

Group Differences in the Achievement-Related Cognitions of
Australian High School Students

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Statement of Declaration

I, Nadya M. Kouzma, declare that the PhD thesis entitled “Group Differences in the Achievement-Related Cognitions of Australian High School Students” is no more than 100,000 words in length, exclusive of tables, figures, appendices, references and footnotes. This thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work.

Signature: _____ Date: _____

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Abstract

The aims of this study were to gain a more highly defined understanding of academic achievement by examining possible demographic differences in students' achievement-related cognitions; and provide information that may allow future researchers to design programs aimed at improving students' academic achievement within specified demographic strata. More specifically, the aims of the present study were two-fold, (a) to investigate sociodemographic differences in students' achievement-related cognitions and (b) to examine the role of identity status in students' achievement-related cognitions. The participants were 325 students (122 males and 203 females) recruited from five large secondary schools from across Metropolitan Melbourne. The results showed that most of the significant differences in students' achievement-related cognitions were grade and identity status related. This suggests that much of the variability in achievement-related cognitions measured in this study may be environmental (i.e., grade differences) and/ or developmental (i.e., age differences and maturation) in nature. These results are important in order to identify at-risk groups (i.e., at-risk of achievement problems) and to better structure learning environments and support systems for these students, in an effort to enhance or facilitate their achievement prospects. Continued research in the area will help provide evidence-based practices in Australian schools.

CHAPTER 1. INTRODUCTION

Overview

Research supports the contention that a combination of social and psychological factors impact on achievement at school (Hemmings, 1996). Bacete and Ramirez (2001) noted that, although intelligence is an important determinant of school achievement (Bacete & Ramirez, 2001), it only accounts for an estimated 35% of the variance in achievement (Castejon & Navas, 1992). Achievement motivation (e.g., Anderman & Maehr, 1994), concept of academic ability (e.g., Marks, Fleming, Long, & McMillan, 2000), educational and occupational aspirations (e.g., Qian & Blair, 1999), and parental cognitions (e.g., Grolnick & Slowiaczec, 1994) have been identified as important variables related to school achievement. A host of researchers have endeavoured to examine group differences in these “achievement-related variables” in an attempt to explain group differences in students' educational outcomes (Strage, 2000).

The value of integrating social group variables such as culture, socioeconomic background, gender, grade, and, to a lesser extent, personality factors such as adolescent identity status in educational research has been stressed by a number of researchers. Lavery (1999) indicated that achievement-related variables cannot be understood without considering the social fabric in which they are embedded. Therefore, she suggested that it is important to examine achievement-related variables in light of cultural background, particularly in a multicultural setting where educational inequality is rife. Marjoribanks (1991) argued that research into the

dynamics of socioeconomic background and achievement-related variables may lead to an enriched understanding of social inequality in students' educational outcomes. Marks, McMillan, and Hillman (2001) noted the importance of gender differences in educational research, especially given the continuing debate about the relatively poor educational outcomes of males compared to females. Wigfield and Eccles (1992) emphasised that age-related or grade-related patterns in educational variables can provide great insight into the developmental aspects of students' achievement-related cognitions. Hummel and Roselli (1983) highlighted the importance of integrating students' personality profiles using adolescent identity status within the educational domain. They argued that the impact of psychosocial developmental tasks (in this case, identity formation) on achievement-related variables is relatively unknown.

Contribution to Knowledge

The need to account for group differences in achievement-related variables is particularly important in order to identify at-risk groups (i.e., at-risk of achievement problems), and to better structure learning environments and support systems for these students, in an effort to enhance or facilitate their achievement prospects (Lavery, 1999). Ponsford and Lapadat (2001) stressed, “[schools can] use their knowledge of students' views and beliefs to identify support strategies and to modify the educational environment” (p. 140). Okagaki and Frensch (1998) warned that we cannot assume that what works for one group will necessarily work for another. They argued that disregarding the social and economic contexts in which students live may make intervention strategies that work in some family contexts ineffective in others. Importantly, Stipek and Weisz (1981) argued that, if achievement-related variables

are more amenable to change than intelligence, then achievement might be enhanced indirectly through practices that positively influence the development of these achievement-related cognitions in students. This may be particularly important for students who are at-risk of low educational achievement.

Dowson and McInerney (1998) argued, *“relationships between students’ school perceptions, motivation, cognition and achievement vary as a function of their age, gender, cultural, and socioeconomic backgrounds. There is, therefore, an implied need to tailor motivational and cognitive programs, aimed at enhancing students’ achievement, based on relevant student differences. This, of course, complicates the issue somewhat. However, it is possible to suggest that the dividends for paying appropriate attention to relevant student differences may well be worth the effort involved in tailoring achievement-enhancing programs to students’ differing cognitive and motivational profiles”* (p. 19).

A plethora of research attempting to uncover a link between social group variables and achievement-related variables exists in the literature. However, many of these have tended to focus on one or two classes of influences (Farmer, 1985). It is more likely, however, that the combined influence of several factors will account for substantial variance. Therefore, a multidimensional approach should be adopted and utilised in the study of students' achievement-related cognitions (Farmer, 1985). In addition, many of the reported findings are not recent and come from Northern Hemisphere sources, mainly from samples in the United States of America, and many of the Australian studies were conducted during the 1980s when a minority of the student population completed secondary and post-secondary schooling (Hemmings, 1996). Marjoribanks (2002a) argued, *“a set of propositions applicable in one*

international setting may not easily be generalised to another country” (p. 2).

More recently, Marjoribanks (2002a) called for more research that seeks to identify between-group factors that are related to school outcomes. He argued, “*One of the persistent challenges confronting societies is how to reduce inequalities in the educational and occupational attainment of students from different socio-economic, ethnic and race group backgrounds*” (p. 1). The role of culture, socioeconomic background, gender, grade, and adolescent identity status to achievement-related variables is unknown at this time. Therefore, a thorough investigation of group differences in achievement-related variables is warranted. The present study explored achievement-related variables in a diverse high school student population residing in Metropolitan Melbourne, Australia. This study represented a major research effort aimed at identifying group differences in students' achievement-related cognitions.

Statement of Significance

A unique aspect of this study was that a number of achievement-related variables were examined together in a diverse high school student population in Metropolitan Melbourne, Australia. This was important given the increased diversity of the Australian population, with one in four students now estimated to be from a non-English speaking background and more students continuing their education to beyond high school (Marks et al., 2000). This has resulted in a new population of high school students in Australia, about which we know little (Hemmings, 1996). Graham and Taylor (2002) recently argued, “*For the psychologist concerned with academic achievement, the study of motivation provides a rich framework for addressing some of the most pressing issues facing our educational system today. These issues often*

revolve around problem areas- low test scores, grade retention, early withdrawal, and various disciplinary practices associated with antisocial behaviour, like suspension and expulsion” (p. 121).

In Australia's National Goals (1999), it is contended that schooling should be “socially just”, so that students' outcomes from schooling are free from the negative effects of discrimination based on culture, socioeconomic background, or gender, just to name a few; that the learning outcomes of educationally disadvantaged students improve and, over time, match those of other students; and that all students have access to high quality education necessary to enable the completion of school education to Year 12.

These national goals provide a basis for investing in schooling to enable all young people to engage effectively with an increasingly complex world, one which is characterised by advances in information and communication technologies, population diversity arising from international mobility and migration, and complex environmental and social challenges (Australia's National Goals, 1999). One of the critical first steps to achieving these goals is to identify group differences in students' achievement-related cognitions in order to increase our understanding of such inequalities.

Participation in Education in Australia

The following statistics provide an overview of participation in Australia's education system. More specifically, these statistics offer insight into differences in participation in education according to culture, socioeconomic background, and gender. James (2000) emphasised that, overall, these trends show that there is reason

for concern. Similarly, Hugo (2001) stressed that the increased diversity of the school-age population in Australia will concomitantly increase the challenges faced by the Australian education system.

Fullarton, Walker, Ainley, and Hillman (2003) argued, *"Levels of participation in education are important because of the associations between the knowledge and skills that education can provide, the economic benefits for individuals with higher levels of educational participation and the well-being of the nation. People with higher levels of education are more likely to participate in the labour market, less likely to be unemployed, more likely to have higher earnings and enjoy other social advantages. More particularly, those people who stay at school until the final year are more likely to continue their involvement in education and training and thereby gain more directly from employment-related skills. This is one reason why an increase in participation in the final year of secondary school, or an equivalent, has been an important feature of government reports and government policy over the past two decades"* (p. 57).

