (Middleton, 2009; Schagen, 2009). The ability to be able to predict a learner vulnerable to not completing a programme would enable the tertiary provider to instigate remedial initiatives to lessen this occurrence and obviously negate the adverse consequences of non-achievement.

Predicting Learning Outcomes

The ability to predict outcome in education and a tool predicting risks to completion could lead to approaches to greatly enhance the student's potential in all areas of their life, improve the provider's results and therefore their credibility, funding and future endeavours, regional and national growth and societal wellbeing.

Literature is available that discusses the ability to predict learning outcomes. Davis, Ajzen, Saunders and Williams (2002) conducted a four year longitudinal study of African American High School students. Using the Theory of Planned Behaviour the researchers were able to predict intentions and actual graduation, 262 completing the first questionnaire and 166 graduating. This student population was of high -at risk- students, similar to those involved in the present study. The research concluded that factors such as early education of the consequences of non-completion, if used positively in a remedial manner, could facilitate an improved outcome ratio.

Bridgeland, Dililio and Morrison (2006) examine the -dropout- epidemic occurring in the United States and report that in 2003 there were 3.5 million youth aged 16 to 25 who did not have a high school diploma and were not enrolled in school. They establish that there are nearly 2,000 high schools in the United States that have low graduation rates and that these schools are concentrated in 50 large cities. In more than 20 of these cities, 75 % or more of the students attend public high schools where graduation is less than 60 %. A recommendation from the Bridgeland study was that a tool be developed to predict dropouts and to facilitate intervention.

Although literature regarding the prediction of learning outcomes is limited there are many studies overseas and within New Zealand that have examined the reasons why students do not achieve at school (Middleton, 2009; Scott, 2008; & Ussher, 2008). The major causes are classified under the categories of:

1. Social pressure and related stressors, for example drugs.
2. Self-efficacy in relation to being able to achieve.
3. General attitude toward achieving, which is often influenced by past experiences of education.
4. Self-esteem levels sufficient to enhance achievement.

Social pressures and the perception of being able to achieve has been discussed by Ajzen (1991) as being a part of the Theory of Planned Behaviour. Social pressures are an important component of subjective norm factor, one of three factors of the Theory of Planned Behaviour (TPB) (see Figure 4). The other two are; self-efficacy in relation to being able to succeed, classified by Ajzen (1991) as perceived behavioural control, and the third is attitude. As the TPB encompasses three of the four identified factors and provides indication towards intent it would be logical to use this theory as an investigative tool. The fourth major cause, self-esteem, is to be discussed at a later stage.

Theory of Planned Behaviour

The TPB is a tool used by many researchers to predict intention and outcome in human behaviour, including that related to education (Davis, Ajzen, Saunders & Williams 2002; Phillips, Abraham & Bond, 2003; Cammoc, Carragher & Prentice, 2009). The theory will now be discussed in more detail.

The Theory of Planned Behaviour (TPB; Ajzen, 1991) is a tool commonly used to study human behaviour and predicts intention of behaviour (i.e., motivation). Ajzen posits human behaviour is guided by three beliefs;

1. Behavioural beliefs ó beliefs about the consequences of behaviour which produce an attitude towards that behaviour.
2. Normative beliefs ó beliefs about the normative expectations of other people which results in a perceived social pressure or subjective norm.
3. Control beliefs ó beliefs about the presence of factors that may encourage or hinder performance of the behaviour and give rise to perceived behavioural control.

The theory combines three factors (attitude, subjective norm, and perceived behavioural control), which contribute to intent and therefore affect behaviour (see

Figure 4) and, in the current study, possible learning outcomes. The TPB can be expressed as shown in Equation 1.

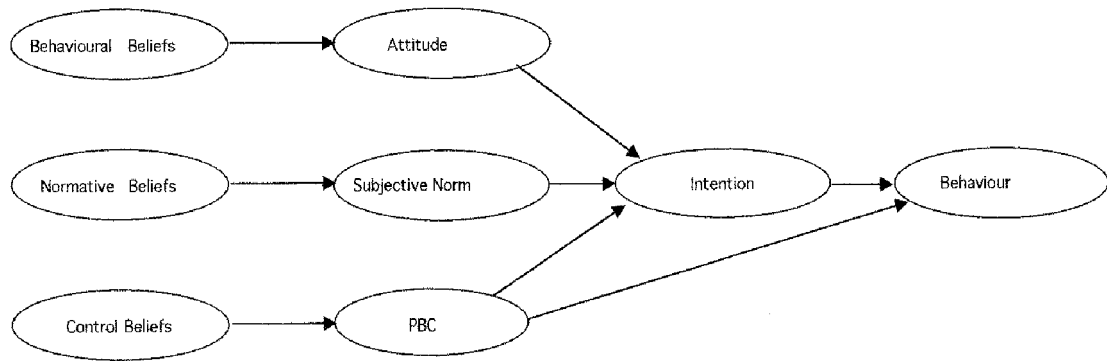


Figure 4: Model of the Theory of Planned Behaviour (Ajzen, 1991).

$$BI = (W_1)AB[(b)+(e)] + (W_2)SN[(n)+(m)] + (W_3)PBC[(c)+(p)] \quad (1)$$

Where:

BI : Behavioural intention

AB : Attitude toward behaviour

(*b*): the strength of each belief

(*e*): the evaluation of the outcome or attribute

SN : social norm

(*n*): the strength of each normative belief

(*m*): the motivation to comply with the referent

PBC : Perceived Behavioural Control (*c*): the strength of each control belief

(*p*): the perceived power of the control factor

W : empirically derived weight

It has already been established that this tool has achieved validity in prior research regarding education (Davis et al., 2002). A further example of this was research undertaken by White, Thomas, Johnston and Hyde (2008) who used TPB to predict attendance of first year university students at peer assisted study groups. Using hierarchical regression analysis their research established that attitude; in addition to perceived behavioural control were strong indicators of intention and that intention

predicted attendance. The discussion continued by suggesting that these results be used to modify existing attitudes in students by implementing marketing campaigns to change existing negative attitude towards study groups. This study did not find that subjective norm was a strong indicator of intention to attend.

Ajzen (1991) stated that subjective norm appeared to have varying influences on intent and therefore on behaviour. Subjective norm, the social factor referring to the perceived social pressure to performing or not performing behaviour, appears to be the one factor of the TPB returning inconsistencies in results (White et al., 2008; Ajzen & Cote, 2008). Armitage and Connor (2001) agree with the conclusion of White et al. In their review of 185 independent studies that used TPB as a tool, they conclude that subjective norm was the weakest component in predicting intentions and that intention was the strongest factor in predicting behaviour. They discuss the influence of perceived behavioural control over prediction of behaviour and concede that this alone may be used to forecast intent and outcome.

A study with slightly differing results was that of Davis, Ajzen, Saunders and Williams (2002) using the TPB to predict the completion of high school by African Americans, a population not dissimilar to that of this proposed research. Attitudes for these students were related to beliefs about short and long term consequences of study. Subjective norms reflected perceived expectations of family, teachers and friends and the control considerations included concerns regarding academic ability, previous conflict with peers and teachers and risk to study from their general living situation. Davis et al. (2002) concluded that TPB provided an accurate prediction of intentions to stay in school with attitudes toward completing the year, subjective norms, and perceptions of behavioural control accounting for 51 % of the variance in intentions. Attitudes and subjective norms made significant contributions to the prediction, but the strongest indicator was again associated with perceived behavioural control, suggesting

that the perceived ease or difficulty of completing the school year played a major role in the formation of intentions.

Perceived behavioural control plays an important role in the TPB. Bandura's (1982) research also indicates that behaviour is strongly influenced by the individual's confidence in their ability to perform, that is, their perceived behavioural control. Bandura postulates that perceived behavioural control is most closely related to self-efficacy which is concerned with judgements on how well one can execute action required to deal with prospective situations. This is different to self-esteem which is a personal judgment of worthiness that is expressed in the attitudes the individual holds toward himself (Pajares & Schunk, 2001). The TPB places the construct of self-efficacy beliefs within the realm of perceived behavioural control and ultimately within the general framework of the relationship between beliefs, attitude, intentions and behaviour. White et al. (1994) cite Fazekas, Senn and Ledgerwood (2001) who discuss perceived behavioural control (PBC) and self-efficacy as being conceptually different components, however still under the construct of behavioural control. They describe perceived behavioural control as pertaining to the belief that expected outcomes will result from a particular behaviour, whilst self-efficacy refers to an individual's belief that she or he is capable of performing a particular behaviour. Whilst PBC may appear to be the dominant factor within these three components, the study by Fazekas et al. (2001) did confirm that all three factors of attitude, subjective norm and perceived behavioural control contribute towards intention of behaviour, the main focus of the TPB.

According to the TPB, intention to perform behaviour is the central determinant of behaviour. Intentions are indications of motivation; of how hard people are willing to try, of how much effort they are planning to expend in order to perform the behaviour. The stronger the intention to engage in behaviour, the more likely the

performance will occur. Consideration must also be given to the degree in which the behaviour is under volitional control. Intention is usually influenced at least to some degree by non-motivational factors such as availability of opportunities and resources (e.g., time, money, skills, co-operation of others). Collectively, these factors represent people's actual control over the behaviour, thus although the individual may intend to perform a behaviour the actual outcome may differ (Ajzen, 1991).

Using the TPB, Davis, Ajzen, Saunders and Williams (2002) examined the probability of a group of African American students completing study, therefore an investigation, in essence, similar to this present study. Davis et al. claimed that they were successfully able to predict outcome by using this methodology. Davis et al. (2002) suggests that early prediction may be used as a remedial tool for the institution. The ability for an educational facility to assess the individual's intention to achieve and their actual control over achievement would greatly enhance the possibility of success for the individual, as remedial steps could be instigated should the TPB identify areas of threat to completion. The individual components of the TPB will now be discussed in more detail.

Subjective Norm

The first major threat to completion has been previously described as relating to social pressures and related stressors. For the purposes of this study these social pressures come under the broader classification of subjective norm. Subjective norms are a person's own perception of the social pressure to perform or not perform certain behaviours. Subjective norms are thought to have two components which interact towards intention; beliefs about how other people, who are some in way important to the person, would like them to behave (normative beliefs). For example; 'I feel pressure from my parents to stay at school'. The second component is positive or negative

judgements about each belief (outcome evaluations), for example; 'doing what my parents think I should do is important/unimportant' (Francis, Eccles, Johnston, Walker, Grimshaw, Foy, Kaner, Smith & Bonetti, 2004). There is significant literature that confirms the importance of social pressures affecting behaviour, particularly relating to studies undertaken in the United States. Following is a review of four of these studies, followed by other overseas findings.

A longitudinal study by Davis et al. (2002), conducted over four years in a large urban high school in the mid United States of 1200 students, discusses past studies on high school dropouts in the US that have looked at a variety of factors related to the individual student, the student's family, peers, the community, and the school. It confirms that factors that have been shown to correlate with dropout rates are; gender, ethnicity, parental education, scholastic ability and achievement, self-esteem, socio-economic status, drug and alcohol use, parental involvement, peer relations, school climate, class size, and participation in extracurricular activities. As with the Counties Manukau Region, this study reports that dropping out of school has particularly negative consequences for members of ethnic or racial minorities.

In the United States, Stinebrickner (2003) examined the outcomes of 2831 students of comparable ages and income to those involved in the present research, that is, the majority of these students came from very poor families. Of the students studied only 11% had graduated from College. His findings conclude that it is not the actual cost of education that is the dominant factor influencing school completion, as previously thought, but rather, it is the social and parental influence or lack thereof. Stinebrickner (2003, p. 593) describes 'students from low-income families may, on average, attend lower quality elementary and secondary schools, receive less encouragement from their families to take advantage of beneficial schooling opportunities within a particular school, receive less educational instruction at home, be

less likely to have parents who stress the importance of obtaining a college degree, or receive less encouragement to remain in college when academic or social difficulties arise during college.

Martinez (2004, p. 128) describes factors that hinder or promote academic success amongst Latino youth living in Oregon. He notes that school success is among the most important correlates of overall physical, mental, and social well-being and that poor academic performance is known to be related to a host of other important outcomes for youth including substance use, delinquency, and associations with deviant peers. Students who dropout from school have lower income, greater unemployment, are significantly over represented in the adult corrections population, and are more likely to require social services during their lifetimes compared to high school graduates (Martinez, 2004). Reasons given for non-completion include discrimination, institutional barriers, lack of parental involvement, poor self-esteem, confrontational behaviour forcing correctional behaviour by the school, requirement to seek employment and failure (Martinez, 2004). This study of 564 participants describes the typical social pressures experienced by many students, which are for the purposes of this investigation described as subjective norm.

Whitesell, Mitchell and Spicer (2009) discuss the importance of social pressure, lack of support from parents, friends and teachers and related stressors as being major contributors to non-achievement of students. Their study, taken over a period of three years, examined over 1600 American Indian adolescents and their academic success. Their conclusion supports the importance subjective norm plays in the contribution to achievement (Whitesell et al., 2009).

Literature other than from the United States is not quite as evident, however Rennison, Maguire, Middleton and Ashworth (2005) discuss how people in the United Kingdom NEET group are more likely to come from households with parents not in

employment, dependant on financial assistance, have parents with no or low educational qualifications and/or live in the social housing sector. They were frequently truant from education by choice both created and reinforced by social influences. Many of these people now had caring responsibilities themselves, perpetuating the cycle started by their parents, or their parents before them (Rennison et al., 2005).

Closer to New Zealand, Lamb, Dwyer and Wyn (2000) reviewed non-completion of Australian youth using a longitudinal study based during the 1980-1990s. Concern has been raised by the Australian Government that over 30% of all 16 to 17 year olds fail to finish school. This compares similarly to 30% African American students failing to complete and the 24% in Counties Manukau. Lamb et al. (2000) report again replicates the findings that non-completion is related to social background. Non-completers are much more likely to come from lower socio-economic backgrounds with parents usually in unskilled work and with low qualifications. The non-completers discuss dissatisfaction with school, failure, poor self-esteem, needing to earn money and requirement to go on to lower level tertiary study as the main reasons for leaving.

Research pertaining to New Zealand describing the mitigating social factors of non-completion in education has been discussed previously, with contributing researchers being Middleton (2008, 2009), Scott (2008) and Ussher (2008).

Perceived Behavioural Control

The second major cause of students not achieving a qualification has been described as self-efficacy in relation to being able to achieve. For the purposes of this study we will use the broader classification of perceived behavioural control (PBC) as described by Ajzen (2002). This is conceived of two components, the first being self-efficacy, which is the perceived ease or difficulty in performing a behaviour, and the second component being controllability or the extent to which the performance of the

behaviour is up to the individual. Bandura (1994) reinforces this construct using the same concepts in his definition of self-efficacy, combining both the person's confidence in their ability to plan and execute a programme of action with their ability to have control of that action. Bandura (1994), however extends his construct establishing a close relationship between self-efficacy, control, self-esteem and pro-social development. Those individuals who exhibit a high level of confidence and control and have high self-esteem, are also likely to demonstrate pro-social behaviour, those individuals who are unable to demonstrate these attributes are more likely to participate in anti-social behaviour and to be non-successful in contributing to their future (Meinhold & Malkus, 2005). There is evidence that self-efficacious students participate more readily, work harder, persist longer, and have fewer adverse emotional reactions when they encounter difficulties than do those who doubt their capabilities (Zimmerman, 2000).