One of the most significant changes in Australian education during the last two decades has been the increase in the percentage of students who have remained at school to complete secondary school (Marks et al., 2000). The number of students completing Year 12 more than doubled between the early 1980s (35%) to the mid-1990s (78%) (Long, Carpenter, & Hayden, 1999) and was just over 73% in 2001 (Australian Bureau of Statistics, 2002a, 2002b). Higher completion rates for Year 12 have also been accompanied by an increased rate of participation in higher education, 20% in the early 1980s compared with 39% in the mid-1990s (Long et al., 1999). In 1991, 8% of people aged 15 years and over held a degree or higher educational

qualification. This was more than four times the proportion in 1971 (Australian Bureau of Statistics, 1994a). In 1999, 78% of 15-19 year olds were attending an educational institution, compared to 66% in 1989 (Australian Bureau of Statistics, 2000). The retention of students to Year 12 has also increased from 60% in 1989 to 72% in 1999 and has remained relatively stable (Australian Bureau of Statistics, 2000).

Due to the rapid increase in student numbers and changes in the type of students completing secondary schooling, little information is available about the factors that affect the educational outcomes of this new student population (Hemmings, 1996). The major force behind the increase in participation in education has been the increased demand for occupations requiring higher levels of education and training. This demand has arisen through a combination of technological change, microeconomic reform, and globalisation (Long et al., 1999). McMillan and Marks (2003) also argued, *"changes in school curriculum to accommodate a wider range of students, increased Commonwealth financial assistance for young people in low income families, a recognition by young people and their families of the growing importance of educational qualifications, and in the early 1990s, high unemployment rates prompting some would-be school non-completers to remain at school"* (p. 2) have all contributed to the increase in participation in education in Australia.

Most research findings indicate that equality is an important issue in participation in education rates (James, 2000). Traditionally, cultural background, socioeconomic background, and gender have been variables of interest.

Cultural Group Differences in Participation

Birrell and Khoo (1995) analysed data with respect to cultural background differences and educational outcomes from the 1991 Australian Census, and found that a greater proportion of students with fathers born in Australia had left school at 16 years of age or earlier compared to students with fathers born in Southern European, Eastern European, Middle Eastern, or Asian countries. They also found that second generation students from Eastern Europe, the Middle East, and Asia had almost double the rates of tertiary education qualifications compared to their Australian counterparts. Marks and McMillan (2001) analysed data from the 1995 Year 9 Longitudinal Study of Australian Youth (LSAY) cohort, which comprised over 13,000 students in Year 9 in 1995. They found that 12% of students whose parents were born in non-English speaking countries did not complete high school, compared to 24% of students whose parents were born in an English-speaking country. Recently, Fullarton et al. (2003) analysed data from two sources: all of the four Year in Transition (YIT) cohorts, which comprised of about 5,500 Australian students born in 1961, 1965, 1970, or 1975 and who were in Year 8, 9, or 10 between 1975 and 1989 (between 10 and 14 years of age) who were surveyed annually since 1989; and data from the 1995 Year 9 LSAY cohort and the 1998 Year 9 LSAY cohort (which comprised of over 14,000 students who were in Year 9 in 1998). The results showed that students from non-English speaking backgrounds were more likely than those from English speaking backgrounds to complete high school in Australia (23% compared to 10%). McMillan and Marks (2003) analysed data from the 1995 Year 9 LSAY cohort and followed their experiences until late 2000. The results of almost 8,000 students showed that, by the mid to late 1990s the odds of becoming an early

school leaver for students from an English speaking background were 2.2 times those of students from non-English speaking backgrounds. Similarly, the odds of students from English speaking backgrounds leaving school before Year 12 were 2.5 times of those of students from non-English speaking backgrounds. This influence remained significant after controlling for sociodemographic factors as well as literacy and numeracy skills. The Australia Study (Marjoribanks, 2002a) involved analysis of data from the LSAY survey of over 13,000 students who were in Year 9 in 1995 and who were followed-up in 1996 and 1997. The results showed that students from Asian, Middle Eastern, and Southern European backgrounds were more likely to stay at school than were Anglo-Australian students. The Adelaide Study (Marjoribanks, 2002a) was a longitudinal analysis of family and school influences on students' attainment. The initial data were collected from 1,300 11-year-old students from Adelaide in South Australia who were followed-up until they were 21 years of age. The results revealed that students from Greek and Southern Italian backgrounds were more likely to stay at school than Anglo-Australian students and students from English immigrant families. Marks et al. (2000) analysed data from the 1995 Year 9 LSAY cohort and data from the four YIT cohorts. The results demonstrated that participation in Year 12 was higher for students whose fathers' country of birth was Asia (91%), the Middle East (85%), or Europe (79%) compared to those whose father's country of birth was Australia (74%). Similarly, participation in higher education was higher for students whose father's country of birth was Asia (60%), the Middle East (37%), or Europe (33%) compared to those whose fathers' country of birth was Australia (28%). More specifically, participation in Year 12 was 82% for Greek, 81% for Italian, 80% for Lebanese, and 93% for Vietnamese students

compared to 74% for Australian students. Participation in higher education was 39% for Greek, 33% for Italian, 33% for Lebanese, and 57% for Vietnamese students compared to 28% for Australian students.

Socioeconomic Background Differences in Participation

With regard to socioeconomic background and educational outcomes, Rumberger and Lamb (1998) examined the experiences of high school dropouts from the United States of America and Australia. The United States of America data were based on the National Education Longitudinal Study of 1998 that was comprised of over 13,000 Grade 8 students surveyed in 1988, 1990, 1992, and 1994. The Australian data were based on the 1975 YIT cohort. The results illustrated that high school drop out rates were highest for students from lower socioeconomic backgrounds, and lowest for students from higher socioeconomic backgrounds. McMillan and Marks (2003) reported, *"during the mid to late 1990s young people from highly educated families remained less likely to leave school early and more likely to enter higher education, than young people from less educated family backgrounds. Of those who were in Year 9 in 1995 and whose parents had very high levels of education (greater than one standard deviation above the mean years of education), only 4 per cent subsequently became early school leavers, 7 per cent became later school leavers, and 30 per cent completed school but did not enter higher education, while nearly 60 per cent completed Year 12 and then entered higher education. In contrast, over twice the proportion of young people whose parents had very low levels of education (greater than one standard deviation below the mean) went on to become early or later school leavers (11 per cent and 16 per cent respectively), and 45 per cent*

completed school but did not enter higher education. Only 27 per cent of this group (from the least educated family backgrounds) completed school and entered higher education...the odds of students from very highly educated backgrounds progressing to the next educational stage were roughly three times the odds of those from low educational backgrounds progressing to the next educational stage" (p. 8). Marks and McMillan (2001) and later Fullarton et al. (2003) found that 26% of students whose parents were unskilled manual workers left school before the completion of Year 12, compared with 15% of students whose parents were professional or managerial workers. Marjoribanks (2002a) analysed data from the Australia Study and found that students from lower social status families were more likely to drop out of school in Year 11 or earlier than were students from middle social status families. Marks et al. (2000) found that 61% of students whose parents had a professional occupation participated in Year 12, compared to 25% of students whose parents had a manual occupation. Fullarton et al. (2003) recently reported that, although there is evidence which shows a reduction in the effects of social inequality in Year 12 participation in Australia, that the effects of socioeconomic background still exist (McMillan & Marks, 2003). Birrell and Dobson (1996), in an analysis of over 3,000 Australian students who began their undergraduate education in 1996, found that students with fathers in professional or managerial occupations made up 55% of higher education enrolments, compared to 10% of students with fathers in lower skilled or unskilled blue collar occupations. Long et al. (1999) found that students of white collar working fathers were twice as likely to go to University compared to students of blue-collar working fathers. McMillan and Marks (2003) reported that 60% of students with parents in unskilled manual occupations did not enter higher education compared with

41% of students with parents in professional or managerial occupations.