The current view of perceived behavioural control is most compatible with Bandura's (1982) concept of perceived self-efficacy which is concerned with judgments of how well one can execute programmes of action required to deal with prospective situations. Bandura's research indicates that behaviour is strongly influenced by the individual's confidence in their ability to perform, that is, by perceived behavioural control. Self-efficacy beliefs can influence choice of activities, the preparation for the activity, the amount of effort expended during the behaviour as well as the thought and emotional reactions to the behaviour (Bandura, 1991). The Theory of Planned Behaviour (TPB) places the construct of self-efficacy belief within the bounds of perceived behavioural control. Studies that have found PBC to be a significant factor include those that will now be discussed.

Davis et al. (2002), using the Theory of Planned Behaviour (TPB) studied the intentions and actual outcomes of 1200 African American students in a large urban high

school located in the mid United States. Although combining other factors within their research they concluded that perceived behavioural control made a particularly strong contribution to the prediction of intentions, indicating that many students were concerned about their ability to overcome obstacles in their lives that might prevent them from carrying out their intentions to stay in school. The pattern of results indicated that among the important control factors indicated by these students included; perceived weaknesses in academic skills, distracting life situations that caused students to be too tired to attend school, and conflicts with other students, teachers or staff. This study concluded that TPB could be used to accurately predict intention and outcome and provide information that may be used as measures of intervention. Perceived behavioural control in association with attitude, in particular appears to be a strong indicator of intention especially in relation to academic forecasting of outcome.

Research by Lane, Lane and Kyprianou (2004), investigating the relationship between academic success, self-esteem and self-efficacy, conclude their study of 205 post-graduate students noting that the predictive effectiveness of self-efficacy in the academic setting cannot be ignored and should be used as a tool to increase outcomes. They also note the importance of self-esteem.

White et al. (2008) used the Theory of Planned Behaviour to predict attendance at study sessions of 77 first year psychology students and found that the component of perceived behavioural control (PBC) as well as attitude, was a significant factor in determining intention to attend study sessions, however subjective norm was not. The authors suggest a number of ways these results could assist the educational facility, focussing on the PBC factor that could enhance student attendance as well as improve their marketing strategies, an aspect of use of the PBC not considered in the past.

Whitesell, Mitchell and Spicer (2009) also examined PBC during their study of 1,611 American Indian students. This is a group who typically have a very high dropout

rate, especially amongst those in the first year of university and are students usually from low socio-economic circumstances. Factors determined to promote non-completion included; the anti-social behaviours of alcohol and drug abuse and problematic behaviour. Personal resources, that is; ability to problem solve, feelings of self-worth, perceived competencies and internal locus of control were examined and found to be lacking. Perceived behavioural control, specified as self-efficacy was determined to be low in those students who dropped out (Whitesell et al., 2009).

Attitude

The third major contributor to non-achievement of qualifications is attitude, one of the most important determinants of behaviour (Kraus, 1995).

Ajzen and Cote (2008, p. 289) define attitude as 'the disposition to respond with some degree of favourableness or unfavourableness to a psychological object' and describe attitudes as being acquired rather than innate with a direct influence on behaviour. Ajzen (1991) refers to two different types of attitude; global attitudes, where no particular action will result, and a more specific attitude called 'attitude towards behaviour', where behavioural change is expected. Attitude towards behaviour includes a favourable or negative evaluation of the specific behaviour in question. Ajzen (1991) analysed several studies that used the TPB and concluded that attitude was a strong indicator of intention to perform behaviour. He further argued (1995, as cited in Ajzen & Cote, 2008) that attitudes had little value unless used to predict overt behaviour. He continues with the statement that attitude towards a specific behaviour rather than a global attitude is more predictive of intent and purpose, therefore the TPB is a popular tool for prediction of specific behaviour, as in this research.

Research into the importance of attitude has been confirmed by Pooley and O'Connor (2000) studying the influence of attitude on behaviour, especially in relation

to education. They report a widespread acceptance within the psychological literature that attitudes can be based on different sources of information from the cognitive, affective, and behavioural domains.

Healey (2004), a United Kingdom based researcher, examined the impact that poor attitude, demonstrated as delinquent behaviour, from a cohort of adolescent boys had on their employment opportunities. This study has particular relevance as the participants were boys who were from very similar backgrounds as those from the PTE involved in the current research. These boys exhibited similar behaviours, were from similar socio-economic backgrounds and similar ages. At ages 18 and at age 32 the boys were asked about their employment/income history. Healey (2004) found that those boys who had been identified by their schools as having poor attitude, exhibited as being 'delinquent and troublesome' had a significantly higher probability of experiencing long periods of time out of the workforce prior to age 32 and lengthy periods of unemployment and/or low paid work at both age 18 and at age 32.

A further study, undertaken by Meinhold and Malkus (2005) examined how attitude, in conjunction with two additional variables; self-efficacy and knowledge, impacted on changing behaviour. The conclusion was that the most significant factor in behavioural change is attitude, however combining this with knowledge increases the degree of behavioural change (Meinhold & Malkus, 2005). They also note the surprising insignificance of self-efficacy within their findings, however attribute this to a confusion between self-efficacy as a moderating variable and self-efficacy as an independent variable. There may also have been a gender bias. Females with significant self-efficacy have a stronger correlation between attitude and behaviour than those found to have low self-efficacy and males established no relationship between attitude, behaviour and self-efficacy.

A report ordered by the New Zealand Ministry of Education and undertaken by Scott (2008) discusses a number of research projects looking at tertiary studies. This report describes a study by Meyer, McClure, Walkey, McKenzie and Weir, conducted in 2007, which surveyed just over 100 post-secondary students who had left school in 2005. They conclude that although the sample size was small, it did indicate that the majority of the Year 13 students who exhibited positive attitude in 2005 were predominantly still studying at university, implying that attitude is important. The fourth classification for non-completion, self-esteem will now be discussed.

Self-Esteem

The fourth major contributor to achievement is self-esteem, which has been cited by many studies (see Pepi, Faria, & Alesi, 2006; Baumeister & Tice, 1985; Lane, Lane & Kyrianiou, 2004). Self-Esteem is also the primary factor of the hypotheses for the current research.

Self-Esteem as described by Rosenberg (1965) (cited in Lane, Lane & Kyrianiou, 2004, p.1) refers to "an individual's sense of value or self-worth, or the extent to which people value, appreciate or like themselves". Low self-esteem implies dissatisfaction and self-rejection (Kavas, 2005). Gray-Little, Williams and Hancock (1997, p. 443) discuss self-esteem as being a "global, uni-dimensional construct, as a composite, summarizing several different domains (home, work, social); or as a self-regard in a specific area of functioning, for example academic self-esteem". The concept of a uni-dimensional construct of self-esteem has been debated over a number of years and further discussion will follow.

Petersen, Louw & Dumont (2009, p. 102) provide various definitions and structures of self-esteem including "the individual's positive or negative attitude toward the self as a totality" and "a personal resource necessary for positive psychological

adjustment to stressful life transitions. They state that individuals with high levels of self-esteem perceive themselves to have the ability to complete certain tasks adequately, employ effective coping strategies and manage their resources well. Other descriptors include the positive association between self-esteem and several social and academic-related factors, including psychological well-being and academic performance (Petersen et al., 2009). Bosson and Swann (1999) discuss the inter-connectedness between high and low self-esteem and state that a high self-liking is not a prerequisite for high self-competency and vice-versa. A person may have a low self-liking and a high self-competency (Bosson & Swann, 1999).

Guindon (2002) integrated several definitions of self-esteem and defined it as "the attitudinal, evaluative component of the self; the affective judgments placed on the self-concept consisting of feelings of worth and acceptance, which are developed and maintained as a consequence of awareness of competence, sense of achievement, and feedback from the external world" (Guindon, 2002, p. 187). Kavas (2009) discusses the consequences of self-esteem and notes high self-esteem may be associated with an overall sense of well-being, whereas low self-esteem may be related to risk behaviours and negative developmental outcomes. He posits that individuals with low self-esteem are more predisposed to adopt risky behaviours often exhibited by delinquent youth, including alcohol and substance use. These students with low self-esteem, exhibiting socially unacceptable behaviour are often the students who fail to achieve.

Rosenberg (1965) the principle developer of a much referred to self-report tool of self-esteem assessment, the Rosenberg Self-Esteem Scale (RSES), originally argued that self-esteem was a uni-dimensional construct. Over the next thirty years various researchers examined and argued for and against this theory until Rosenberg, Schoenbach, Schooler and Rosenberg (1995), re-examined the initial construct of self-esteem and described a new model consisting of two factors; global self-esteem

(see Table 2) and specific self-esteem. Global self-esteem is seen as being more relevant to psychological well-being (depression, general anxiety, resentment, anxiety-tension, irritability, life satisfaction, happiness, and negative affective states) and specific self-esteem being more relevant to behaviour, especially academic (Rosenberg et al., 1995). Specific self-esteem is expected to have stronger effects on behaviour than global which is more aligned to emotions. Global self-esteem is less likely to have an effect on behaviour as its main factor is self-acceptance or self-respect (Rosenberg et al., 1995). They also hypothesized that specific self-esteem should have a stronger influence on academic achievement than global self-esteem, which was confirmed in their findings. Global self-esteem had very little effect on scholastic achievements whereas specific self-esteem had a strong effect. Rosenberg et al. (1995) comments that it is important to differentiate between the two self-esteem factors as many educationalists are in fact implementing programmes in educational facilities to improve academic performance, however, these programmes do not address specific self-esteem, but rather the global self-esteem which has no direct relationship with academic success nor behaviour.

Owens (1993) also examines global self-esteem as a factor within the RSES and describe the positive and negative components (see Table 2) within global self-esteem as comprising general self-denigrating and general self-affirming subscales, or critical self-depreciation and positive self-confidence components. Self-depreciation and self-confidence measurement (Rosenberg et al., 1995) is based on the responses to specific questions of the RSES (see Table 2).

Sigg (2009) adds to the discussion of the development of the Rosenberg Self-Esteem Scale (RSES) (1965) from being the original uni-dimensional scale, to that of being a scale exhibiting two factors. Sigg argues that two RSES factors manifest a fundamental dichotomy of both negative and positive self-esteem, represented in the statements such as 'I have little worth as a person' and 'I have a lot of worth as a

person. Sigg also present the findings of Tafarodi and Milne (2002) and Tafarodi and Swann (1995) who support the dichotomy argument stating, albeit with a differing view, that the two factors represent two distinct but correlated dimensions of self-esteem, the first being; self-competence as assessed within the statement of 'I am able to do things as well as most other people', reflective of an objective form of self-evaluation. The second as self-liking, assessed within the statement of 'at times I think I am no good at all' reflecting a more subjective form of self evaluation.

Schmitt and Allik (2005) exploring the cultural specific features of the RSES, extend the self-liking and self-competence factors into those reflecting the collectivistic and individualistic nature of the culture. Those cultures displaying high self-competency scores are generally considered to be of an individualistic nature; that is work towards the fulfilment of self, such as the United States and New Zealand. Those countries exhibiting high self-liking scores are usually perceived to be of a collectivistic culture, working towards the good of the group, such as in Asia. (Chung & Mallery, 1999).

Table 2: Rosenberg's (1965) Self-Esteem Scale items categorised by; Global Self-Esteem, Self-Confidence and Self-Depreciation subscales, and Positive and Negative subscales.

| Rosenberg SES Questions | Global Self-Esteem | Self-Confidence and Self-Depreciation | Positive and Negative |
|--|---------------------------|--|------------------------------|
| 1. I feel that I am a person worth, at least on an equal plane with others | Global | Self-Confidence | Positive |
| 2. I feel that I have a number of good qualities | Global | Self-Confidence | Positive |
| 3. All in all, I am inclined to feel that I am a failure | | | Negative |
| 4. I am unable to do most things as well as most other people | Global | Self-Confidence | Positive |
| 5. I feel I do not have much to be proud of | Global | | Negative |
| 6. I take a positive attitude toward myself | Global | Self-Confidence | Positive |
| 7. On the whole, I am satisfied with myself | | | Positive |
| 8. I wish I could have more respect for myself | | | Negative |
| 9. I certainly feel useless at times | | Self-Depreciation | Negative |
| 10. At times I think I am no good at | Global | Self-Depreciation | Negative |

all

Note: Question numbers as per original Rosenberg (1965) Self-Esteem Scale. Global Self-Esteem questions as proposed by Rosenberg et al. (1995). Positive and Negative subscale items as proposed by Owens (1993). Self-Confidence and Self-Depreciation subscale items as proposed by Rosenberg et al. (1995).

Baranik, Lakey, Lance, Hua, Meade, Hu and Michalos (2008) examine the differential item functioning of the RSES across eight countries. They discuss the nature of responses to the negative and positively worded items of the RSES, indicating that the collectivistic countries tend to relate to the negatively worded items and vice versa for individualistic countries. Gray-Little et al. (1997) examine the RSES using an item response analysis and consider the two factor findings as being possible, looking at the negative and positively grouped responses as well as the self-liking, self-competency rationale. They state that the original uni-dimensional format of the RSES is still the most appropriate format. This current study uses the Rosenberg (1965) scale to measure self-esteem as self reported by the learners and will further explore the two factor aspect of self-esteem.

Self-Esteem and Outcome

Several studies discuss the significance of self-esteem and outcome, often with self-esteem investigated alongside other variables. A few of these studies will now be explored.

Recognition of the research on poor educational outcomes among African Americans by Davis et al. (2000), is warranted for the provision of the subset of variables identified in the investigation of dropouts in general, on poor academic performance and on the decision to leave school (Davis et al., 2000). The variables found were;

- The socio-economic environment
- Drug and alcohol use
- The effects of global self-esteem

The first two variables contribute to subjective norm, social pressures and related stressors, as previously discussed as being a component of TPB. The latter factor, global self-esteem, is acknowledged as a contributory factor within the RSES (Davis et al., 2000).

Three years later Baumeister et al. (2003) examined the extensive literature relating to self-esteem and the relationship between success, happiness and healthier lifestyles, disputing the vast amount of research suggesting that high self-esteem is a requirement to achieve. They review a meta-analysis undertaken by Hansford and Hattie (1982) of 128 studies involving more than 200,000 participants. These studies explored an array of measures of self-regard (mostly self-esteem) and a variety of objective performance measures, most of which were achievement tests, and concluded that overall there is a significant positive relationship between self-esteem and academic performance. Baumeister et al. (2003) comments that self-esteem is implicit in academic achievement, and reciprocally, that achievement increases self-esteem. This research compliments that of Rosenberg et al. (1995) who promoted the differentiation between the two factors of self-esteem, especially when looking at devising programmes to improve academic outcome.

Lane, Lane and Kyprianou (2004) examined the impact that self-esteem and self-efficacy had on academic performance. Their study was based on 205 post-graduate students. These students had already achieved in the academic setting, unlike those involved in this research. The study did confirm that high self-esteem was strongly related to academic success and associated significantly with high self-efficacy (Lane et al., 2004). Note that for the purposes of this research we do not investigate self-efficacy as a separate component, however it is an important component of perceived behavioural control within the Theory of Planned Behaviour and closely linked to the self-competency component of self-esteem (Tafarodi & Swann, 1995).

Pepi, Faria and Alesi (2006) investigate factors that predispose towards learning and actual results and report that intelligence and self-esteem seem to play an important role in scholastic performance. Their research is focussed on determining the relationship between the variables of school, socio-economic level and gender. A questionnaire based on a Personal Conceptions of Intelligence Test and the Rosenberg Self-Esteem Scale, was administered to 1,540 Italian and Portuguese high school and university students to assess socio-economic level and school performance, perceived intelligence and self-esteem (Pepi et al., 2006). The results showed significant relationship between self-esteem, perceived intelligence and achievement. However a generalisation as to the effects of socio-economic status, ethnicity and gender could not be established (Pepi et al., 2006). The variable of intelligence will not be examined during the current study as all programmes are constructed to facilitate achievement with the low level learner and so outcome is not contingent on the level of intelligence, therefore anyone within a normal range will have the capacity to achieve.

Pritchard (2007) investigated the influence of student health on the intent to dropout of college in the United States. This longitudinal survey of 242 first year students revealed that emotional and social factors including stress and low self-esteem, did predict intention to dropout. In this study it is stated that approximately 25 % of new students do not return to the same institution the following year, with 50 % of these students making the decision to leave in the first six weeks. Furthermore, most of this attrition was reported as preventable. Pritchard (2007) discusses previous studies that have examined the importance of student characteristics in predicting student success, including gender, age, high school grades and parents' education. She then proceeds to establish that few studies have examined what she believes to be the primary impediment to academic success and retention: student well-being. Depression, high stress levels, isolation, low self-esteem, and perfectionism, all contribute to the

tendency to dropout (Pritchard, 2007). Using a variety of surveys including the RSES, Pritchard (2007) was able to conclude that low self-esteem was a significant contributing factor to the student not completing their education. This finding supports the basis of this current study; that low self-esteem, unless reversed will contribute to a poor outcome for the student.

Petersen, Louw and Dumont (2008), describe their process of predicting the academic success of disadvantaged first year university students in South Africa, many of whom would have similar social contexts as the students involved in the present research. They describe investigating not only the ability of students to adjust to their environment, but also their effectiveness at seeking help, academic motivation, self-esteem, perceived stress, and perceived academic overload. Their findings confirmed that the psychosocial factors, dominated by self-esteem, significantly influenced the outcome of these students (Petersen et al., 2008).

Jaret and Reitzes (2009) studying Georgia College students tried to establish a relationship between self-esteem, efficacy, academic performance and the way an individual formulated their own racial ethnic identity. Although not able to positively conclude that racial ethnic identity was a factor in academic performance, they were able to establish that there was a definite relationship between self-esteem, self-efficacy and academic performance.

The Utility of Self-Esteem on the Theory of Planned Behaviour

The current study proposes to combine self-esteem with TPB to predict behavioural intent. However there is a significant lack of literature that reveals the use of these two tools in combination. There are however, many documented studies combining TPB with other variables, for example; addition of role identity (White et al.,

2008), self-identity (Armitage & Connor, 1999), leisure activities (Ajzen & Driver, 1992),) action and coping planning (Soares, McIntyre & Sniehotta, 2009) and using TPB combined with professionalism training to integrate professionalism training into medical education (Archer, Elder, Hustedde, Milam & Joyce 2008). Philip et al. (2003), conclude their study of 125 United Kingdom students and the ability to predict exam success using a number of models, stating that the TPB provides 32% of the variance of prediction, with intention being the strongest component. However, they state that for this model to be used as a predictive tool, other factors such as personality traits, inclusive of self-esteem must be considered.

In the present study we include the variable of self-esteem as different to that of self-efficacy, two components often incorrectly applied. Self-Esteem is described as a personal judgement of worth and categorised by psychologists as being a personality trait whilst self-efficacy is based on beliefs held about capabilities and behaviour (Pajares & Schunk, 2001).

An extensive literature review has revealed many articles exploring the relationship between the TPB, self-efficacy and achievement, (Ajzen, 1991; Bandura, 1982; Soares, 2009; Cammock, 2008; Rodgers, 2008; Zimmerman & Bandura, 1994; Wood, 2008), however limited literature exists combining TPB with self-esteem and using this as a predictive tool. Four studies that have been found combining the TPB and self-esteem will now be discussed.

Baumeister, Campbell, Krueger and Vohs (2003), during their research of literature regarding self-esteem discuss the merits of boosting self-esteem to improve performance. They conclude that encouraging the increase of self-esteem as a single component will not facilitate an improvement in outcome, however by combining this with other factors, including those of the TPB, an increase in performance/outcome would eventuate.

Wilkinson and Abraham (2004) undertook a study to understand the antecedents of adolescent smoking to enable development of interventions to reduce smoking uptake. They used the TPB in conjunction with other factors (including self-esteem) and concluded that their findings did support the inclusion of self-esteem measurement, combining this with the TPB in future studies.

Bryan, Kagee and Broaddus (2006) combined the TPB with self-esteem as a model to examine the intentions and behaviour of South African adolescents in response to condom use. Results revealed that self-esteem was significantly related to TPB predictors of intentions, supporting the inclusion of this construct into the model of prediction.

Wang (2009) combined Functional Theory with the TPB. Functional Theory classifies attitude according to psychological functions, including the function of self-esteem. The results conclude that the intention of the individual is heavily influenced by self-esteem and states that research into predicting behaviour should consider the inclusion of psychological constructs such as self-esteem, combining this with the TPB to provide a multi-dimensional approach rather than the more uni-dimensional model of the TPB.

All four of these studies used the Rosenberg Self-Esteem Scale (RSES) as a tool of measurement.

Rationale

The literature reveals a multitude of studies conducted to explore why people do not achieve educationally (Davis et al., 2002; Scott, 2008; Ussher, 2008; Jaret & Reitzes, 2009; Pepi et al., 2006; Tashakkori, 1992). Various methods have been used to examine a number of factors, including the tools of choice for this study. The Theory of Planned Behaviour provides a model that encompasses an individual's attitude towards,

and intention to perform the behaviour, and also accounts for the social context of the individual and the pressures they may feel in performing the behaviour (Ajzen, 1991). Self-Efficacy, which research has shown to have a large effect on behavioural change, is incorporated within the TPB in the variance of perceived behavioural control. Ajzen (1991) stated that the TPB model can also include additional predictors within the model to increase the model's predictive ability (White et al., 2008). This study has included the variable of self-esteem in preference to self-efficacy, as the dominant factor of prediction, and will measure this by the Rosenberg Self-Esteem Scale (1965). Self-efficacy and self-esteem are not synonymous terms. Self-efficacy pertains to beliefs regarding ability to perform behaviour, self-esteem relates to the extent one likes, values and respects oneself, both influencing a person's behaviour (Bandura, 1982). Thus, even though a correlation is expected between the two constructs, they are not the same thing. Self-Efficacy is a component of PBC within the TPB whereas self-esteem is not. The RSES and TPB have both been identified as being important to predicting achievement, intent and outcome, however little literature has been found that combine the two methods into one predictive model (Ajzen, 1991; Rosenberg, 1965; Bryan et al., 2006; Wang, 2009). It seemed a logical extension of research to do so.

The ability of an educational facility to predict outcome of a student could have an enormous impact on the effectiveness of that institution. The student has the opportunity to be assessed for risk factors of non-completion and remedial steps put in place to mitigate these factors. The student would have a greater chance of achievement and therefore improved opportunities for progression into employment or further education, the institution would have a higher completion rate, and the compounding spin off for society would be beneficial in all aspects (Middleton, 2008). The development of such tools cannot progress until thorough research has been undertaken in the determinants of educational outcome.

Aims and Hypotheses

The specific aim of this study is to determine if self-esteem in conjunction with the factors of the TPB, can predict behavioural intent and educational outcome for an adult learner. The co-variances of age, gender and ethnicity will be examined, and hence controlled for.

Specifically it is proposed that:

1. The Theory of Planned Behaviour components and self-esteem will both predict intention to complete.
2. The components of the Theory of Planned Behaviour and self-esteem will predict educational outcomes.
3. Self-esteem levels will improve over the duration of the programme.
4. Ethnicity will influence outcome; self-esteem and Theory of Planned Behaviour components. Sub-hypotheses;
 - a) Ethnicity will have an influence on the outcome of the participants.
 - b) Ethnicity will influence self-esteem levels of the participants.
 - c) Ethnicity will influence the three factors of the Theory of Planned Behaviour; subjective norm, perceived behavioural control and attitude.

To answer these questions we will be asking adult learners from a Private Training Establishment located in a low socio-economic region of Counties Manukau to complete two self-report surveys: The Theory of Planned Behaviour Questionnaire and the Rosenberg Self-Esteem Scale. The TPB will be provided at the beginning of the programme assessing the risks to achievement and the intent to achieve, whereas the RSES will be conducted twice, once at the inception of the programme and finally at completion, measuring change occurring in self-esteem as well as the prediction of educational outcome.

Summary

Achievement in education is affected by many factors in an individual's life, no more so than those individuals who come from socio-economically challenged areas, such as those investigated in this study (Davis et al., 2002; Stinebrickner, 2003; Martinez, 2004; Middleton, 2008; 2009). Using TPB data, combined with assessment of self-esteem, it can be further explored which of these factors, if not all, contribute to intention to achieve and to attain a positive outcome. Other variables such as age, gender and ethnicity will be examined as will any change in self-esteem over the duration of the programmes, thus providing an all-encompassing report on two methods of prediction.

Method

Participants

Participants comprised 211 individuals (115 females and 96 males) who were students of a Private Training Establishment (PTE) targeting low or non-achieving individuals in the Counties Manukau region. These participants were approached from classes across the 13 programmes provided by the PTE.

Participants ranged from 16 to 65 years of age ($M = 28.49$, $SD = 13.15$), with males being significantly older ($M = 30.92$, $SD = 13.24$) than females ($M = 25.57$, $SD = 12.50$), ($t_{(205)} = -3.01$, $p < .01$). Ethnicity was grouped under five categories with the ethnic profile of the sample thus; 41.7% identified as being Pacifica, 38.4% as Maori (encompassing all individuals identifying as Maori/Cook Island Maori or part Maori), 10.4% as European, 8.5% as being Asian (encompassing individuals identifying as Asian or Indian) and 1% identified with a non specified ethnic group (e.g., African or Middle Eastern). Individuals in the sample ranged in their English language abilities, but were generally low in literacy skills. Although the specific level of English language and literature aptitude was not specifically measured in this study, all students admitted to the programmes fell in the low numeracy and literacy credits category, as defined by the Tertiary Education Commission (2009). Students admitted to the programmes were required to have basic English reading, writing and comprehension skills, which allowed them to engage in the programme, and were therefore able to complete the questionnaire set administered for the purpose of this study, as shown in appendices.

Materials

The demographic information assessed was obtained from the PTE records, and included participant's age, gender, ethnicity and educational outcome. Assessment of

English language ability was not conducted as all participants were classified as having basic English skills, and the programmes provided had been formulated to ensure students of this level were able to pass. As all students were categorised as having low literacy, there was general consistency across the participants' English ability, therefore this variable was not measured. Measures assessing intelligence were also not conducted as all participants were of low level academic ability. The programmes provided for these individuals were designed to facilitate learning and therefore be achievable by the targeted participants, not merely those with the greatest aptitude. Socio-economic status (SES) was not measured specifically for each individual, as all participants in the sample were of similar low SES, which is reflective of the general SES of Manukau City, being a predominantly decile 9-10 region. In light of the sample being obtained from a relatively homogeneous population, for the purposes of this study, age, gender, and ethnicity were chosen as co-variables and between group factors specifically.

In order to assess behavioural intention and self-esteem levels of students at the beginning of their programme and upon programme completion, the questionnaire set administered consisted of a survey based on the Theory of Planned Behaviour, as well as a self-esteem survey, the Rosenberg (1965) Self-Esteem Scale (RSES), both of which are further described below.

Outcome Classification

Participants were classified according to the Tertiary Education Commission's (2009) outcome requirements for Student Achievement Component Funding, where a positive outcome indicated participants completed and passed the programme, and a negative outcome indicated that they did not complete the programme or withdrew. Although most students did not access this funding pool, this criterion is common to all

tertiary providers, including the universities and polytechnics (Single Data Return, 2009). Therefore, outcome analysis in the current study included this measurement to allow comparison across tertiary providers. Of the sample ($N = 211$), 79% ($N = 167$) showed a positive outcome and 21% ($N = 44$) showed a negative outcome, according to this criterion.

Theory of Planned Behaviour (TPB) questionnaire

To predict whether participants would complete their programme of study, a questionnaire based on the Theory of Planned Behaviour (TPB) was developed. This questionnaire was composed following the guidelines from the *Constructing Questionnaires Based on the Theory of Planned Behaviour* manual, providing stepwise methods to constructing TPB questionnaires (Francis, Eccles, Johnston, Walker, Grimshaw, Foy, Kaner, Smith & Bonetti, 2004). The Theory of Planned Behaviour is a model aimed at identifying an individual's intention to perform behaviours and relating this to likelihood that they will successfully engage in these actions (Ajzen, 1988). In determining intention, the TPB captures three concepts: perceived behavioural control, subjective norms and attitudes (Ajzen, 1988).

The TPB questionnaire used in this study consisted of 25 Likert scale items grouped into three subscales. Behavioural intention consisted of a single question encompassing motivation factors driving the behaviour (Ajzen, 1991), where participants selected a statement between 1 and 5, which best reflected their intention, for example, 1 = 'I expect to complete this programme' and 5 = 'I probably will not complete this programme'. The perceived behavioural control subscale, contained ten mixed weighting items relating to the volitional control of the behaviour and the perceived ease or difficulty of performing the behaviour (Ajzen, 1991). The scale asks questions such as, 'Financial problems may mean that I will not complete this

programme (1 = *Agree* to 5 = *Disagree*). The subjective norm subscale, consists of ten items indicating perceived social pressure to perform a behaviour, such as, "My friends think that I am doing the right thing" (1 = *Agree* to 5 = *Disagree*). The attitude subscale, consisted of five negatively weighted items assessing the level of positive appraisal of a behaviour, such as, "I believe that I will enjoy this programme" (1 = *Agree* to 5 = *Disagree*).

Negatively weighted items were reverse coded and scores within each factor averaged to produce overall scores. Therefore, a higher score on the intent item was representative of a strong motivation to complete the programme, higher scores on perceived behavioural control items indicated greater control over completing the programme, higher scores on subjective norm items showed more positive social pressure to complete the programme, and higher scores on attitude items indicates a highly favourable attitude toward completing the programme.