Gender Differences in Participation

McMillan and Marks (2003) reported, in reference to gender differences and educational outcomes, that up to the mid 1970s males were more likely than females to complete high school. However, in the 1970s this pattern reversed and males became more likely than females to drop-out of high school. Marks and Fleming (1999) found that 10% of males dropped out of high school compared to 7% of females. Marks et al. (2001) found that females achieved higher Equivalent National Tertiary Entrance Rank (ENTER) scores compared to males. In fact, Collins, Kenway, and McLeod (2000) reported that females outperformed males in the majority of subjects in Victoria. Marks et al. (2000) found that females were more likely to participate in Year 12 than males, and the Australian Bureau of Statistics (1998a) showed that the secondary school completion rate has been higher for females than males since 1976. In 1986, the Year 12 retention rate was higher for females (52%) than for males (46%), and, by 1996, the difference had widened to 77% for females and 66% for males (Australian Bureau of Statistics, 1998a). The higher retention rate among females has been a consistent pattern over the last two decades in Australia, and this trend continues to grow (Fullarton et al., 2003; Hugo, 2001). More recently, Fullarton et al. (2003) reported that 26% of males did not complete high school compared to 16% of females. Overall, more females than males participate in higher education, and this trend has been steadily increasing. For example, in 1993, 9% of females and 11% of males aged 15-69 years had a degree, compared to 5% of females and 9% of males in 1984 (Australian Bureau of Statistics,

1994b). University participation rates have steadily increased for both males and females since 1988 (11.7% each for males and females) to 1996 (17.3% and 20.9% respectively), although the rates for females have increased more than those for males and have been higher than those for males since 1989 (Australian Bureau of Statistics, 1998a).

Achievement-Related Variables

Achievement Motivation

Motivation has been increasingly identified as a crucial factor in explaining academic achievement (Bond & Saunders, 1999). McClelland and his associates (McClelland, 1961; McClelland, Atkinson, Clark, & Lowell, 1953; McClelland, Baldwin, Bronfenbrenner, & Stodtbeck, 1958) conceptualised achievement motivation as a relatively stable and learned personality disposition that compels individuals to fulfil their own internalised standards of excellence, and strive for success. They argued that people with a high “need-for-achievement” are characterised by a psychological need to excel, a desire to enter the competitive race for social status, and a willingness to adopt the high value placed on achievement and success in society. They are presumed to seek challenging tasks, compete to do things better than others, and derive satisfaction from personal mastery. McClelland and his colleagues argued that these personality characteristics are acquired early in life through child-rearing processes that emphasise independence, competitiveness, and mastery.

McClelland et al. (1953) posited two types of achievement motives that describe affective responses and achievement behaviour. They argued that the anticipation of positive affect is related to what they termed the “motive for success”, which motivates individuals to engage in situations. Conversely, they argued that the anticipation of negative affect is related to what they termed the “motive to avoid failure”, which discourages individuals from engaging in situations. The motive to approach success describes the anticipation of pleasure and pride in achieving a desired outcome or goal and tends to facilitate learning. The motive to avoid failure, on the other hand, describes the anticipation of unpleasantness and fear associated with not achieving a desired outcome or goal and tends to hinder the acquisition of knowledge (Diseth & Martinsen, 2003).

Achievement Motivation and Educational Achievement

Researchers have indicated that achievement motivation is related to various performance outcomes, namely academic performance (i.e., grades), educational attainment, and occupational attainment (Elliott, Hufton, Illushin, & Lauchlan, 2001) and is considered to be one of the most important psychological concepts in the educational domain (Lavery, 1999). Deci and Ryan (2002b) argued, “*The more strongly a person values an outcome and believes he or she is capable of achieving it, the stronger will be that person's motivation*” (p. 63). Elliot and Covington (2001) argued, “*intervention programs and procedures (that seek to enhance students' academic achievement) that fail to take motivational considerations into account are destined for failure*” (p. 73).

Rokeach (1979) indicated that values serve as standards or criteria that guide not only action, but also judgment, choice, attitude, evaluation, argument, exhortation, rationalization, and even attribution of causality. Feather (1995) defined values as abstract structures that involve the beliefs that people hold about desirable ways of behaving or about desirable end states. He argued that values have their sources in basic human needs and in societal demands, and can be considered as generalised beliefs about what is or is not desirable, and as motives. He also argued that the strength of a person's values may affect how much effort they put into an activity, how long they persist at an activity, the choices that they make, the way that they construe situations, and their affective responses to success and failure (Feather, 1990). Atkinson (1957, 1964, 1966) argued that achievement motivation is jointly determined by students' expectations for success and the value they attach to achievement. He termed this relationship the “expectancy-value model”, which is used to explain students' motivation to achieve at school. Wigfield and Eccles (1992) have indicated that most of the research in the area of motivation has focused on “expectancy” and called for more research on the “value” component of the equation. Brophy (1999) also argued that values have been relatively neglected in both theoretical and empirical work on achievement motivation. Whilst the value dimension has gained increasing attention (Farmer, Vispoel, & Maehr, 1991; Wong, 1991), it remains largely uncharted (Wong, 1998), particularly in relation to group differences in achievement values.

Values are particularly important when applied to the academic arena. Elliot et al. (2001) argued that the key element underpinning motivation is the value of achievement. For example, Rosen (1959) proposed that achievement values affect

students' educational outcomes by influencing their need to excel and their willingness to plan and work hard (i.e., expend effort). Similarly, Bowen and Bowen (1998) noted that students who define their education as meaningful are invested in the learning process and find school a stimulating and rewarding environment. Graham and Taylor (2002) argued that values have motivational significance because they guide thoughts, feelings, and behaviour. Okagaki (2001) also indicated that students who are doing well in school tend to believe that education serves an important function. She argued, "*When education serves a relevant, pragmatic function in an individual's life, it appears that the individual is more likely to be motivated to do well in school. The converse is also true. Believing that working hard in school will not bring economic and social benefits is associated with less motivation for schooling*" (p. 12). Hanson and Ginsburg (1988) found that educational values held by adolescents and their parents were positively related to their achievement outcomes. They also found that educational values had an indirect influence on adolescents' achievement outcomes, through academic behaviours, such as time spent on homework (i.e., effort expenditure). Wong and Weiner (1981) found that, when students did not do well academically, they not only searched for the causes of failure, but they also questioned the value and meaning of their education. The term "existential attribution" was developed to refer to the reason or purpose attached to an action (e.g., what is the point of going to university?). Its primary purpose is to "*search for the personal meaning and subjective significance of an endeavour or a human condition*" (Wong, 1998, p. 275).

Individuals vary not only in "level" of motivation (i.e., how much motivation), but also in the "orientation" of that motivation (i.e., what type of motivation).

Motivation orientation concerns the “*underlying attitudes and goals that give rise to action- that is, it concerns the why of actions*” (Ryan & Deci, 2000, p. 54). Recent research has recognised the importance of motivation orientation and has begun examining students' achievement motivation orientation more vigorously (Deci & Ryan, 2002a, 2002b), given that different motivational styles may be associated with different educational outcomes (Lavery, 1999). This research has produced a substantial body of literature and an extensive variety of conceptual approaches to the study of achievement motivation orientation. These include the approach-avoidance distinction, the intrinsic/ extrinsic conceptualisation, and individual/ social-orientated theory.

Conceptual Approaches

Approach-avoidance motivation

The approach-avoidance distinction (Lewin, 1935; Miller, 1944) has been accepted in the psychological literature as a useful conceptualisation for understanding achievement motivation orientation. This conceptualisation argues that approach and avoidance motivation differ as a function of valence. In approach motivation, behaviour is instigated or directed by a positive or desirable event or possibility. In avoidance motivation, behaviour is instigated or directed by a negative or undesirable event or possibility (Elliott, 1999; Elliot & Covington, 2001). Following from McClelland's notions of achievement motivation, Atkinson (1957, 1964, 1966) used the approach-avoidance distinction in his theory, arguing that individuals have dispositional preferences for acquiring positive and “hoped-for”

experiences or states, called the motive to approach success, or for avoiding negative and “feared-for” experiences or states, called the motive to avoid failure.