Self-Esteem Scale

Self-Esteem was measured using the Rosenberg (1965) Self-Esteem Scale (RSES), aimed at measuring an individual's general positive or negative attitude toward the self (Rosenberg, 1965). The universal application of this scale derives from its theoretical and practical attributes. The scale closely reflects the conceptualization of self-esteem as presented in psychological theories and is also consistent with the non-academic or lay persons view of self-esteem. The scale shows ease of administration and concision, while taking only a short period of time for participants to complete (Gray-Little, Williams & Hancock, 1997).

The RSES assesses self-esteem through ten Likert scale items with participants rating these items on a four point scale. Examples include; "I am able to do things as well as most other people" (1 = *Strongly Agree* to 4 = *Strongly Disagree*) and "I take a

positive attitude towards myself (1 = *Strongly Agree* to 4 = *Strongly Disagree*).

Previous research has suggested a two factor structure to this scale, which may be differentially targeting global and specific self-esteem (Rosenberg, Schooler, Schoenbach & Rosenberg, 1995), however recent research (Sigg, 2007) suggests the two factor structure of the Rosenberg (1965) SES may also reflect either positive and negatively worded items (Owens, 1993; Gray-Little, Williams & Hancock, 1997) or self-liking and self-competency (Tafarodi & Milne, 2002), which will be further assessed in the present study.

The scale contained both positive and negative weighted items, and negatively weighted items 3, 5, 8, 9, and 10 were then reverse coded. Scores were then averaged to produce an overall score indicating self-esteem level and subsequently reversed coded once again, to provide a spectrum of self-esteem level in which lower scores were representative of lower self-esteem, where individuals expressed a more negative attitude toward themselves, and higher scores were representative of higher self-esteem, where individuals expressed a more positive psychological well-being (Rosenberg, 1965).

Procedure

A research assistant was employed to approach students and distribute the questionnaires to ensure anonymity of responses, and to lessen biases associated with relationships the participants may have had with the researcher. Interested participants were verbally briefed on the aims of the study and then personally handed the research materials; including an information sheet outlining the purposes and procedures of the study, contact details of the researcher, instructions advising participants of how to correctly complete the questionnaire (see Appendix B) and the Theory of Planned Behaviour (see Appendix C) and self-esteem measures (see Appendix D). Both instructions and measures were written and verbally expressed in English. To assist the

return of completed questionnaires, the research assistant requested the students to complete the questionnaire once given the materials, and to return them to the research assistant immediately after completion. Data was then entered into a spreadsheet and demographic information included for each participant's data. Following the entry of all data, participant's names were converted to participant numbers to again, ensure anonymity. The RSES was distributed at the beginning of the programme and again at the completion. The TPB was distributed at the beginning only.

Analysis

Using the obtained data from the questionnaire sets, the Theory of Planned Behaviour (Ajzen, 1988) measures and the self-esteem measures, RSES (Rosenberg, 1965), were assessed in terms of psychometric properties in conjunction with testing four main hypotheses:

Hypothesis One

Self-Esteem level may influence behavioural intention, (that is, an individual's intention to complete the programme), and the addition of self-esteem into the TPB will result in significantly improved model prediction, above and beyond the components of the TPB. Therefore, we examine firstly age and gender as co-variables (see Model 1, Table 9), TPB components; subjective norm, perceived behavioural control and attitude as to whether they predict behavioural intent and which do so more strongly (see Model 2, Table 9), and then also incorporate the variable of self-esteem to predict whether a higher self-esteem level positively influences behavioural intent (see Model 3, Table 9). A hierarchical multiple linear regression will assess the three models and we compare R^2 - change across the three models while examining standardized regression coefficients to determine the contribution of each predictor.

Hypothesis Two

Theory of Planned Behaviour scores should predict actual participant outcomes, that is, higher social pressure to complete, greater perceived control, a highly positive attitude, and a strong intent to complete the programme should predict a positive outcome (see Model 2). In addition, self-esteem level should also predict outcome, that is, a pass or fail result for an individual, above and beyond the influence of any TPB components (see Model 3). Therefore we examine whether those participants showing negative programme outcomes also show lower self-esteem levels as measured by the RSES (Rosenberg, 1965) at the initial measuring point (i.e., programme initiation), than those participants with positive programme outcomes. This will be tested using binary logistic regression analyses, as the dependent variable does not meet the conditions of multiple linear regression.

Hypothesis Three

Under the assumption that participation in the programmes contribute to increases in self-esteem over time, we expect that self-esteem levels measured by the RSES (Rosenberg, 1965) should increase from the initial measurement point (programme initiation), to the final measurement point (programme completion). This will be tested using a paired samples *t*-test to determine differences between mean RSES scores at Time1 and Time2.

Hypothesis Four

Particular ethnic groups (European, Maori, Pacifica or Asian) may also produce differential outcomes, shows differing levels of self-esteem and may respond differentially to items on the TPB measure and self-esteem measure. Therefore, we propose 3 sub-hypotheses:

- a) We predict that ethnicity will have an influence on the educational outcome of the participants. This will be addressed using a chi-square test to determine whether a pass or fail outcome is associated with ethnic grouping.
- b) We predict that ethnicity will have an influence on self-esteem levels of the participants and we expect average self-esteem levels to differ between ethnic groups. This will be explored through a Multivariate Analysis of Variance (MANOVA) test.
- c) We predict that ethnicity will have an influence on TPB scores, therefore we expect average ratings between TPB components (perceived behavioural control, subjective norm and attitude) to differ between ethnic groups and this hypothesis will be tested using a Multivariate Analysis of Variance (MANOVA).

Results

Psychometric Properties

Prior to hypothesis testing, the data were assessed for their analytical fitness and explored to elucidate data structure. To this end, the psychometric properties of the data were obtained using conventional descriptive statistics (e.g., means and standard deviations), and internal consistency statistics (e.g., Cronbach's alpha: α_c). Structure was tested for dimensionality using item-total correlations, which are correlations between an individual item and the total of scores on all other items. Here, a correlation below 0.3 indicates that an item may not be tapping into the same underlying dimension as the other items. For some scales data structure was examined more rigorously using Principle Components Analysis (PCA). Each of the major scales used in the study were assessed in turn.

Theory of Planned Behaviour (TPB) questionnaire

An item analysis was conducted on the four components of the TPB model: perceived behavioural control (PBC), subjective norm, attitude, and behavioural intention (BI). Table 3 displays the items, arranged by component, accompanied by mean, standard deviation, item-total correlation, and Cronbach's alpha if-item-deleted statistics. The means and standard deviations were calculated for each scale item to attain the measures of central tendency and dispersion, and to identify possible floor and ceiling effects. Inspection of Table 3 indicates sensible mean scores (i.e., towards the middle of the response range), high standard deviations (i.e., the items can discriminate between subjects), and high item-total correlations (i.e., greater than 0.3). The alpha if-item-deleted statistics gives an α_c statistic for the remaining items if that item were

removed from the analysis, and are generally above the conventional $\alpha_c = .7$ criterion for the subjective norm and attitude scale, but below the criterion for the PBC scale.

Table 3: Means, Standard Deviations, Corrected item-total correlation, and Cronbach's alpha (α_c) if-item-deleted, for components of the Theory of Planned Behaviour questionnaire.

| | <i>N</i> | <i>M</i> | <i>SD</i> | Corrected Item- Total Correlation | Cronbach's Alpha (α_c) If- Item-Deleted |
|------------------------------|----------|----------|-----------|--------------------------------------|--|
| PBC | | | | | |
| TPB 1 | 210 | 4.06 | 1.17 | 0.27 | .67 |
| TPB 2 | 211 | 3.82 | 1.14 | 0.36 | .66 |
| TPB 3 | 210 | 3.86 | 1.20 | 0.29 | .67 |
| TPB 4 | 209 | 4.31 | 1.05 | 0.44 | .65 |
| TPB 5 | 209 | 3.96 | 1.24 | 0.35 | .66 |
| TPB 6 | 208 | 4.19 | 1.07 | 0.27 | .67 |
| TPB 7 | 211 | 3.94 | 1.31 | 0.39 | .65 |
| TPB 8 | 208 | 4.26 | 1.32 | 0.30 | .67 |
| TPB 9 | 209 | 4.08 | 1.24 | 0.37 | .65 |
| TPB 10 | 208 | 4.13 | 1.14 | 0.42 | .65 |
| Subjective Norm | | | | | |
| TPB 11 | 211 | 4.58 | 0.92 | 0.75 | .90 |
| TPB 12 | 211 | 4.49 | 1.01 | 0.72 | .90 |
| TPB 13 | 211 | 4.46 | 1.07 | 0.73 | .90 |
| TPB 14 | 209 | 4.50 | 1.06 | 0.69 | .90 |
| TPB 15 | 209 | 4.08 | 1.30 | 0.52 | .91 |
| TPB 16 | 211 | 4.32 | 1.09 | 0.71 | .90 |
| TPB 17 | 211 | 4.49 | 0.99 | 0.71 | .90 |
| TPB 18 | 211 | 4.44 | 1.04 | 0.73 | .90 |
| TPB 19 | 210 | 4.33 | 1.06 | 0.75 | .90 |
| TPB 20 | 211 | 3.80 | 1.42 | 0.55 | .91 |
| Attitude | | | | | |
| TPB 21 | 211 | 4.76 | 0.72 | 0.74 | .84 |
| TPB 22 | 211 | 4.75 | 0.68 | 0.70 | .85 |
| TPB 23 | 211 | 4.68 | 0.83 | 0.73 | .84 |
| TPB 24 | 211 | 4.57 | 0.86 | 0.69 | .85 |
| TPB 25 | 211 | 4.59 | 0.84 | 0.68 | .86 |
| Behavioural Intention | | | | | |
| TPB 26 | 209 | 4.15 | 0.65 | - | - |

Table 4: Descriptive Statistics and Cronbach's alpha (α_c) for summated scales derived from the Theory of Planned Behaviour Questionnaire.

| | <i>N</i> | <i>M</i> | <i>SD</i> | Cronbach's Alpha |
|-----------------|----------|----------|-----------|---------------------|
| PBC | 197 | 40.61 | 6.07 | .68 |
| Subjective Norm | 206 | 43.48 | 8.20 | .91 |
| Attitude | 211 | 23.35 | 3.22 | .88 |
| Intent | 209 | 4.15 | 0.65 | - |

This finding reflects those reported in the literature (White et al., 2008), and results from the divergent nature of the PBC scale. From this analysis it can be concluded that the overall scale was fairly reliable and internally consistent.

Overall means, standard deviations, and α for the summated TPB components are displayed in Table 4. The differing N values (sample size) reflect missing data due to incomplete questionnaires. Participants indicated a generally strong positive intent to complete the programme they had initiated ($M = 4.15$, $SD = 0.65$), high social pressures to complete the programme ($M = 43.48$, $SD = 8.20$), a generally positive attitude toward completing the programme ($M = 23.35$, $SD = 3.22$), and a high level of perceived personal control over completing the programme ($M = 40.61$, $SD = 6.07$). The Cronbach's alpha statistics were likewise acceptable, even though the PBC statistic was calculated marginally below the accepted threshold of .7.

Rosenberg's Self-Esteem Scale (RSES)

The Rosenberg (1965) Self-Esteem Scale (RSES) was used to measure holistic self-esteem, and although RSES describes a uni-dimensional measurement tool, consequent research has explored a possible two factor structure to the scale (Rosenberg et al., 1995; Gray-Little et al., 1997; Tafarodi & Swann, 1995; Owens, 1993). These factors, equating to a global self-esteem and specific self-esteem, were not differentiated in Rosenberg's (1965) original SES and therefore are further investigated in the present research using Principles Component Analyses (PCA). The results of the PCA on the RSES data extracted at two time points will guide the subsequent construction of summative scales. The first measurement, denoted Time1, was taken at the beginning of the programme, while the second measurement, Time2, occurred at the end of the programme. Table 5 reports an item analysis undertaken on the RSES at both time points. Scrutiny of the table attests to the sound psychometrics properties of the scale,

with mid-range means, moderate standard deviations, and corrected item-total correlations greater than 0.3. The Cronbach's alpha if-item-deleted statistics are all greater than the accepted criterion of .7, with Time2 appearing to have slightly higher values than those recorded at Time1.

Initially, an unrotated PCA was undertaken and communalities examined to ensure that all were greater than 0.3, a criterion that was satisfied for all ten items at Time1 and Time2. Table 5 displays communality values for both measurement epochs, which indicate the amount of variance in a variable shared with the all the other variables. To increase confidence in the factorability of the matrix a Kaiser-Meyer-Olkin (KMO) test of sampling adequacy and a Bartlett's test of Sphericity were undertaken.

Table 5: Means, Standard Deviations, Corrected item-total correlation, and Cronbach's alpha (α_c) if-item-deleted, for the RSES data obtained at two distinct time points (Time1 and Time2).

| | <i>N</i> | <i>M</i> | <i>SD</i> | Corrected Item- Total Correlation | Cronbach's Alpha If- Item-Deleted |
|--------------|----------|----------|-----------|--------------------------------------|--------------------------------------|
| Time1 | | | | | |
| RSES 1 | 204 | 1.67 | 0.57 | 0.39 | .75 |
| RSES 2 | 209 | 1.68 | 0.56 | 0.40 | .75 |
| RSES 3 | 203 | 1.93 | 0.82 | 0.38 | .75 |
| RSES 4 | 209 | 1.83 | 0.68 | 0.33 | .76 |
| RSES 5 | 208 | 2.11 | 0.93 | 0.34 | .76 |
| RSES 6 | 210 | 1.60 | 0.60 | 0.50 | .74 |
| RSES 7 | 211 | 1.80 | 0.64 | 0.49 | .74 |
| RSES 8 | 209 | 2.54 | 0.98 | 0.38 | .76 |
| RSES 9 | 211 | 2.26 | 0.87 | 0.60 | .72 |
| RSES 10 | 210 | 1.99 | 0.88 | 0.57 | .72 |
| Time2 | | | | | |
| RSES 1 | 172 | 1.45 | 0.60 | 0.49 | .79 |
| RSES 2 | 173 | 1.49 | 0.60 | 0.43 | .80 |
| RSES 3 | 172 | 1.86 | 0.86 | 0.49 | .79 |
| RSES 4 | 173 | 1.61 | 0.60 | 0.40 | .80 |
| RSES 5 | 173 | 1.94 | 0.91 | 0.45 | .80 |
| RSES 6 | 173 | 1.53 | 0.60 | 0.46 | .80 |
| RSES 7 | 173 | 1.58 | 0.66 | 0.48 | .80 |
| RSES 8 | 173 | 2.21 | 0.97 | 0.54 | .79 |
| RSES 9 | 172 | 2.07 | 0.87 | 0.60 | .78 |
| RSES 10 | 173 | 1.89 | 0.88 | 0.60 | .78 |

The KMO statistic, which compares the magnitudes of the observed correlation

coefficients to the magnitudes of the partial correlation coefficients, should be greater

than 0.5 in order to proceed with a PCA. For the RSES it was 0.80 at initial measurement and 0.83 at final measurement, both of which can be interpreted as meritorious (Hair, Black, Babin, Anderson, and Taham, 2006). Results of the Bartlett's test determined that the correlation matrix was significantly different from the identity matrix at both Time1 ($\chi^2_{(45)} = 490.98, p < .01$) and Time2 ($\chi^2_{(45)} = 539.20, p < .01$) measurement points. From these results we can conclude that sufficient inter-correlation exists in the matrix and that it is appropriate to proceed with a PCA.

Adopting Kaiser's criterion for component extraction (i.e., Eigen values greater than one), an initial un-rotated PCA, undertaken independently on Time1 and Time2 data, yielded a two component solution. Consequently a direct oblimin rotation was carried out and the component correlation matrix scrutinised for correlations greater than 0.3, which would indicate that the components are correlated. For both Time1 and Time2 solutions the component correlation matrix demonstrated scant evidence of correlated components, and so varimax rotations which assume orthogonal components, were employed. The varimax rotation, which indicated two factors, accounted for 52.35% of variance for Time1, and 56.57% of variance for Time2 (see Table 6).

Table 6: Rosenberg (1965) Self-Esteem Scale (RSES) communalities and factor loadings for two measurement time points (Time1 and Time2).

| Item | Time1 | | | Time2 | | |
|--------|-------------|---------------------------|---------------------------|-------------|---------------------------|---------------------------|
| | Communality | Component 1 (=34.124%) | Component 2 (=18.205%) | Communality | Component 1 (=37.879%) | Component 2 (=18.694%) |
| RSES2 | 0.60 | <u>0.77</u> | 0.01 | 0.53 | <u>0.72</u> | 0.12 |
| RSES1 | 0.56 | <u>0.75</u> | 0.03 | 0.62 | <u>0.77</u> | 0.15 |
| RSES6 | 0.56 | <u>0.72</u> | 0.21 | 0.60 | <u>0.77</u> | 0.10 |
| RSES4 | 0.45 | <u>0.67</u> | 0.00 | 0.49 | <u>0.69</u> | 0.11 |
| RSES7 | 0.51 | <u>0.67</u> | 0.23 | 0.58 | <u>0.75</u> | 0.15 |
| RSES8 | 0.59 | 0.06 | <u>0.77</u> | 0.67 | 0.04 | <u>0.81</u> |
| RSES9 | 0.58 | 0.35 | <u>0.68</u> | 0.59 | 0.23 | <u>0.74</u> |
| RSES3 | 0.46 | 0.02 | <u>0.67</u> | 0.51 | 0.09 | <u>0.71</u> |
| RSES10 | 0.55 | 0.35 | <u>0.66</u> | 0.62 | 0.21 | <u>0.76</u> |
| RSES5 | 0.38 | 0.01 | <u>0.62</u> | 0.45 | 0.09 | <u>0.66</u> |

Note: All loadings >0.40 are underlined.

Table 7: Means, standard deviations, and Cronbach's alpha (α_c) for the RSES and its positive and negative subscales at Time1 and Time2.

| RSES | Time 2 | | | Time 1 | | |
|----------|----------|-----------|------------|----------|-----------|------------|
| | <i>M</i> | <i>SD</i> | α_c | <i>M</i> | <i>SD</i> | α_c |
| Ten-item | 20.59 | 4.34 | .76 | 22.36 | 4.67 | .81 |
| Positive | 11.52 | 2.17 | .76 | 12.35 | 2.31 | .79 |
| Negative | 9.25 | 2.99 | .74 | 10.04 | 3.39 | .80 |

On the basis of the PCA two additional summative variables were calculated of five items each. These five items correspond to the positively worded and negatively worded items contained in the RSES, and uncovering such a two component structure is not uncommon (Owens, 1993). Table 7 exhibits means, standard deviations and Cronbach's alpha for the ten-item RSES and for both positive and negative subscales. Note that the subscale means are approximately half that of the full ten-item RSES mean, reflecting the fact the subscale means are each calculated from five items. All Cronbach's statistics exceed the recommended criterion (i.e., $\alpha_c > .7$) and can be considered internally consistent.

Hypothesis Testing

Hypothesis One: Self-Esteem can explain additional variance in intention to complete, above and beyond the components in the Theory of Planned Behaviour and other predictor variables.

The Theory of Planned Behaviour states that behavioural intention is a linear combination of attitude towards the behaviour, subjective norms, and perceived behavioural control (PBC) over performing the behaviour (see Equation 1). Hierarchical multiple linear regression analyses were undertaken in order to provide summary coefficients of the nature of the relationship between behavioural intention and age and gender (see Model 1); between behavioural intention and the summative variables

contained within the Theory of Planned Behaviour: subjective norm, attitude, and PBC (see Model 2), and between behavioural intention and self-esteem (see Model 3). The latter model, involving self-esteem as measured first (i.e., Time1), came in two forms. First, using the RSES in its ten-item format, and second, based on the results of a PCA, the two summative scales consisting of positively and negatively worded items. Note too, that Model 1 is tested in Model 2, and Models 1 and 2 are both nested in Model 3. This approach, using a hierarchical multiple linear regression and three sets of predictor variables, permits the predictive power of each regression variate to be evaluated relative to one another. Prior to analyses, the data were screened for normality, linearity, homoscedasticity, and independence of residuals graphically using residual analyses to ensure the data met assumptions.

In addition to explaining the nature of the relationship between the variables, multiple linear regression analyses supply variance measures which allow for the assessment of accuracy with which the regression equation can predict values on the criterion variable (i.e., behavioural intention). Table 8 presents statistics assessing the statistical significance of the three models when the ten-item RSES is used as the dependent variable. The first statistic, the multiple regression correlation coefficient (R), represents the correlation between the actual scores (i.e., behavioural intention scores) and predicted scores. To determine if R is significantly different from zero (i.e., the null hypothesis) F -ratios were calculated and, with reference to Table 8, the R values derived from Models 2 and 3 were significantly different from zero ($p < .05$), whilst Model 1 was not. This result indicates that the predictive power of Model 1 is no greater than using the mean of the behavioural intention scores, whilst Models 2 and 3 endowed greater predictive power than this average.

The coefficient of determination (R^2) represents the proportion of variance contained in the behavioural intention scores that is explained by the three sets of

predictor variables contained in the three models. The adjusted R^2 value accounts for the different numbers of predictor variables in each model, and penalises models with more variables relative to those with less. With reference to Table 8 it is noted that the three models explain between 1% and 17% of the variability in behavioural intention.

The right-hand side of Table 8 presents change statistics, and shows that while the change in adjusted R^2 from 0 to 0.01 (i.e., Model 1) is not significant, the changes between Model 1 and Model 2 ($\Delta R_{adj} = 0.12$) and between Model 2 and Model 3 ($\Delta R_{adj} = 0.04$) are significant.

Table 8: Summary of the MLR analyses when the ten-item RSES is selected as a predictor variable.

| Model ^R | R^2 | Adjusted R^2 | Std. Error of the Estimate | Change Statistics | | | | | |
|--------------------|--------|----------------|----------------------------|-------------------|------------|------|-----|-----------------|-------|
| | | | | R^2 Change | F Change | df1 | df2 | Sig. F Change | |
| 1 | 0.17 | 0.03 | 0.01 | 0.17 | 0.03 | 2.05 | 2 | 180 | .13 |
| 2 | 0.40** | 0.16 | 0.13 | 0.16 | 0.13 | 7.28 | 3 | 177 | .00** |
| 3 | 0.45** | 0.21 | 0.17 | 0.16 | 0.05 | 8.02 | 1 | 175 | .01* |

* $p < .05$ (2-tailed), ** $p < .01$ (2-tailed).

Table 9: Un-standardised and standardised coefficients for each of the hierarchical multiple linear regression analyses when the RSES is represented as a ten-item scale.

| | B | Std Error | β | t |
|-----------------|-------|-----------|---------|---------|
| Model 1 | | | | |
| Constant | 2.17 | 0.03 | - | 64.03** |
| Age | -0.00 | 0.00 | -0.17 | -2.03* |
| Gender | 0.01 | 0.03 | 0.04 | 0.42 |
| Model 2 | | | | |
| Constant | 1.33 | 0.22 | - | 5.95** |
| Age | -0.00 | 0.00 | -0.18 | -2.28* |
| Gender | 0.01 | 0.03 | 0.02 | 0.26 |
| PBC | 0.11 | 0.03 | 0.30 | 3.47* |
| Subjective Norm | -0.05 | 0.03 | -0.21 | -2.12* |
| Attitude | 0.11 | 0.05 | 0.21 | 2.08* |
| Model 3 | | | | |
| Constant | 1.62 | 0.24 | - | 6.72** |
| Age | -0.00 | 0.00 | -0.17 | -2.18* |
| Gender | 0.00 | 0.03 | 0.01 | 0.13 |
| PBC | 0.09 | 0.03 | 0.25 | 2.89* |
| Subjective Norm | -0.05 | 0.03 | -0.21 | -2.14* |
| Attitude | 0.10 | 0.05 | 0.20 | 1.97* |
| RSES | 0.01 | 0.00 | 0.22 | 2.83* |

NOTE: Behavioural Intention (BI) is the dependent variable. * $p < .05$ (2-tailed), ** $p < .01$ (2-tailed).

Both un-standardised (B) and standardised (β) coefficients are reported, along with standard errors, the outcome of significance tests (*via* Students t -test), and regression equations in Table 9. Inspection of the t -values in Table 9 (final column) shows that, for Model 1, age is a significant predictor of behavioural intention but gender is not. This negative association between age and behavioural intention is evident across all three models. For Model 2 all three predictors from the Theory of Planned Behaviour have β coefficients significantly different from zero. As expected from theory, subjective norm had a negative correlation coefficient with behavioural intention, while PBC and attitude had positive correlations. These three predictors remain significant in Model 3, and are joined by an additional significant predictor, the ten-item RSES.

Tables 10 and 11 repeat the regression analyses just described, but with a modified Model 3, which divides the single RSES summated variable into two variables representing negatively and positively worded items. The results of this additional hierarchical multiple linear regression mirrors those described in Tables 10 and 11 but with one salient difference. For model 3, the positively worded RSES variable is no longer associated with a significant β value. The summated variable calculated from the negatively worded items did, however, return a significant β value.

Table 10 Summary of the MLR analyses when the ten-item RSES is decomposed into two five-item subscales representing positively and negatively worded items.

| Mode | R | R^2 | Adjusted R^2 | Std. Error of the Estimate | Change Statistics | | | | |
|------|--------|-------|----------------|----------------------------|-------------------|------------|-----|-----|-----------------|
| | | | | | R^2 Change | F Change | df1 | df2 | Sig. F Change |
| 1 | 0.17 | 0.03 | 0.01 | 0.17 | 0.03 | 1.88 | 2 | 180 | .16 |
| 2 | 0.38** | 0.15 | 0.11 | 0.16 | 0.12 | 6.08 | 3 | 177 | .00** |
| 3 | 0.45** | 0.20 | 0.16 | 0.17 | 0.05 | 4.23 | 2 | 175 | .02* |

* $p < .05$ (2-tailed), ** $p < .01$ (2-tailed).

Table 11: *Un-standardised and standardised coefficients for each of the hierarchical multiple linear regression analyses when the RSES is represented by its positive and negatively worded subscales.*

| | <i>B</i> | Std Error | β | <i>t</i> |
|-----------------|----------|-----------|---------|----------|
| Model 1 | | | | |
| Constant | 2.17 | 0.04 | - | 62.63** |
| Age | -0.00 | 0.00 | -0.17 | -1.93 |
| Gender | 0.02 | 0.03 | 0.06 | 0.64 |
| Model 2 | | | | |
| Constant | 1.33 | 0.23 | - | 5.80** |
| Age | -0.00 | 0.00 | -0.17 | -2.04* |
| Gender | 0.01 | 0.03 | 0.03 | 0.40 |
| PBC | 0.09 | 0.03 | 0.26 | 2.77* |
| Subjective Norm | -0.05 | 0.03 | -2.01 | -1.96* |
| Attitude | 0.12 | 0.05 | 0.24 | 2.21* |
| Model 3 | | | | |
| Constant | 1.34 | 0.23 | - | 5.96** |
| Age | -0.00 | 0.00 | -0.18 | -2.16* |
| Gender | 0.01 | 0.03 | 0.02 | 0.28 |
| PBC | 0.10 | 0.03 | 0.28 | 3.07* |
| Subjective Norm | -0.05 | 0.03 | -0.21 | -2.05* |
| Attitude | 0.11 | 0.05 | 0.22 | 2.06* |
| RSES Positive | 0.01 | 0.01 | 0.07 | 0.78 |
| RSES Negative | -0.01 | 0.01 | 0.25 | -2.88* |

*NOTE: Behavioural Intention is the dependent variable. * $p < .05$ (2-tailed), ** $p < .01$ (2-tailed)*

Additionally, an independent samples *t*-test was undertaken to probe for associations between behavioural intention and learner outcome (i.e., pass or fail). No significance difference was found between the two groups at the .05 level of significance ($t_{(205)} = -0.129, p = .90$).

Hypothesis Two: Self-Esteem can predict programme outcome after controlling for TPB components and other predictor variables.

Self-Esteem scores should also contribute to programme outcome, that is, participants with lower initial self-esteem would also be more likely to produce a negative outcome. The analysis and prediction of dichotomous outcomes such as fail (here, coded as 0) or pass (coded as 1) is best undertaken using logistic regression analyses. Ordinary least squares regression or linear discriminant function analysis are not suited to dichotomous dependent variables on account of the strictness of their statistical assumptions.

Table 12: Summary of the logistic regression analyses when the ten-item RSES is selected as a predictor variable.

| | -2 Log likelihood | H-L Test | <i>p</i> -value | AIC | BIC |
|----------------|-------------------|----------|-----------------|--------|--------|
| Model 1 | 171.16 | 12.40 | .13 | 175.16 | 175.67 |
| Model 2 | 167.63 | 6.64 | .58 | 179.63 | 181.17 |
| Model 3 | 167.48 | 7.07 | .53 | 183.48 | 185.52 |

Logistic regression analyses assumes only that the conditional mean derived from the dichotomous outcome variable is sufficiently represented by the binomial distribution, which is the case for independent observations such as those found in this study. As with the hierarchical multiple linear regression analyses described above, two logistic regression analyses were carried out, differing only in the representation of self-esteem. Each of the two analyses was comprised of three models, with Model 1 (age and gender), Model 2 (PBC, subjective norm, and attitude) and Model 3 (self-esteem at Time1) being identical to those employed in the linear regression analyses.

Table 12 displays the effectiveness of the three models in accounting for the data. A battery of Hosmer-Lemeshow (H-L) tests returned non-significant chi-square values for the three models, suggesting that each model constituted an adequate fit to the data. The relative goodness-of-fit of the three models is assessed by computing best-fitting parameter estimates using Maximum Likelihood Estimation (MLE).