Intrinsic-extrinsic motivation

The psychological literature has also accepted the intrinsic-extrinsic motivation distinction as a useful conceptualisation for understanding achievement motivation orientation (Cameron, Banko, & Pierce, 2001; Deci & Ryan, 2000, 2002a, 2002b; Lidenberg, 2001). This conceptualisation argues that intrinsic motivation occurs when there is no apparent reward except within an activity itself (Deci & Ryan, 1985). It is defined as a tendency to engage in activities for their own sake, for the pleasure derived in performing them, or for the satisfaction of curiosity (Covington & Mueller, 2001). The key element is that the rewards reside in the actions themselves, so that the act is its own reinforcement (Csikszentmihalyi, Rathude, & Whalen, 1993). Extrinsic motivation, on the other hand, occurs when an activity is rewarded by incentives not inherent within a task (Deci & Ryan, 1985). It is defined as the performance of an action that is performed not out of any intrinsic satisfaction from the action itself, but for the sake of extrinsic rewards that are unrelated to the act of learning, such as praise or grades (Covington & Mueller, 2001).

Individual-orientated and social-orientated motivation

Recent research has differentiated between individual-orientated achievement motivation and social-orientated achievement motivation (Lew, Allen, Papouchis, & Ritzler, 1998; Liping, 2000). The individual-orientated achievement motivation refers

to individuals who are motivated to achieve for self-satisfaction. It takes into consideration the extent to which achievement goals, achievement behaviours, outcome evaluations, and consequences are regulated by the individual. Hence, it involves a psychological tendency to evaluate criteria internally. The social-orientated achievement motivation, on the other hand, refers to individuals who are motivated to achieve to fulfil others', usually family, expectations. It takes into consideration the extent to which achievement goals, achievement behaviours, outcome evaluations, and consequences are regulated by significant others. Hence, it involves a psychological tendency to evaluate criteria externally (Yang & Yu, 1988; Yu & Yang, 1989, 1991).

Summary

The individual/social orientated theory was developed in response to concerns that students outside the mainstream often suffer from debilitating negative motivation that interferes with their academic performance and school progress (Willig, Harnisch, Hill, & Maehr, 1983). These theoretical and practical concerns have generated a host of studies endeavouring to uncover the motivational needs of various groups of students (Maehr & Nicholls, 1980). However, very few studies have examined achievement motivation orientation in an Australian context.

Concept of Academic Ability

Concept of ability has been defined as “*a person's self-perceptions formed through experience with interpretations of one's environment*” (Marsh, Perry,

Horsley, & Roche, 1995, p. 71). These self-perceptions are especially influenced by evaluations by significant others, reinforcements, and attributions for one's behaviour and accomplishments (Marsh et al., 1995).

Concept of Academic Ability and Educational Achievement

A large body of research has shown that students' concepts of academic ability are related to various achievement measures, including academic performance (e.g., Grolnick, Ryan, & Deci, 1991; House, 1995, 1997a, 1997b; Marsh & Yeung, 1997a, 1997b), educational aspirations (e.g., Hanson, 1994), occupational aspirations (e.g., Chiu, 1990), and school withdrawal (e.g., House, 1992a, 1992b, 1993). Marjoribanks (2002a) argued, "*There is much evidence to show that self-concept is one of the most significant affective characteristics associated with academic achievement*" (p. 61). Maehr (2001) argued that students' perceptions of ability may undermine or encourage their academic achievement. Recently, Leondari and Gialamas (2002) also argued that concept of ability is a powerful motivational construct that influences academic achievement. Bandura (1993) argued that a person with the same knowledge and skills may perform poorly, adequately, or extraordinarily depending on the variations of their self-beliefs. He argued that these beliefs help determine what individuals do with the knowledge and skills they have, that is, their behaviour. Hence, they influence choice, effort expenditure, persistence, perseverance, thought patterns, and emotional reactions (Alfassi, 2003; Pajares, 2003). In an extensive meta-analysis, Hansford and Hattie (1982) found that the average correlation between concept of ability and academic achievement was .42. Marks et al. (2000) found that the odds of Australian students participating in Year 12 was 3.2 times higher for

students who reported a higher concept of ability compared to students who reported a lower concept of ability. In a large longitudinal study, Brookover and his colleagues (Brookover, Erickson, & Joiner, 1967; Brookover, Thomas, & Paterson, 1964; Brookover, LePere, Hamacheck, Thomas, & Erickson, 1965) found that change or stability in students' concept of ability was positively associated with change or stability in their Grade Point Average. Other researchers have shown that students' concepts of ability facilitate interest, effort expenditure, persistence, and task or goal commitment (Dai, 2001; Deci & Ryan, 1994; Harter, 1992). Covington and Beery (1976) suggested that because society tends to regard ability very highly, ability is often equated with self-worth. Consequently, individuals work very hard to maintain perceptions of themselves as being of high ability. They argued that, because ability is often believed to be a stable and immutable trait, perceptions of ability can be controlled by varying effort expenditure. Covington (1984) argued that one strategy for maintaining the appearance of being 'able' is to simply expend no effort. In this case, failure can then be attributed to lack of effort rather than lack of ability. Hence, it has been argued that the most humiliating achievement situation is to fail under circumstances of high effort expenditure with no way of attributing that failure to low effort expenditure or to external circumstances (Anderman & Maehr, 1994; Covington, 1992). In fact, it has been suggested that some students choose failure over effort because trying too hard is simply too much of a risk (Dweck, 2002a, 2002b, 2002c). Covington (1984) went as far as to say that students' concepts of ability exert the strongest influences on their motivation to achieve. Others have argued that concept of ability is directly associated with students' achievement motivation (Powell, 1989). Recently, Dweck (2002a, 2002b, 2002c) argued that

students' beliefs about their academic ability are important because, when they change, their achievement motivation also changes.

Patterns Between Concept of Academic Ability and Educational Achievement

Considerable research supports the impact of concept of ability on achievement (Bong, 1998; Kurtz-Costes & Schneider, 1994; Marsh & Yeung, 1997a, 1997b; Skaalvik & Valas, 1999) despite some arguing that the relationship between concept of ability and academic achievement is bidirectional (Filozof, Albertin, Jones, Steme, Myers, & McDermott, 1998). Skaalvik and Hagtvvet (1990) proposed that four possible patterns of causation between academic achievement and concept of ability may exist. They maintained that, although few empirical studies have examined these causal relations, each of these patterns can be argued theoretically.

Academic achievement causes concept of ability

On the basis of social comparison theory (Festinger, 1954), they argued that academic achievement may influence concept of ability through students' evaluations of others. According to this hypothesis, students' relative performance within their social comparison group (usually their classmates) is of primary importance (Rogers, Smith, & Coleman, 1978).

Concept of ability causes academic achievement

On the basis of self-consistency theory (Jones, 1973; Lecky, 1945), they argued that students with low concept of ability tend to avoid situations that may alter their

self-concept. Therefore, students make less effort to do well in school.

Academic achievement and concept of ability influence each other in a reciprocal manner

On the basis of Marsh's (1984a, 1984b) theory, they argued that academic achievement and concept of ability may act as a balancing beam, called the “dynamic equilibrium model”. According to this hypothesis, academic achievement, self-concept, and self-attributions are interwoven in a network of reciprocal relations, such that a change in any one would produce change in the other variables in order to re-establish the equilibrium.

A third variable causes both academic achievement and concept of ability

According to this hypothesis, they argued that both academic achievement and concept of ability may be influenced by a third unidentified variable, which may be academic or non-academic. Marsh and Yeung (1998) concluded that, although the direction of the relationship between concept of ability and academic achievement is not always clear, “*We have demonstrated good support for models in which there are significant paths leading from academic self-concept to subsequent academic outcomes- particularly school grades*” (p. 733).

Summary

Students' concepts of ability relate consistently to their academic outcomes (e.g., Berry & West, 1993; Flammer, 1990; Graham, 1994; Schmitz & Skinner, 1993;

Steinberg & Kolligian, 1990). However, growing evidence suggests that these relationships vary considerably across different sociocultural settings (Fyans, Salili, Maehr, & Desai, 1983; Little, Oettingen, Stetsenko, & Baltes, 1995). It has been suggested that future studies should focus on diverse student populations (i.e., from different social contexts) and consider the impact of important confounding variables, such as family influence, when considering students' concepts of ability (House, 2000; Marjoribanks & Mboya, 1998, 2001).

Educational and Occupational Aspirations

Aspirations refer to the level of education and occupation to which a person aspires (Farmer, 1985). Student aspirations are part of a set of social-psychological processes that play a crucial part in helping to determine eventual educational and occupational attainment (Qian & Blair, 1999). That is, the extent to which an individual believes that he or she should attain a higher level of education will directly affect the drive, motivation, and effort that they put toward achieving that goal (Blau & Duncan, 1967; Sewell & Hauser, 1975; Sewell & Shah, 1968). With regard to occupational aspirations, a number of theories have been developed to explain the process of career development. Overall, however, there are three dominant perspectives in the psychological literature, which include Ginzberg's theory, Havinghurst's theory, and Gottfredson's theory.

Theoretical Approaches

Ginzberg's theory

Early theories of career development tended to largely ignore childhood and adolescence. The importance of early developmental processes has increasingly been acknowledged in the career development literature (Wahl & Blackhurst, 2000). One of the first theories of occupational choice to include childhood was Ginzberg's (1952) theory, which included two relevant phases, (1) fantasy choice (prior to age 11) and (2) tentative choice (ages 11-14). According to Ginzberg, the most important career development processes begin in the tentative choice phase, during which children's career aspirations are based almost solely on interest, with little attention given to factors such as ability or other realistic constraints. Research has tended to support the idea that interests play the major role in the selection and rejection of career aspirations throughout childhood (Trice, Hughes, Odem, Woods, & McClellan, 1995).

Havighurst's theory

Like Ginzberg, Havighurst (1964) theorized that two developmental tasks are related to career development in childhood and adolescence. They include identifying with a worker (ages 5-10) and developing the habits of industry (ages 10-15). There appears to be no direct tests of these ideas in the literature, although recent research has shown that children are most likely to identify with the adult workers in their lives (Wahl & Blackhurst, 2000). Trice and Knapp (1992) showed that children's occupational aspirations are strongly related to their parents' occupations.

Gottfredson's theory

One of the more recent career development theories to incorporate childhood and adolescence is Gottfredson's (1981) theory. Gottfredson postulated that the main role of childhood in the career decision process is the elimination of occupations based on age-specific themes. They include size and power (ages 3-5), gender roles (ages 6-8), social valuation (ages 9-12), and unique personal characteristics (ages 14 and older). According to Gottfredson, occupational references develop in a four-stage process in which children increasingly restrict their occupational preferences and choices as they acquire a better understanding of themselves and the world of work. Following on from this notion, Vondracek, Lerner, and Schulenberg (1986) developed a developmental-contextual model of career growth based on life-span developmental theories and contextualist perspectives. This model conceptualises development as *“the dynamic interaction between a changing (developing) individual and in a changing context”* (p. 5). This notion of “dynamic interaction” implies that individuals influence the contexts that influence them, and that no one level of analysis in isolation can be considered as the “prime mover” of change (Vondracek et al., 1986).

Educational and Occupational Aspirations and Educational Achievement

It has been suggested that educational aspirations are among the most significant determinants of eventual educational attainment (e.g., Gottfredson, 1981; Marjoribanks, 1984; Portes & Wilson, 1976; Spencer & Featherman, 1978; Thomas,

1980). Researchers have found that low educational aspirations are an indicator of early disengagement from school (e.g., Astone & McLanahan, 1991), and high educational aspirations are a good predictor of academic achievement (e.g., Sewell & Shah, 1968; Sewell & Hauser, 1975) and university attendance (e.g., Marjoribanks, 1998). Marks et al. (2000) found that the odds of participating in Year 12 in Australia were seven times higher for students who planned to complete Year 12 compared to those who did not. They also found that the influence of students' aspirations on Year 12 participation was stronger than that of their actual school performance.

A Psycho-Social Model of Aspirations

It has been argued that the increasing diversity of the high school student population requires an understanding of the role of cultural and socioeconomic influences on career development (Mau, 1995; Trice et al., 1995). Grottfredson (1981) noted that in addition to the influence of family variables on aspirations, the potential influence of demographic factors cannot be overlooked. Farmer (1985) conceptualised three broad classes of variables contributing to aspirations from a social learning theory basis (Bandura, 1978a, 1978b; Rotter, 1966, 1975). These were (a) background variables (e.g., gender, ethnicity, social class), (b) environmental variables (e.g., parent support), and (c) personal variables (e.g., attributions, values). This framework posits that psychological functioning involves a continuous and reciprocal interaction between behavioural, cognitive, and environmental influences.

Summary

Wilson and Wilson (1992) argued that the significance of identifying and understanding factors that influence aspirations, especially at the adolescent stage of development, cannot be overstated. Research has shown that adolescence is the stage at which status attainment becomes relevant and decisions regarding educational and occupational plans are made (Kouzma & Kennedy, 2002, 2004; Sewell, Haller, & Portes, 1969). Bandura, Barbaranelli, Caprara, and Pastorelli (2001) argued that the choices made during this “formative period” of development shape the course of adolescents’ lives. Wahl and Blackhurst (2000) argued that compared to the vast amount of research and theory related to adult career development, adolescent career development remains relatively unexamined. Arbona (1995) indicated that, while current theories and models of occupational development and choice recognise the importance of demographic and environmental variables, existing research and theory has not “illuminated the character” of these influences. Recently, Trusty, Ng, and Plata (2000) argued that few studies have simultaneously examined the effects of cultural background, socioeconomic background, and gender on occupational aspirations.

Parental Cognitions

The psychological literature indicates that interpersonal influences (parents and peers) are crucial intervening links in models of achievement motivation and educational attainment.

Recent research has put considerable effort into studying the role of parental beliefs in influencing their children, an area that had previously been largely

unexplored (Rosenthal & Gold, 1989). This work is driven by the assumption that children's developmental outcomes are determined largely by their parents' actions and that parental behaviours are influenced by their beliefs (Goodnow & Collins, 1990; Miller, 1988; Murphey, 1992). Researchers agree that knowledge of parents' beliefs may help account for and provide explanations for developmental differences across different groups, such as cultural or social class groups (Goodnow, 1984; Miller, 1988). Three parental beliefs are of particular interest. They include (a) parents' achievement or educational values, (b) parents' evaluation of their child's ability, and (c) parents' educational and occupational aspirations or expectations for their child. Fan and Chen (2001) indicated that the role of parents has been defined and measured by researchers in a variety of ways, mainly by behaviours and beliefs. However, they argued that parents' aspirations/ expectations for their children's educational achievement has the strongest relationship with their children's academic achievement.

Spenner and Featherman (1978) argued, "*the encouragement of one's parents and the plans of one's peers appear to shape motivations and ambitions more directly and with greater impact than any other source in adolescence...their effects are stronger than the direct influence of one's scholastic aptitude or previous academic achievement, and much stronger than any direct influence from one's social origins per se*" (p. 392). It is important to indicate that researchers have found parental influences on adolescents' achievement motivation and educational aspirations to be much stronger than peer influences and that this influence does not decline over time (Davies & Kandel, 1981; Grolnick & Slowiaczek, 1994). Connell, Ashenden, Kessler, and Dowsett (1982) argued that there is clear evidence that families are "very

powerful institutions”. They argued that their influence over their children impacts in every part of their lives, including schooling. Overall, a number of theories seek to explain the role of interpersonal influences in adolescents' educational achievement, most of which are centred around the theme of “multiple contexts”.

Multiple Context Theories

Duncan and Sewell and their associates (Duncan, Featherman, & Duncan, 1972; Sewell & Hauser, 1975) developed a social-psychological model that suggests that the role of interpersonal factors in adolescence is so strong that it mediates the effects of socioeconomic background and ability on levels of aspirations and on subsequent educational and occupational attainment. Bronfenbrenner's (1979) ecological perspective also argued that students' expectations and values develop within multiple contexts of their lives from macro-system contexts to more proximal micro-system contexts, such as the interpersonal interactions between students and important individuals in their lives. Research has generally shown that proximal processes are the strongest predictors of students' behaviour (e.g., Felner, Brand, BuBois, Adan, Mulhall, & Evans, 1995; Murdock & Miller, 2003).

Parental Cognitions and Students' Educational Achievement

It is well accepted that parents' expectations have a powerful effect on children's achievement motivation and academic performance (Strage, 2000). Studies have shown that parents' expectations for their children's education are often reliable indicators of motivation to learn, academic success, and behaviour (Garibaldi, 1997;

Halle, Kurtz-Costes, & Mahoney, 1997). Boocock (1972) noted, “*high achieving children tend to come from families which have high expectations for them, and who consequently are likely to 'set standards' and to make greater demands at an earlier age*” (p. 60). Rosen (1956, 1959) showed that strong achievement motivation tends to develop when parents set high goals for their child to attain, indicate a high evaluation of their child's competence, and impose standards of excellence. Vollmer (1986) suggested that there is a strong correlation between parental expectations and children's school performance, arguing, “*many empirical studies have found a positive linear relationship between expectancy and subsequent academic achievement*” (p. 15). Henderson (1988) found that this relationship held true across all social, economic, and ethnic backgrounds. More recently, Schoon and Parsons (2002) argued that high parental aspirations have a strong influence on children's motivation at school and their own occupational aspirations.