The advantages of MLE over the more traditional least-squares estimation methods are documented by Myung (2003). By employing MLE, model selection criteria such as the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC) can be employed to adjust for model complexity (i.e., number of parameters). For all three models MLE was used to fit the logistic model (1) to the data, and to provide estimates for the model's parameters, known as maximum likelihood parameter estimates. The best-fitting parameters are found by minimizing the deviance, that is, the Log Likelihood (LL) function multiplied by negative two (Myung, 2003). The minimized deviance provides evidence in regards to which model most likely fits the data, but does so without respect to model complexity.

$$\text{AIC} = -2LL + 2p \quad (2)$$

$$\text{BIC} = -2LL + p \log(n) \quad (3)$$

Goodness-of-fit measures in themselves do not provide sufficient information with which to select a model, and an advantage of MLE is that it can be used with the AIC and BIC selection methods, both of which account for differences in the number of parameters among the models shown by Equation 2 and 3. Where p is the number of free parameters in the model, and n the sample size. Given a selection of models, the model with the lowest value of AIC or BIC should be preferred, with the difference between the two being that the BIC penalizes free parameters more strongly than the AIC. It is evident from the final two columns of Table 12 that the three models are comparable in their ability to account for the data, though Model 1, the most parsimonious, has the lowest AIC and BIC values.

Maximum likelihood parameter estimates are displayed in Table 13, both in raw form as logits (i.e., B) and as odds ratios (e^b), the latter accompanied by 95% confidence intervals. Positive values of B indicate that the predicted odds increase as the predictor value increases (i.e., a pass is more likely), while a negative coefficient means that the predicted odds decrease as the predictor decreases (i.e., a pass is less likely). The odds ratios, which are conceptually easier to work with, are estimates of the change in the odds of membership to the target group (here getting a pass) for a one-unit increase in the predictor. Note that Table 13 contains no significant predictors of group membership, that is, a pass or fail outcome. The binary logistic regression analyses were repeated but with a slight change to Model 3. Instead of using the RSES in its ten-item form the two subscales (i.e., positively and negatively worded) recorded at Time1 were included. Table 16 displays the effectiveness of the three models in accounting for the data. A battery of H-L tests returned non-significant chi-square values for the three models, suggesting that each model constituted an adequate fit to the data.

Table 13: *Un-standardised and standardised coefficients for each of the hierarchical binary logistic regression analyses when the RSES is represented as a ten-item scale.*

| | <i>B</i> | Std Error B | <i>Wald</i> | <i>e^b</i> | 95% C.I. for EXP(B) |
|-----------------|----------|-------------|-------------|----------------------|---------------------|
| Model 1 | | | | | |
| Constant | 1.15 | 0.48 | 5.87 | 31.38 | |
| Age | 0.01 | 0.02 | 0.54 | 1.012 | 0.98 - 1.04 |
| Gender | -0.24 | 0.39 | 0.39 | 0.784 | 0.36 - 1.69 |
| Model 2 | | | | | |
| Constant | -3.11 | 3.29 | 0.89 | 0.05 | |
| Age | 0.02 | 0.02 | 1.08 | 1.02 | 0.99 - 1.05 |
| Gender | -0.25 | 0.40 | 0.38 | 0.78 | 0.36 - 1.71 |
| BI | 1.69 | 1.11 | 2.29 | 5.40 | 0.61 - 47.83 |
| PBC | -0.32 | 0.48 | 0.44 | 0.73 | 0.28 - 1.87 |
| Subjective Norm | -0.05 | 0.35 | 0.02 | 0.95 | 0.48 - 1.90 |
| Attitude | 0.61 | 0.75 | 0.67 | 1.84 | 0.43 - 7.99 |
| Model 3 | | | | | |
| Constant | -2.40 | 3.75 | 0.41 | 0.09 | |
| Age | 0.02 | 0.02 | 1.03 | 1.02 | 0.98 - 1.05 |
| Gender | -0.25 | 0.40 | 0.40 | 0.78 | 0.35 - 1.70 |
| BI | 1.64 | 1.12 | 2.15 | 5.15 | 0.58 - 45.98 |
| PBC | -0.36 | 0.49 | 0.53 | 0.70 | 0.27 - 1.83 |
| Subjective Norm | -0.06 | 0.35 | 0.03 | 0.95 | 0.47 - 1.89 |
| Attitude | 0.62 | 0.75 | 0.70 | 1.87 | 0.43 - 8.04 |
| RSES (ten-item) | -0.02 | 0.05 | 0.15 | 0.98 | 0.90 - 1.08 |

NOTE: Outcome (Pass/Fail) is the dependent variable. * $p < .05$ (2-tailed)

Table 14: *Summary of the logistic regression analyses when the ten-item RSES is decomposed into two five-item subscales representing positively and negatively worded items.*

| | -2 Log likelihood | H-L Test | <i>p</i> -value | AIC | BIC |
|----------------|-------------------|----------|-----------------|-------|-------|
| Model 1 | 49.06 | 9.01 | .25 | 55.06 | 55.83 |
| Model 2 | 41.77 | 6.63 | .58 | 55.77 | 57.55 |
| Model 3 | 35.01 | 5.52 | .70 | 53.01 | 55.30 |

Inspection of Table 14 reveals that the three models are comparable in their ability to account for the data, though Model 3 has the lowest AIC and BIC values (see Equation 3). Table 15 displays maximum likelihood parameter estimates. For the only significant predictor variable contained in Table 15, negatively-worded items of the RSES, the odds of passing are 2.1 times greater for a student who has a negative RSES score one unit greater than another student.

The classification tables for all three models were identical irrespective of the form of the RSES predictor variable, and are displayed in Table 16. As can be seen, the models perform poorly, and their performance cannot be distinguished from the baseline model (i.e., intercept only). In fact, none of the models correctly predict a single fail.

Table 15: *Un-standardised and standardised coefficients for each of the hierarchical multiple linear regression analyses when the RSES is represented by its positive and negatively worded subscales.*

| | <i>B</i> | Std Error B | <i>Wald</i> | <i>e^b</i> | 95% C.I. for EXP(B) |
|-----------------|----------|-------------|--------------|----------------------|---------------------|
| Model 1 | | | | | |
| Constant | 3.45 | 1.15 | 8.92 | 31.38 | |
| Age | -0.01 | 0.03 | 0.11 | 0.99 | 0.93 - 1.05 |
| Gender | -0.16 | 0.86 | 0.03 | 0.86 | 0.16 - 4.59 |
| Model 2 | | | | | |
| Constant | -1.66 | 7.22 | 0.05 | 0.19 | |
| Age | 0.01 | 0.03 | 0.17 | 1.01 | 0.95 - 1.08 |
| Gender | -0.31 | 0.93 | 0.11 | 0.74 | 0.12 - 4.55 |
| BI | 3.41 | 2.66 | 1.65 | 30.20 | 0.17 - 54.49 |
| PBC | -2.09 | 1.46 | 2.04 | 0.12 | 0.01 - 2.17 |
| Subjective Norm | -0.68 | 1.09 | 0.39 | 0.51 | 0.06 - 4.25 |
| Attitude | 3.24 | 1.70 | 3.66 | 25.62 | 0.92 - 71.31 |
| Model 3 | | | | | |
| Constant | -1.24 | 7.18 | 0.03 | 0.29 | |
| Age | 0.01 | 0.04 | 0.09 | 1.01 | 0.94 - 1.09 |
| Gender | -0.25 | 0.97 | 0.07 | 0.78 | 0.12 - 5.16 |
| BI | 1.98 | 3.08 | 0.41 | 7.25 | 0.02 - 30.77 |
| PBC | -1.98 | 1.36 | 2.12 | 0.14 | 0.01 - 1.98 |
| Subjective Norm | -0.60 | 1.20 | 0.25 | 0.55 | 0.05 - 5.76 |
| Attitude | 3.61 | 1.98 | 3.32 | 36.89 | 0.76 - 83.66 |
| RSES Positive | -0.14 | 0.21 | 0.45 | 0.87 | 0.58 - 1.30 |
| RSES Negative | -0.33 | 0.15 | 4.58* | 0.72 | 0.54 - 97.30 |

NOTE: Outcome (Pass/Fail) is the dependent variable. * $p < .05$ (2-tailed)

Table 16: *Classification tables for baseline and the three models under scrutiny.*

| Outcome | Baseline | | Model 1 | | Model 2 | | Model 3 | |
|---------|----------|------|---------|------|---------|------|---------|------|
| | Fail | Pass | Fail | Pass | Fail | Pass | Fail | Pass |
| Fail | 0 | 44 | 0 | 44 | 0 | 44 | 0 | 44 |
| Pass | 0 | 167 | 0 | 167 | 0 | 167 | 0 | 167 |

NOTE: The columns represent the predictions of the models, while the rows represent the actual outcome.

Hypothesis Three: Self-Esteem will improve over time, from initiation to termination of a programme.

Self-Esteem, as measured by the RSES, encompasses a ten-item measurement of global self-esteem, as well our derived positive and negative self-esteem scales. Participant responses to the RSES at both time points tests Hypothesis Three. It is suggested that self-esteem should increase over the period of the programme; therefore initial scores should indicate lower self-esteem than final scores. Individuals rated a medium level of overall self-esteem at Time1 ($M = 20.59, SD = 4.34$), and a significantly higher level of self-esteem ($t_{(205)} = 4.70, p < .01$) at Time2 ($M = 22.36, SD = 4.67$). The scale ranges from 10-40, with scores between 20 and 30 considered normal, and scores below 20 suggestive of low self-esteem. When analysing the positive component of the RSES, mean scores at Time2 ($M = 12.35, SD = 2.31$) were significantly higher ($t_{(205)} = 4.59, p < .01$) than mean scores measured at Time1 ($M = 11.52, SD = 2.17$). The negative component of the RSES also showed this effect as means scores at Time2 ($M = 10.04, SD = 3.39$) were significantly higher ($t_{(205)} = 3.27, p < .01$) than at Time1 ($M = 9.25, SD = 2.99$).

Hypothesis Four: Differing ethnic groups will produce differential outcomes, show differing levels of self-esteem and respond differentially to items on the TPB measure.

Addressing Sub-Hypothesis a), predicting that ethnicity will have an influence on the educational outcome of the participants, a chi-square test undertaken on ethnicity and outcome (i.e., pass / fail) indicated no significant impact of ethnic identification on the likelihood of passing or failing the programme ($\chi^2_{(3)} = 0.52, p = .16$).

In relation to Sub-Hypothesis b), predicting that ethnicity will have an influence on self-esteem levels of the participants, the association between ethnicity and differences in RSES scores was further explored using a Multivariate Analysis of Variance (MANOVA). The MANOVA was undertaken employing gender (male and female) and ethnicity (Asian, Maori, Pacific Island, European) as fixed-factors, and age as a covariate. The dependent variables were the two measurements of the ten-item RSES (i.e., Time1 and Time2). No multivariate effect was found for gender, ethnicity or age, nor any significant interactions ($p < .05$).

In relation to Sub-Hypothesis c), predicting that ethnicity will have an influence on TPB scores, the association between ethnicity and TPB components; perceived behavioural control, subjective norm, attitude and behavioural intention was also examined.

Table 17: Means and Standard Deviations of Ethnic groups for subscales of the Theory of Planned Behaviour questionnaire.

| | N | M | SD |
|------------------------------|----|-------|------|
| PBC | | | |
| European | 21 | 41.19 | 5.92 |
| Maori | 77 | 41.62 | 5.17 |
| Pacifika | 84 | 39.02 | 6.54 |
| Asian | 14 | 43.00 | 6.04 |
| Subjective Norm | | | |
| European | 22 | 41.18 | 7.25 |
| Maori | 80 | 42.34 | 8.85 |
| Pacifika | 84 | 43.92 | 8.18 |
| Asian | 18 | 43.42 | 8.21 |
| Attitude | | | |
| European | 22 | 23.00 | 3.30 |
| Maori | 81 | 23.15 | 3.73 |
| Pacifika | 88 | 23.34 | 2.30 |
| Asian | 18 | 24.50 | 1.15 |
| Behavioural Intention | | | |
| European | 20 | 4.60 | 0.68 |
| Maori | 76 | 4.51 | 0.70 |
| Pacifika | 84 | 4.27 | 0.75 |
| Asian | 18 | 4.50 | 0.71 |

To reduce the experiment-wide error rate, a simple MANOVA was conducted with ethnicity group and gender as fixed factors and the four variables of the TPB constituting the dependent variables (DVs). Age was added as a covariate. Small-to-medium correlations existed between the four DVs at each level of ethnicity, and a Bartlett's test of sphericity ($\chi^2_{(9)} = 806.57, p < .01$) and a Box's M test of equality of covariance matrix ($F = 0.85, p = .65$) further confirmed the viability of a MANOVA. There was a small but significant multivariate effect of the grouped Dependent Variables (DVs) in relation to the fixed factors (Wilks Lambda = 0.87, $F_{(8, 266)} = 2.46, p = .01$), indicating that components of the TPB are related to ethnicity. Levene's tests of equality of variances were then performed prior to conducting univariate F tests. For each of the four DVs the null hypothesis that the within-groups variability is equitable across the four ethnicity groups was supported ($p > .01$). The univariate F tests showed that there were significant differences across the four ethnicities only for PBC ($F_{(3,181)} = 2.840, p = .04$) but not for the other three components ($p > .05$). A subsequent *post hoc* test employing Bonferroni inequalities revealed that Maori ($M = 41.6, SD = 5.17$) reported significantly higher levels of PBC than those identifying themselves as Pacific Islanders ($M = 39, SD = 5.92$) (see Table 17).

Discussion

The discussion that follows will relate the four hypotheses to the results and will then compare these findings to previous reports. The discussion will explain any differences found, assess the applicability of the data, critique methodology and offer future recommendations.

***Hypothesis One:** Theory of Planned Behaviour components and self-esteem predict intention to completion.*

Findings supported the hypothesis that both the Theory of Planned Behaviour (TPB) components and self-esteem predict intention to completion. After applying a hierarchical multiple linear regression analysis, the three components of TPB; subjective norm, perceived behavioural control and attitude had significant positive correlations to behavioural intent, above and beyond the covariates of age and gender. These were joined by an additional significant predictor, the ten-item RSES. Upon further analysis the ten-item RSES was decomposed into the negatively and positively worded subscales, of which the negative subscales showed significant impact on intent, whereas the positive did not. Ethnicity was excluded from the MLR models, however, as the sample size could not sustain this analysis, given the way that dummy variable are encoded in said analysis. Interestingly, the literature had not revealed any successful studies involving the use of TPB with ethnicity as a primary variable. Romano and Netland (2008) critiqued the TPB tool as a tool used by a variety of psychosocial, medical and educational disciplines. They described multiple studies that successfully used the TPB to predict intent, and then proceeded to apply resulting

information to facilitate remedial programmes or new initiatives; however no studies include the application to various ethnic groups. Rather they look at specific ethnicity or the research occurs in a multicultural context with no ethnic breakdown as to the applicability factors of the TPB. The TPB as described by Romano and Netland (2008) takes into consideration the norms and attitudes of individuals and groups, thus is very applicable to the study of ethnic related issues. However, as previously discussed, no studies have been found to support this process, nor have the findings of this study done so.