Research has shown that adolescents' concepts of ability are affected by how they perceive their parents' appraisals of their abilities (Fehrmann, Keith, & Reimers, 1987; Keith, Reimers, Fehrmann, Pottebaum, & Aubey, 1986). Wagner and Phillips (1992) argued that children's perceptions of their own academic abilities are influenced by parental behaviours, which tend to reflect parents' beliefs about their children's competencies. Brookover and his colleagues (Brookover et al., 1967; Brookover et al., 1964; Brookover et al., 1965) found a strong relationship between students' perceptions of their parents' evaluation of their ability and their own concept of ability ($r = .75$) and Grade Point Average ($r = .55$). Parsons, Kaczala, and Meece (1982) found that parents' beliefs about their children's competencies had a stronger influence on children's own beliefs than did either their parents' role modelling or

children's grades in school.

The importance of parental values in students' achievement has also been postulated by a number of researchers (e.g., Paulson, 1994; Steinberg, Lamborn, Dornbusch, & Darling, 1992). Marchant, Paulson, and Rothlisberg (2001) found that students' perceptions of their parents' educational values predicted their school achievement, motivation, and academic competence. Some researchers have argued that educational values reflect cultural values that influence parents' attitudes toward goals for their children (Blair, Blair, & Madamba, 1999; Luster & Okagaki, 1993a, 1993b). Kao and Tienda (1998) argued that, "*Parental educational aspirations presumably transmit valuation of education*" (p. 354). More recently, Jodl, Michael, Malanchuk, Eccles, and Sameroff (2001) found that parents' educational values predicted adolescents' occupational aspirations directly and indirectly. That is, they found that parents who held high educational aspirations for their children were more likely to have children who valued school as important for the future, and who had high educational aspirations/ expectations for themselves. In addition, children's perceptions of their parents' evaluation of their ability was associated with higher levels of academic self-concept. After analysing data from the Australia Study and the Adelaide Study, Marjoribanks (2002a) concluded that young adults are more likely to achieve higher levels of educational attainment when they have high personal aspirations that are associated with strong perceived parental support for education; and that young adults' educational success is more strongly related to parents' support than to perceived school support (p. 158).

Summary

Overall, it has been suggested that parental influences may be the primary force affecting student achievement. It has also been argued that the influence of parents is multidimensional and is reflected through parents' behaviour and attitudes and children's perceptions (Grolnick & Slowiaczek, 1994; Hickman, Greenwood, & Miller, 1995; Trusty & Lampe, 1997). Okagaki and Frensch (1998) argued that a greater understanding of children's perceptions of their parents' beliefs and expectations is needed, particularly across different social groups. More recently, Juang and Silbereisen (2002) argued that research combining students' beliefs and family variables (particularly parents' beliefs and expectations) is scarce in the psychological literature and should be addressed in future research.

Measurement of Students' Perceptions

Some researchers investigating the impact of parental expectations on their children's achievement-related cognitions have utilised students' perceptions of their parent's achievement-related cognitions (Adams & Singh, 1998; Ford & Harris, 1992). These results have been consistent with studies where the parents themselves have completed the questionnaire or interview (Bellow, 2000). In a review of students' perceptions of their school learning environments, Fraser (1986) found that research has provided consistent support for the predictive validity of student perceptions in accounting for 'appreciable' amounts of variance in their learning outcomes. He argued that these amounts are often beyond that attributable to student characteristics, such as pre-test performance, general ability, or both.

Hence, the measurement of adolescents' perceptions is important because adolescents' perceptions might be related more strongly to their outcomes (Paulson, 1994). Wigfield and Eccles's (1992) found that children's perceptions of their parents' beliefs are important antecedents of their own beliefs. Similarly, Fyans et al. (1983) argued, "*It is a person's perception and definition of achievement and the achievement situation that counts*" (p. 1012).

Cashmore and Goodnow (1985) also argued that children's perceptions of their parents' position is important. Scheck and Emmerick (1976) argued that perceptions or interpretations are a "*theoretically crucial factor... a variable which intervenes between actual parental behaviour and the child's personality*" (p. 40).

Scarr (1993) suggested, "*Environments provide a range of opportunities for development, the same environments do not have the same effect on all individuals; because individuals construct different experiences from the same environmental opportunities*" (p. 1336). Similarly, Bronfenbrenner and Ceci (1994) proposed the bio-ecological model of human development, which argues that adolescents' outcomes are related to proximal processes that occur in immediate settings (such as families), and to environmental contexts in which the immediate settings are embedded. Grolnick and Slowiaczek (1994) argued that research must consider the child's phenomenological experiences because the child must experience the resources for them to have their influence. "*This viewpoint represents the child as an active processor of information, rather than a passive recipient of inputs*" (p. 248). Rosen (1973) proposed, "*Socialization is a two-way process: the child initiates action as well as receives it. The child's input is often critical*" (p. 206). Moreover, Wentzel (1994) suggested, "*the need to study families as an interdependent network of interpersonal relationships and to focus on the influence of subjective interpretations of those relationships*" (p. 285). Marjoribanks (1995, 1996b) too argued that there is a

need to examine the interpretations and meanings that adolescents have of their family environments and called for researchers to include a dimension that reflects children's perceptions of family variables in their research.

This strategy, of measuring adolescents' perceptions of their parents' beliefs, is justified by reference to the famous dictum: “*If men define situations as real, they are real in their consequences*” (Thomas & Thomas, 1928, p. 572). The interaction between the learner (i.e., students) and their social environment as perceived by the learner is important in research that measures students' perceptions. Plomin (1995) argued that measures reflecting adolescents' active participation in constructing experiences is paramount.

Group Differences and Achievement-Related Variables

The Role of Culture

Over two decades ago, Fyans et al. (1983) declared that few topics are more “intriguing or more elusive” than culture and achievement. They argued that variation in achievement patterns across social and cultural groups is too dramatic to be ignored, “even by the most casual of observers”. A variety of explanations have been posited to explain this variation. Okagaki and Frensch (1998) summarised these factors as (a) motivational differences in students' desire to improve their lives, (b) differences in parental education and socioeconomic background, (c) differences in parental expectations for their children's achievement, (d) differences in the congruence between the cultural practices of the home and the cultural practices of the school, and (e) societal oppression of specific minority groups.

Models of Culture and Educational Achievement

The socioeconomic explanation

Fergusson, Lloyd, and Horwood (1991) proposed two models to explain the association between culture and academic achievement. They argued that the socioeconomic explanation is based on two observations, (1) that families from some cultural groups tend to be disadvantaged in a large number of areas including employment, income, and housing and (2) that social disadvantage and educational under-achievement are related (e.g., Robinson, 1982). Given these two observations, they argued that the correlation between culture and academic achievement is not due to culture *per se*, but to socioeconomic differences. Some research suggests that culture is not a predictor of academic disadvantage when socioeconomic factors are taken into account (e.g., Adams, 1973; Gregory, 1973). However, a number of studies have shown that, while it is possible to explain some of the cultural differences in academic achievement by socioeconomic factors, not all of the variance can be explained by this factor (e.g., Harker, 1978; Reid & Gilmore, 1983; McCreanor, 1988).

The cultural explanation

The cultural explanation is the alternative explanation for cultural differences in academic achievement. Fergusson et al. (1991) argued that this explanation is based on the argument that the cultural practices, values, and beliefs of families from some

cultural backgrounds differs significantly from each other. Hence, it is argued that these differences place some cultural groups at a disadvantage in a school system whose organization and methods of student evaluation reflect the practices and values of the dominant culture (Ennis, 1987; Harker & McConnochie, 1985). Hence, it has been suggested that national differences in academic achievement may reflect culturally transmitted values, beliefs, and behaviours (Hess, Chih-Mei, & McDevitt, 1987).

The cultural differences perspective

Portes (1996) posited the cultural difference perspective, which argues that the authority structure, social organization, learning formats and expectations, communication patterns, and sociolinguistic environment of schools are incompatible with the cultures of different racial and ethnic groups. Meece and Kurtz-Costes (2001) argued that schools have failed to provide role models for ethnic minority students and to create an environment that fosters and values cultural diversity. Ogbu (1992) argued that some minority groups develop an identity in opposition to the majority culture and reject attributes that are valued by that culture in order to cope with their subordination. They suggested that this usually leads to these students devaluing the importance of education and academic success. Wigfield and Eccles (2002) argued that any account of motivational differences across different cultural groups must consider larger contextual issues. Spencer and Markstrom-Adams (1990) argued that many minority students have to deal with several issues not faced by majority students. These include racist prejudicial attitudes, conflict between the values of their group and those of the larger society, and scarcity of high-achieving adults in their

group to serve as role models.

The cultural-structural explanation

McClelland (1990) suggested that variations in adolescents' aspirations are usually examined in relation to two theoretical frameworks. One is a cultural orientation that proposes that aspirations may be considered to be the product of socialisation processes that differ by social origin. The other is a structural framework that proposes that social group differences in aspirations may be explained by a process of social allocation in which individuals from disadvantaged social origins recognise or confront barriers that cause them to lower their goals. McClelland (1990) proposed an alternative framework that integrates the cultural and structural explanations. She argued, “*Socialization processes can orient individuals toward particular goals and, via the transmission of cultural capital, provide the means necessary to achieve them; however, through the calculus of the probable, such influences are constantly mediated by structural constraints in the form of perceptions of the opportunity structure*” (p. 103). Despite such theories, Kao and Tienda (1998) argued, “*there is limited evidence about how race and ethnic origin diversifies educational aspirations*” (p. 350).

Individualism-collectivism

The concepts of individualism and collectivism have been frequently used to explain differences observed between cultural groups (Hofstede, 1980; Triandis, 1988). Individualism-collectivism seeks to explain the relationship of the individual to

the collective (Singelis, 1994). The meaning of individualism is giving priority to personal goals over in-group goals, whereas the meaning of collectivism is subordinating personal goals to those of the in-group (Triandis, 1988). Therefore, success and failure experienced by individuals from collectivist societies and goes further from the dimensions of self into that of the community. Hence, failure is seen not only as a personal responsibility, but also as a collectivist responsibility of the in-group. Thus, a student who fails causes shame or “loss of face” to their family. Individualism has been associated with most northern and western regions of Europe, North America, and Australia. Whereas, cultures in Asia, Africa, South America, and the Pacific Islands have been identified as collectivist (Markus & Kitayama, 1991).

Several researchers have recognised that the traditional model of achievement motivation developed by McClelland et al. (1953) may be most applicable to individualistic cultures (De Vos, 1960; Church & Katigbak, 1992; Maehr & Nicholls, 1980; McInerney, 1995; Spence, 1985). De Vos (1960) argued that successful Japanese students tend to place great importance on affiliation in motivation and that their strive for success is often more motivated by a concern for the reaction of others than by “self-satisfaction” (a term often used to describe the motivation of students from western cultures). De Vos (1973) argued that there is a strong expectation to achieve and emphasis on interpersonal and affiliation motives in individuals from a non-English speaking background and that this is often centred around family and group obligations. This is largely because in collectivist cultures people are socialised to promote the goals of the in-group rather than one's personal goals (Smith & Bond, 1993). Maehr (1974) argued, “*the important principle is that achievement and achievement motivation must be understood in terms of the socio-cultural context in*

which they are found, as well as in terms of generalized descriptions of achieving norms or abstract constructions of psychological processes” (p. 894).

Following from this, Taiwanese researchers (Yang, 1986; Yang & Yu, 1988; Yu & Yang, 1989) proposed a two-dimensional model of achievement motivation that varies along the continuum of individualism and collectivism. Based on McClelland's notion of achievement motivation, the individual-orientated achievement motive is believed to be strongly socialised in individualistic cultures and emphasises the qualities of self-reliance, individualism, and autonomy. In contrast, the social-orientated achievement motive is believed to be strongly socialised in collectivist cultures and emphasises a moral obligation to succeed in order to enhance family and/or community status.

Culture and Achievement Beliefs

Some researchers have argued that a strong emphasis on education and high academic standards, combined with a cultural emphasis on filial obligations, conformity, and respect for authority (Kitano, 1969; Sue & Wagner, 1973) may place students from some backgrounds at risk for problems with school achievement (Pang, 1991) and social and emotional adjustment (Lew et al., 1998; Sue & Zane, 1985). This also applies to children of immigrants, that is, second generation Australians. For example, Fuligni, Tseng, and Lam (1999) argued that, even within a society that emphasises adolescent autonomy and independence, some adolescents from families with collectivist traditions may retain their parents' values. Good and Brophy (1994) argued that, in many immigrant cultures in Australia, the educational values of both parents and their children are different from those of Anglo-Australian families. In

particular, there is a much stronger expectation (particularly among parents and other family members) that children will work hard to succeed at school, and it is argued that these expectations are shaped mostly by cultural norms. Students who have been raised to believe that academic success is very important to family honour and that academic failure disgraces the family are likely to work very hard at school (Fergusson et al., 1991). Consequently, some families foster an environment in which school success is highly valued (Marjoribanks, 1982). The paramount importance that some families attribute to success can place great pressure on students to succeed, particularly when success is associated with values of family loyalty and conformity. In instances where education is less important in family expectations and values, the consequences of failure may be less feared (Good & Brophy, 1994). Zhou (1997) argued that research on the second generation of new immigrants is both “*urgent and necessary*” (p. 92).

Triandis (1995a, 1995b, 1995c) argued that, in most western societies, students tend to believe that effort and ability stand in a “multiplicative relationship” to each other. In contrast, in most collectivist societies, students tend to believe that effort and ability have an “additive relationship” to each other. He argued that students from western societies are more likely to believe that, without a given level of ability, no amount of effort will be sufficient. Students from collectivist societies, however, are more likely to believe that effort expenditure will ultimately bring rewards. Carpenter (2000) found that in collectivist cultures only causal attributions for failure were more external. This may be because the consequences of failure are greater in these cultures. Marks (1998) analysed data from the 1995 Year 9 LSAY cohort and found that students from non-English speaking backgrounds showed higher levels of

satisfaction with school on all four dimensions of general satisfaction with school, attitudes to teachers, views of opportunities their school provides, and sense of achievement. In addition, he found that general school satisfaction and sense of achievement were positively related to self-reported achievement in Year 10.

Rosen's Theory

Rosen (1956, 1959, 1961, 1962, 1973) proposed that achievement orientated families are characterised by achievement training, independence training, achievement-value orientations, and educational-occupational aspirations. He argued that achievement training and independence training act together to generate achievement motivation, which provides children with the psychological impetus to excel and succeed. He defined achievement value orientations as meaningful and “affectively charged modes of organising behaviour” that guide human conduct and establish the criteria which influence educational-occupational aspirations. He posited that cultural group differences in social mobility could be partly explained by differences in family achievement orientation. Based on Rosen's theory, Marjoribanks (1996a) found that Anglo-Australian parents were characterised by significantly stronger achievement and independence training and were more individualistic in their achievement orientation compared to Greek and Southern Italian parents. He also found that Greek parents indicated stronger achievement training and were more dependent and collectivist in their achievement orientation compared to Southern Italian parents. In addition, Greek and Southern Italian parents expressed higher aspirations for their children than Anglo-Australian parents. Overall, the educational and occupational aspirations of Greek adolescents were significantly higher than those

of Anglo-Australian and Southern Italian adolescents. In a more recent study, Marjoribanks (2002b) found that adolescents from Chinese and Vietnamese families reported the highest occupational aspirations, followed by adolescents from Lebanese, Greek, and Italian families.