Prediction of intention has successfully been attributed to the TPB and this is now viewed as a well supported model, used in many studies in various formats. Various studies have discussed the validity of subjective norm as an indicator of intent. White et al. (2008) critiqued studies using the TPB and concludes that the importance of subjective norm as a predictor of intention is relative to the contextual format it is being used in, and the specific population involved. In this research subjective norm, previously thought to be a major influence in these students lives, and although significant, has not the dominance expected. Literature has revealed the impact of the low socio-economic conditions that these students exist in (Middleton 2008, 2009) and the profound influence this has on intent. Therefore, it is concluded that these students have not reacted strongly to these questions as they have gone beyond the requirement for peer or family support or approval. Perhaps they simply no longer care.

Attitude, often seen as the second cousin in the TPB, has been described by Ajzen and Cote (2008) as being global in nature, and as having various successes in predicting intent. Ajzen and Cote (2008) caution that attitude may be too general to predict specific intention. However, in this study attitude has been confirmed as being a predictor of intent to complete education.

Perceived behavioural control, also indicated intent to complete the programme. Perceived behavioural control has been referred to by Davis et al. (2002) as the most significant factor of the TPB for prediction of intent and is certainly the most dominant factor of this study when related to ethnicity, as will be discussed further on.

A component of the PBC includes the construct of self-efficacy. Self-efficacy is often thought to be synonymous with self-esteem, however self-esteem refers to the feelings a person has of self-worth, where as self-efficacy is the belief the person has about their ability to perform behaviour, two distinct but correlated terms. Research supports self-efficacy as a factor of completion of education (Bandura, 1982; Lane, Jones & Stevens, 2002; Lane, Lane & Kyprianou, 2004), as well as self-esteem contributing to outcome of education (Alpay, 2009; Gurney 1986). However, this study has established that self-esteem, combined with PBC provides predictive power above and beyond self-efficacy as part of PBC (as seen in the R^2 change from Model 2 to Model 3). These results justify the inclusion of self-esteem into the model of prediction of intent, and further support the work of Wang (2009). Few studies have, however, combined TPB with a self-esteem component. Wilkinson and Abraham (2004) supports the inclusion of self-esteem with the TPB as a conclusion of their study into interventions to reduce smoking. Wang (2009) also found that extending the TPB with a more specific variable would result in more detailed behavioural prediction, thus the inclusion of self-esteem into his methodology, ensuring a more comprehensive tool and a significant predictor of intent.

Hypothesis Two: Theory of Planned Behaviour and self-esteem will predict outcome.

Hypothesis Two was partly supported, self-esteem did predict outcome. Using binary logistic regression the negatively phrased questions from the RSES emerged as significant predictors of outcome, although the overall ten-item RSES did not. Those who responded strongly to the negatively worded questions of the RSES were 2.1 times more likely to achieve a positive outcome. Additionally, the inclusion of self-esteem into the variate produced a better model fit than when not included. There were no significant indicators of outcome associated with the TPB, nor did any models predict non-achievement. This may have been due to insufficient power, not enough variability in the outcome measure, and the possibility that another, more important, variable was unaccounted for.

Self-Esteem as a predictor of outcome has also been verified by Pepi et al. (2006, p. 618) who examined the personal conceptions of intelligence, self-esteem and academic achievement of Italian and Portuguese students. This study found that self-esteem was influential in school achievement, especially significant in the Italian students who appeared to have a consistently low self-esteem. Additionally, they reported that self-esteem was related to socio-economic variables and a correlated low academic achievement rate. The Italian students were faced with similar constraints and risks as those of this study, thus offering convergent validity in relation to the importance of self-esteem and outcome in similar contexts.

It is also interesting to note that the questions that were negatively phrased in the RSES have proved the most sensitive. Pursuing this finding, Zimprich, Perren and Hornung (2005) discuss various studies that have also found a more

complex factorial structure to the RSES, particularly those with significant findings in regards to the negative and positive questions. Reasons they provide for these findings extend from; wording effects revealing significant personality traits, self-derogation and self-enhancement, residual co-variances interpreted as a method effect of item wording and finally the self-liking, self-competency dimensions. However, the findings of this study did not produce an adequate answer to the domination of the responses to the negatively worded questions. Prior to the study by Zimprich et al. (2005), Gray-Little et al. (1997) using Item Response Theory analysed the RSES and discussed the negative worded statements as reflecting self-depreciation and the positive as defining a self-confidence. However the responses from their study did not indicate strong responses to the four statements reflecting self-confidence nor the two reflecting self-depreciation (see Table 2).

Perhaps the answer to the dominance of responses to the negatively worded questions can be found with Baranik (2008), reporting a correlation between collectivist cultures as responding strongly to negatively worded questions and individualistic cultures, the reciprocal. Collectivistic cultures are those similar to the ethnic groupings of the Manukau Region; the Pasifika, and Asian peoples, therefore this explanation as to the dominance of the negative worded questions would be more than mere conjecture.

The Counties Manukau Region is often described as multicultural with population gathering in its own areas to support each other, Maori predominantly residing in the decile nine and ten areas of Manurewa, Papakura and Otara and Pasifika living in similar conditions in Mangere and Manurewa. Asian populations gather in the Eastern suburbs and the European students live throughout the area (Counties Manukau District Health Board, 2008). This study may reflect the

community aspect of the demographics, rather than the perceived individualistic attributes associated to Westernised New Zealand. Whilst the Pasifika and Asian cultures are described as collectivistic, reaffirming the significance of the negative worded response results, research finds an interesting conflict within Maori born in an individualistic, western world and striving to achieve a collectivistic culture (Berghan, 2007).

The significant response of the negative worded questions may also reflect the domination of the gang culture within the region. Triandis and Suh (2002) describe affiliation with gangs as being high in those people of an individualistic society, seeking the community of a collectivistic culture. Whilst this is actively discouraged at this PTE, staff are aware of high gang membership amongst the students.

Tafarodi and Milne (2002) provide an alternative discussion as to the two factor aspect of RSES, that is; the self-liking, self-competency description; however these findings were not supported in this study, with clustering of the responses reinforcing the earlier discussion of negative and positive groupings. The five negatively worded questions concerned are:

- All in all, I am inclined to feel that I am a failure.
- I feel I do not have much to be proud of.
- I wish I could have more respect for myself.
- I certainly feel useless at times.
- At times I think I am no good at all.

Reflecting on these questions and the provocative quality of the questions as a whole, these five would tend to stimulate reaction in people, regardless of self-esteem levels, and would therefore provide more variability of answers. Question

eight includes the term 'wishøhas, in other research, stimulated discussion pertaining to cultural perceptions of the word 'wishøand in some cases this question has been removed from the questionnaire (Farraggia, Chen, Greenberger, Dmitrieva & Macek, 2004). A study of three countries, Canada, United States and New Zealand also found a strong reaction to question eight by the New Zealand respondents (Rusticus, Hubley & Zumbo, 2004). There is, however, little literature that appears to dissect the actual questions of the RSES and that discusses the emotive responses that may result from them, other than to explaining it as evidencing a personality trait (Zimprich et al., 2005) or an item response (Farraggia et al., 2004).

Hypothesis Three: Self-Esteem will increase over the duration of the programme.

Findings support this hypothesis with significant increases indicated by the ten-item RSES as well as evidenced in both the negative and positively worded questions. Individuals did return a borderline initial level of self-esteem ($M=20.59$) and a significantly higher level at completion ($M=22.36$). There were no differences in self-esteem levels experienced between age, gender nor ethnicity.

Results do, however, indicate a significantly low self-esteem over-all with self-esteem at completion still only at $M=22.36$. The initial survey result indicated that 115 of the 211 learners had a score below the criteria (i.e., below 20) and at completion this had improved to 104 learners. Further validation of this result of the overall low level of self-esteem was confirmed by a report examining self-esteem across eight cultures, of which New Zealand was one. This study, employing the RSES examined the self-esteem of first year university students,

who can be assumed to have a reasonable level of self-esteem. Despite this, New Zealand had the lowest mean score when comparing countries of similar independent cultural values, with $M=30.4$, compared with South Africa, a country that we could assume would have a low self-esteem, with $M=30.8$ and the United States $M=31.3$. Singapore had the highest mean with 31.9 (Baranik et al., 2008).

A further study examining cross-country comparability of the RSES also came to the conclusion that New Zealand, when compared to similar countries of the United States and Canada has a low level of self-esteem, with the United States $M=31.9$, Canada at $M=31.0$ and New Zealand $M=29.9$ (Rusticus et al., 2004). Both of these reports found no significant differences in age or gender, as also seen in this study.

Rosenberg et al. (1995) describes a global self-esteem and a specific self-esteem. Global self-esteem, reflecting a more general sense of worth, whilst specific is related more to a particular aspect of self such as academic self-esteem. Students were focussed on answering the survey in an academic setting and thus may have answered slanted towards the specific context, however this does not adequately explain the findings we have. The RSES has six items identified as relating to global self-esteem, however the clustering of responses did not support this, rather supporting the negative, positive dichotomy as previously discussed. Therefore we question the applicability of the global, specific self-esteem classification, as related to this study.

The gratifying finding of this section of this study is that self-esteem did increase over the duration of the programmes, albeit a small but significant increase.

Hypothesis Four: Ethnicity influences outcome; self-esteem and Theory of Planned Behaviour components.

This hypothesis is further deconstructed into three sub-hypotheses:

- Ethnicity will have an influence on the outcome of the participants
- Ethnicity will influence self-esteem levels of the participants, and
- Ethnicity will influence the three factors of the Theory of Planned Behaviour; subjective norm, perceived behavioural control and attitude.

Hypothesis 4a: Ethnicity will have an influence on the outcomes of the participants.

Findings for Hypothesis 4a were not supported, possibly due to the limitations of this study, the small sample size and the very small number of non-achievers (21%). In reality we would expect some ethnic influences, especially in an area known for its diverse ethnic population and associated issues. The Counties Manukau Regional Facilitation Statement (Middleton, 2008) clearly portrays ethnic achievement based on numeracy and literacy as 82% of Pasifika, 76% of Asians, 66% of Maori, and 36% of New Zealand European as having low English prose literacy. For numeracy; 89% of Pasifika, 79% of Maori, 75% of Asians and 48% of New Zealand European with numeracy proficiency levels below Level 3. As this study did not support the hypothesis we can conclude that either the limitations were too severe, or that the ethnic differences were not conclusive or sufficiently variable to support other findings. Regardless of ethnicity, many of these students do live in similar circumstances and have backgrounds of a comparable nature, promoting risk of non-achievement.

Hypothesis 4b: Ethnicity will influence self-esteem levels of the participants.

Self-Esteem levels were not affected by ethnicity, which may reflect the already low feelings of self that these learners, regardless of ethnicity, enter the programmes with. The entry criteria for the majority of the programmes offered by this PTE, is for learners to be of low or non-achievement. Many learners were not in employment, education or training (NEET) prior to entry and people of the NEET category are usually of low self-esteem, and have many issues associated with the low socio-economic and low decile environments that they reside in (Middleton, 2009). Those people of the NEET category are described as; three times more likely to suffer depression and five times more likely to have a criminal record (Research as Evidence, 2007) and are estimated to be a cost on the Counties Manukau Region of between \$55 and \$73 million per annum (Ernst & Young, 2005), a significant amount.

The Counties Manukau Regional Facilitation Statement 2008 (Middleton, 2008) describes this region as having the highest number of youth, highest number of unemployed, largest ethnic mix, poorest retention rate in education, the largest number of people with low or no qualifications and lowest earning power, than any other region in New Zealand (OECD, 2007). Jackson et al., (2001) reports a high number of residents with drug and alcohol abuse problems and a history of sexual abuse and many with serious health issues. With this type of information; the demographics of the learners, first hand experiences, and what is seen on a daily basis, it is not unexpected that self-esteem levels are attenuated throughout this region.

A differing opinion as to the influence of the socio-economic and the decile rating of an area has been provided by Peachey (2009) who opposes the extreme emphasis placed on the decile ratings of an area, believing that this is just

a politically acceptable excuse for failure. Peachey (2009) argues, that the poor achievement is more closely related to the expectations that the school management and teachers have on the student. Many facilitators within these low decile regions have expectations that actually fall below the students own level of self-esteem, reconfirming to the student that they are in fact not able to achieve. Peachey (2009, p.1) goes on to state that "excellence does not occur because a school has a high decile rating, nor is it denied children in low-decile schools. Excellence stems from a state of mind: it has no decile rating; it is not a socio-economic condition. It comes from adults' and messages that adults send to children".

Perhaps sufficient messages are not sent to our children and therefore to our future adults. Are we allowing our students from this low decile area to enter into education with a pre-ordained ethic of failure and if and when we support these students are we only addressing global self-esteem rather than specific? If, as this study has found that self-esteem is low in this region, and in New Zealand as an entirety, regardless of circumstances, it will be very difficult to encourage any growth of significance.

Hypothesis 4c: Ethnicity will influence the three factors of the Theory of Planned Behaviour; subjective norm, perceived behavioural control and attitude.

Findings for this hypothesis were only partially supported. The components of TPB are related to ethnicity as indicated by the MANOVA, and upon further analysis the PBC indicated a significant difference. In terms of ethnicity there was a difference found between Maori ($M=41.6$) and Pasifika ($M=39.0$) with Pasifika reporting a lower PBC, that is, they perceive more barriers

to achieving their outcomes than their Maori counterparts. Many studies have used the components of the TPB as a means of predicting intent and outcome for specific behaviour, unfortunately not identifying ethnic groupings. As previously discussed literature has not revealed any successful studies involving the TPB and ethnicity as a primary variable. Confirming this is a study by Jaret and Reitzes (2009) investigating the relationship between self-esteem, self-efficacy (a component of the PBC) and academic achievement. Although they did establish a direct relationship with all three, they were not able to establish a relationship between self-efficacy and self-esteem with ethnic grouping, as they initially hypothesised.

The present findings reveal a significant difference between the PBC of Maori and Pasifika. We were unable to provide a valid comparison between the other ethnic groups due to limitations of sample size, however this particular finding was significant and surprising. Speculation would have us surmising that PBC would be similar, as both ethnicities have similar demographics and are, or are striving to be collectivistic in culture. Perhaps the one contributory difference able to be observed was that the Pasifika participant appears to have stronger family influence, with Dad, Uncle and Aunty often dominant, whereas many of our Maori students come from a single parent home and, although, whanau are nearby, the direct influence does not appear to be as strong. Perhaps the cyclic affect of non-achievement, within the family, as described by Rennison et al. (2005), has produced a blasé attitude, therefore perception of barriers is not as evident. Many of the Pasifika students also report that they perceive barriers to long term achievement due to a cultural and financial obligation of supporting the family both in New Zealand and in their country of origin.

Limitations

The sample size of 211 students with only 44 failures may have elicited a Type II error due to insufficient power, restricting the ability to successfully predict the influence of TPB components and the RSES on outcome. However, with reference to Cohen and Cohen (1983) our sample size can be considered adequate given the number of variables that were included (i.e., 6-8). Additionally the sample size was too small for ethnicity to be nested within the TPB, and the running of a separate MANOVA slightly inflates the risk of a Type 1 error. A difficulty experienced was that only approximately 21% of the sample size was classified as failures or non-achievers, this was insufficient for either the TPB or RSES to truly predict outcome, although the RSES did return significant findings. The outcome variable of pass/fail has also limited the results of the study and although a continuous variable, such as a grade point average may have assisted, this is not a measure used by Private Training Establishments. A further study using a larger sample size is recommended, combining the TPB with the RSES. Ultimately, the development of a specific measure of prediction of outcome would be extremely beneficial.

Additionally, students were only allowed to choose one item from a grouping of five, to indicate intent, which may have restricted the depth of this aspect of the study. Although this was supported by Francis et al. (2004), other studies have enlarged this section of the survey with successful results (Ajzen & Driver, 1992).

Only one cohort of students were researched, predominantly coming from the same geographical region and therefore with similar demographics. Age and ethnicity did vary, thus sample composition was good. This may be seen as a

limitation, however in this context it was a purposeful aspect of the research. The primary drive of the study was to assess self-esteem within a specific population. The PTE intuitively assessed the students as entering the programmes with low self-esteem. This assumption was justified within these findings and is an indication of the requirement for further research.

Procedure

The instruments used returned good psychometric properties, however there may have been slight issues of comprehension within the student cohort, which were addressed by the Research Assistant at the time. Learners may also have become complacent with answering the surveys. Some participants required significant time to respond to the two surveys, therefore various distortions and sample bias may have occurred.

Future Directions

This study supports further research into the use of self-esteem to predict outcome in education. The findings from the RSES may be used by an institution to investigate risk to completion, providing that facility with an opportunity of working with identified learners and assisting them to achieve their goal of a positive outcome from tertiary education. A concern would be that this tool could be used as a screening mechanism prior to enrolment, reducing the risk to the institution of having poor outcome results. This would successfully limit many options for the already challenged learner and refusal of entry into a normally accepting institution will compound the already low self-esteem (Baranik et al., 2008).

The findings of an overall low self-esteem level for these students, as well as for New Zealand, supported by literature, also warrants further investigation. New Zealand as an individualistic nation could be expected to exhibit much higher self-esteem scores. As already established, low self-esteem has many ramifications on the individual and on society, thus further investigation into the low levels, contributing factors and remedial steps may result as a significant research undertaking (Whitesel, Mitchell & Spicer, 2009).

Further research into the two factor response of the RSES would be of interest, especially into the implication of the collectivist societies surviving, or changing in a western world. Of further relevance would be the growth of the collectivist culture of the Maori and the impact within this region.

The Theory of Planned Behaviour did not establish the significance that would be expected in this type of research, especially in relation to the components of subjective norm and perceived behavioural control. However, Romano and Netland (2008) reinforce the applicability of this theory, especially in relation to multicultural groups and education. It could be surmised that the TPB did not return the significant findings as first hypothesised, due to the students actually not caring about factors sufficiently to be influenced by any form of control. Fee paying students have the constrictions of debt and associated factors, these students do not. The students of this study are often in a situation where they do not believe to any great degree that anyone really cares what they do and as to achieving, maybe they will, maybe they wont? University students enter their programmes knowing that graduation is an expectation of them by peers and society.

A further study, using the same methods, investigating the same ethnic groups, with a larger cohort, may invalidate these present findings. The future

study could include students from a variety of educational institutions and reveal other factors relevant to non-achievement in education and further directions to mitigate these issues. Should this study achieve similar findings to the present it is recommended that self-esteem measures be combined with a different theoretical framework such as Bandura's Social Cognitive Theory, which is based on self-efficacy. The PBC, with self-efficacy as a component, has returned a significant finding, therefore perhaps combining self-esteem with self-efficacy would produce a model sufficient to predict intention and outcome (Wood, 2008).

Summary

In conclusion, this research adds to the literature, especially in relation to self-esteem. The TPB and self-esteem predicted intent and the negatively worded items in the RSES did predict outcome. Further evidence has been supplied towards the two-factor debate of the RSES and to the validity of the negatively, positively worded questions. We further add to the discussion of the collectivistic nature of New Zealand Society, as indicated by the responses to the negatively worded questions. Literature has established that New Zealand is perceived to be a country of low self-esteem and we have provided further evidence towards this discussion. We have also found that self-esteem levels did increase over the duration of the programme, as hypothesised.

Ethnicity was not a significant factor of the findings, although components of the TPB were related to ethnicity, especially PBC in relation to Pasifika reporting a low PBC, therefore perceiving more barriers to achieving. We have revealed a possible omission in past research, as no other literature has been sourced that has established successful studies of the TPB with ethnicity as a primary variable.

Further studies are encouraged, as the ability to predict outcome in the adult learner, and using this means to assist the learner to achieve, would be a significant contributor to the individual, to the learning establishment, as well as to New Zealand.

Appendices

Appendix A:

New Zealand Qualification Authority Level Descriptors

LEVEL PROCESS LEARNING DEMAND RESPONSIBILITY

| Standard | Employing/Requiring | Applied |
|---|---|--|
| <p>1. <i>Carry out processes that:</i></p> <ul style="list-style-type: none"> • Are limited in range • Are repetitive and familiar • Are employed within closely defined contexts | <ul style="list-style-type: none"> • Recall • A narrow range of knowledge and cognitive skills • No generation of new ideas | <ul style="list-style-type: none"> • In directed activity • Under close supervision • With no responsibility for the work or learning of others |
| <p>2. <i>Carry out processes that:</i></p> <ul style="list-style-type: none"> • Are moderate in range • Are established and familiar • Offer a clear choice of routine responses | <ul style="list-style-type: none"> • Basic operational knowledge • Readily available information • Known solutions to familiar problems • Little generation of new ideas | <ul style="list-style-type: none"> • In directed activity • Under general supervision and quality control • With some responsibility for quantity and quality • With possible responsibility for guiding others |
| <p>3. <i>Carry out processes that:</i></p> <ul style="list-style-type: none"> • Require a range of well developed skills • Offer a significant choice of procedures • Are employed within a range of familiar contexts | <ul style="list-style-type: none"> • Some relevant theoretical knowledge • Interpretation of available information • Discretion and judgement • A range of known responses to familiar problems | <ul style="list-style-type: none"> • In directed activity with some autonomy • Under general supervision and quality checking • With significant responsibility for the quantity and quality of output • With possible responsibility for the output of others |
| <p>4. <i>Carry out processes that:</i></p> <ul style="list-style-type: none"> • Require a wide range of technical or scholastic skills • Offer a considerable choice of procedures • Are employed in a variety of familiar and unfamiliar contexts | <ul style="list-style-type: none"> • A broad knowledge base incorporating some theoretical concepts • Analytical interpretation of information • Informed judgement • A range of sometimes innovative responses to concrete but often unfamiliar problems | <ul style="list-style-type: none"> • In self-directed activity • Under broad guidance and evaluation • With complete responsibility for quantity and quality of output • With possible responsibility for the quantity and quality of the output of others |

| | | |
|--|--|--|
| <p>5. Carry out processes that:</p> <ul style="list-style-type: none"> • Require a wide range of specialised technical or scholastic skills • Involve a wide choice of standard and non-standard procedures • Are employed in a variety of routine and non-routine contexts | <ul style="list-style-type: none"> • A broad knowledge base with substantial depth in some areas • Analytical interpretation of a wide range of data • The determination of appropriate methods and procedures in response to a range of concrete problems with some theoretical elements | <ul style="list-style-type: none"> • In self-directed and sometimes directive activity • Within broad general guidelines or functions • With full responsibility for the nature, quantity and quality of outcomes • With possible responsibility for the achievement of group outcome. |
| <p>6. Carry out processes that:</p> <ul style="list-style-type: none"> • Require a command of wide-ranging highly specialised technical or scholastic skills • Involve a wide choice of standard and non-standard procedures, often in non-standard combinations • Are employed in highly variable routine and non-routine contexts | <ul style="list-style-type: none"> • Specialised knowledge with depth in more than one area • The analysis, reformatting and evaluation of a wide range of information • The formulation of appropriate responses to resolve both concrete and abstract problems | <ul style="list-style-type: none"> • In managing processes • Within broad parameters for defined activities • With complete accountability for determining and achieving personal and/or group outcomes |
| <p>7. Carry out processes that:</p> <ul style="list-style-type: none"> • Require a command of highly specialised technical or scholastic and basic research skills across a major discipline • Involve the full range of procedures in a major discipline • Are applied in complex, variable and specialised contexts | <p>Requiring:</p> <ul style="list-style-type: none"> • Knowledge of a major discipline with areas of specialisation in depth • The analysis, transformation and evaluation of abstract data and concepts • The creation of appropriate responses to resolve given or contextual abstract problems | <ul style="list-style-type: none"> • In planning, resourcing and managing processes • Within broad parameters and functions • With complete accountability for determining, achieving and evaluating personal and/or group outcomes |
| <p>8. Involves skills and knowledge that enable a learner to:</p> <ul style="list-style-type: none"> • Provide a systematic and coherent account of the key principles of a subject area; and Undertake self-directed study, research and scholarship in a subject area, demonstrating intellectual independence, analytic rigour and sound communication | | |
| <p>9. Involves knowledge and skills that enable a learner to:</p> <ul style="list-style-type: none"> • Demonstrate mastery of a subject area; and • Plan and carry out - to internationally recognised standards - an original scholarship or research project. | <p>Demonstrated by:</p> <ul style="list-style-type: none"> • The completion of a substantial research paper, dissertation or in some cases a series of papers. | |
| <p>10. Involves knowledge and skill that enable a learner to:</p> <ul style="list-style-type: none"> • Provide an original contribution to knowledge through research or scholarship, as judged by independent experts, applying international standards. | | |

* New Zealand Qualifications Authority (2004)

Appendix B:

Participant Information and Instruction Sheet



- **By completing and returning the questionnaire below, you are expressing your consent to participate in this study.**
- **You are under no obligation to do so as your participation in this study is completely voluntary.**
- **You are also free to withdraw at any stage during the completion of the survey.**

THIS STUDY IS APPROVED BY AUCKLAND UNIVERSITY OF TECHNOLOGY ETHICS COMMITTEE (AUTEC) ON 24th August 2009 for 2 years. Reference Number 09/97

Initials _____

Class _____

Date _____

Instructions

This assessment asks how you feel about yourself, your decisions and how other people feel about these. Please answer all the questions. If unsure about which response to give to a question, please choose the one that appears most appropriate. This can often be your first response. A research assistant is available to clarify any concerns you may have while completing the questionnaire. For further information on this study please contact:

Christine Clark
Masters Student
1/114 Wiri Station Road
Manukau, Auckland 2241
PO Box 97049, Manukau
Ph: (09) 263 0949 or 0508 2677477

We ask that you think about your life in the **last two weeks** and circle the number that is the best choice for you.

An EXAMPLE for you:

I find it hard to get up each morning
Agree 1 2 3 4 5 disagree ó it is easy to get up

You may be a person who struggles to wake and get up therefore you would circle 1, if however you wake well and get out of bed easily you would circle 5.

Appendix C:

Theory of Planned Behaviour (TPB) Questionnaire

Please complete the following:

Perceived Behavioural Control

I find it hard to get to class on time

Agree 1 2 3 4 5 disagree ó it is easy

I have other commitments that may mean I can not study properly

Agree 1 2 3 4 5 disagree ó study will be easy

I don't have the skills and knowledge for this programme

Agree 1 2 3 4 5 disagree ó I have the skills and knowledge

I will find the discipline and rules hard

Agree 1 2 3 4 5 disagree ó it will be fine

I have learning difficulties which will make this programme hard

Agree 1 2 3 4 5 disagree

Financial problems may mean that I will not complete this programme.

Agree 1 2 3 4 5 disagree ó finances will not be a problem

I can overcome all problems to complete this programme

Agree 1 2 3 4 5 disagree

It is mostly up to me whether I complete this programme

Agree 1 2 3 4 5 disagree

If I want to I will easily complete this programme

Agree 1 2 3 4 5 disagree

I have complete control over completing this programme

Agree 1 2 3 4 5 disagree

Social

My family think this is a good programme

Agree 1 2 3 4 5 disagree ó they do not think it is

My family believe that I will finish this programme

Agree 1 2 3 4 5 disagree ó they don't believe I will

My family think I should finish this programme and go into this field / career

Agree 1 2 3 4 5 disagree ó they don't like this career

My family are very supportive of me

Agree 1 2 3 4 5 disagree

My family would be disappointed in me if I did not finish this programme

Agree 1 2 3 4 5 disagree ó they would not care

My friends think that I am doing the right thing

Agree 1 2 3 4 5 disagree

My friends think that I should try hard and finish this programme

Agree 1 2 3 4 5 disagree ó they think I should leave now

My friends are very supportive of me

Agree 1 2 3 4 5 disagree ó they think this is a waste of time

My friends think I should carry on and go into this career

Agree 1 2 3 4 5 disagree ó they think I am wrong

My friends would be disappointed in me if I did not finish this programme

Agree 1 2 3 4 5 disagree ó they wouldn't care

Attitude

I believe that finishing this programme is beneficial to me

Agree 1 2 3 4 5 disagree

I believe that I will enjoy this programme

Agree 1 2 3 4 5 disagree ó I won't enjoy it

I believe I will find this programme very rewarding

Agree 1 2 3 4 5 disagree ó It will not be rewarding

I believe that this programme is the start to my real future

Agree 1 2 3 4 5 disagree

I believe that I will be a success

Agree 1 2 3 4 5 disagree ó I will fail

Intent

Circle the one choice that best describes how you feel.

1. I expect to complete this programme
2. I am determined to complete this programme
3. I will try to complete this programme
4. I might not complete this programme
5. I probably will not complete this programme.

Appendix D:

Rosenberg (1965) Self-Esteem Scale (RSES)

Rosenberg (1965) Questionnaire **Initials** _____ **Class** _____ **Date** _____

Below is a list of statements dealing with your general feelings about yourself. Tick the box that you agree with the most.

| | | 1. Strongly Agree | 2. Agree | 3. Disagree | 4. Strongly Disagree |
|----|---|-------------------------|-------------|----------------|----------------------------|
| 1 | I feel that I am a person worth, at least on an equal plane with others | | | | |
| 2 | I feel that I have a number of good qualities | | | | |
| 3 | All in all, I am inclined to feel that I am a failure | | | | |
| 4 | I am able to do things as well as most other people | | | | |
| 5 | I feel I do not have much to be proud of | | | | |
| 6 | I take a positive attitude toward myself | | | | |
| 7 | On the whole, I am satisfied with myself | | | | |
| 8 | I wish I could have more respect for myself | | | | |
| 9 | I certainly feel useless at times | | | | |
| 10 | At times I think I am not good at all | | | | |

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