Summary

While there have been significant advances in identifying the achievement motivational profiles of adolescents from different cultural backgrounds (Strage, 2000), Australian research is largely lacking in the literature. Buchmann and Dalton (2002) argued that researchers may misapply or misinterpret models that are applicable to one country in others. They warned against generalising knowledge of educational processes in the U.S. to other countries without empirical investigation. Maehr (1974) argued for the need to pursue an ethnographic approach to the study of achievement motivation in cross-cultural research. Clifton, Williams, and Clancy (1987) also suggested, “*it would be valuable if future research attempted to disaggregate further the effects of ethnicity upon academic achievement*” (p. 241). Kao and Tienda (1998) argued that limited research has examined the aspiration formation of adolescents from different cultural groups. Researchers have also highlighted the need for research on normative development in diverse cultural groups (Wong & Rowley, 2001) and to consider the development of a database of normative development in minority children (McLoyd, 1998a, 1998b; Spencer, 1995). Anderman and Maehr (1994) have indicated that, to understand variations in achievement motivation, it is necessary to examine students' learning contexts, especially since motivation is culturally embedded within broader socialisation

practices. This notion of examining the influence of a combination of contextual factors on students' achievement-related cognitions has been documented by a number of recent researchers (Anderman & Anderman, 2000; Marchant et al., 2001; Steinberg, 2000). Steinberg, Sanford, and Brown (1992) proposed, “*Any explanation of the phenomenon of ethnic differences in academic achievement must take into account multiple, interactive processes of influences that operate across multiple interrelated contexts*” (p. 729). Entwisle and Astone (1994) suggested that cultural and social group differences offer multiple opportunities for comparative research that can enrich our understanding of key issues in human development. In addition, Clifton, Williams, and Clancy (1991) noted that relatively few studies have focused on the social-psychological variables that mediate ethnic differences in students' attainments. Marjoribanks (1999) argued the need to examine the educational outcomes of students from differing cultural backgrounds without combining students from various overseas regions.

The Role of Socioeconomic Background

Socioeconomic Background and Educational Achievement

A generally consistent finding in the literature is that students' academic achievement is strongly related to the socioeconomic background of their parents (Baker & Stevenson, 1986; Haveman & Wolfe, 1994). For example, Sewell and Hauser (1976) found that, in the United States of America, children from high socioeconomic background families were 2.5 times more likely than children from low socioeconomic background families to continue education beyond high school, 4

times more likely to enter college, 6 times more likely to complete college, and 9 times more likely to obtain graduate or professional training. Halle et al. (1997) showed that children from higher socioeconomic backgrounds scored higher on standardised achievement tests, were more likely to finish high school, attend college, and participate in postgraduate studies compared with children from lower socioeconomic backgrounds. In a review of the research in the area, Marjoribanks (1999) argued that Australian research provides support for the claim that family background is the single most important contributor to academic success. Also in an Australian context, Rumberger (1995) argued, *“Research has consistently found that socio-economic background, most commonly measured by parental education and income, is a powerful predictor of school achievement and dropout behaviour”* (p. 587). In a large-scale study of the relationship between family social conditions and students' school outcomes, Coleman, Campbell, Hobson, McPartland, Mood, Weinfeld, and York (1966) concluded, *“Differences in school facilities and curriculum which are the major variables by which attempts are made to improve schools, are so little related to differences in achievement levels of students that, with few exceptions, their effects fail to appear in a survey of this magnitude”* (p. 316). This study found that family influences were much more important than school characteristics in explaining differences in students' academic achievement. Goldthorpe (1996) argued that, while the average level of educational attainment has increased substantially in economically advanced countries over the past 40 years, social class differentials in educational attainment have not. He argued, *“If one envisages educational careers as comprising a series of transitions, or branching points, then, as these successively arise, children of less advantaged class origins*

have remained, to much the same extent, more likely than children of more advantaged origins to leave the educational system than to continue in it; or, if they do continue, to follow courses that, through the kinds of qualifications to which they lead, reduce their chances of continuing further” (p. 487). Hence, the background of families has not lost its importance in students’ educational and occupational attainment (Sieben, Huinink, & de Graaf, 2001).

Marks et al. (2001) found that the three major dimensions of socioeconomic background (i.e., parental occupational status, parental education, and wealth) were all positively correlated with Australian students’ tertiary entrance performance. Of these dimensions, parental occupational status had the strongest impact. They also found that students whose parents were from professional and managerial occupational backgrounds exhibited higher Equivalent National Tertiary Entrance Rank (ENTER) scores. The correlation between socioeconomic background and tertiary entrance performance was moderate ($r = .3$), and decreased substantially (albeit still significant) after controlling for Year 9 achievement in literacy and numeracy. They concluded that the socioeconomic background of parents is an important factor related to the tertiary entrance performance of Australian students (Marks et al., 2001).

There is continuing debate about the relative strength of different aspects of socioeconomic background on educational outcomes. Overall, there appears to be two arguments posited to explain why young people from low socioeconomic backgrounds have poorer educational outcomes. The first focuses on financial resources, such as wealth and income. The second approach emphasises cultural factors, such as the way in which parents convey positive values to their children

about education and role modelling (Marks et al., 2000). Hence, socioeconomic background may have direct and indirect effects on students' achievement. For example, research has shown that parents from higher socioeconomic backgrounds (defined by higher levels of education) tend to be more active participants in their children's education and to have higher educational expectations for their children (National Centre for Educational Statistics, 1998). Bacete and Ramirez (2001), in a study of Grade 7 Spanish students, also showed that parents from higher socioeconomic backgrounds (defined by educational and occupational status) tended to be more involved in their children's education. Williams, Long, Carpenter, and Hayden (1993) found that families from higher socioeconomic backgrounds tended to promote higher levels of achievement and provide higher levels of psychological support to their children to continue education. Even after controlling for family background, achievement, and psychological support, an advantage persisted for children whose parents were highly educated.

Socioeconomic Background and Educational and Occupational Aspirations

A number of studies have shown a positive correlation between students' educational and occupational aspirations and the socioeconomic background of their family. For example, Douvan (1975) found that parents from higher socioeconomic backgrounds assert demands for individual success earlier and more regularly during child-rearing than do parents from lower socioeconomic backgrounds. She also found that students from higher socioeconomic backgrounds reported higher levels of motivation to achieve than students from lower socioeconomic backgrounds.

Researchers have attributed these differences to students' achievement values, which

are presumed to be directly related to their family's socioeconomic position (e.g., Maltby, Gage, & Berliner, 1995). That is, it is believed that students' achievement motivation is greatly influenced by their achievement values, which are specifically related to the 'status milieu' in which they are reared (Birenbaum & Kraemer, 1995). Schoon and Parsons (2002) argued that individuals from more 'privileged homes' have more educational opportunities, greater access to financial resources when they are needed (i.e., to pay for higher education), role models, occupational knowledge, and informal/kinship networks (Erikson & Jonsson, 1996; Schulenberg, Vondracek, & Crouter, 1984). It has been argued that social class operates as a distal system that relates to children's development indirectly through the proximal context of the family environment (i.e., the material resources available to the family, educational opportunities offered to their children, and the emotional resources of parents which may affect the quality of the relationship with their children) (Bronfenbrenner, 1979; Vondracek et al., 1986). Flowers, Milner, and Moore (2003) argued that parents from lower socioeconomic backgrounds tend to work longer hours and are more likely to place greater emphasis on providing economically for their family rather than academically (Milner, 2002; Ogbu, 2003). They stressed, however, that parents from lower socioeconomic backgrounds do not necessarily devalue education or the significance of their involvement in their child's education. In contrast, they argued that some parents from lower socioeconomic backgrounds may believe that, in the absence of economic resources, there is an imbalance in the home, and so meeting the family's basic needs becomes their main focus (Milner, 2002).

Mortimer, Finch, Shanahan, and Ryu (1992a, 1992b) found that parental education had the largest effect on their children's educational plans and occupational

aspirations. They also found that parents with postsecondary education tended to pass along its importance to their children. Wilson and Wilson (1992) analysed data from the National Educational Longitudinal Study of 1988, which surveyed over 14,000 Grade 8 students from the United States of America at two-year intervals. Analysis of the second and third follow-up panel of 1992 and 1994 showed that adolescents whose parents' education level was higher were more likely to have high aspirations. Similarly, adolescents whose parents' education level was lower were more likely to have low aspirations. More recently, Trusty (1998) analysed data from the first wave of the 1980 High School and Beyond longitudinal study of almost 3,000 high school seniors in the United States of America and found that socioeconomic background was the strongest predictor of adolescents' educational expectations. DeRidder (1990) pointed out, "*Being born to parents with limited education and income reduces the likelihood of going to college, of achieving a professional occupational goal and essentially predetermines the child's likely vocational choice*" (p. 4). Saha (1985) found that socioeconomic background directly influenced the expected occupations of students from three cultural backgrounds, Australian, British/Irish, and European. Valadez (1998) found that the effects of culture and gender on educational aspirations were mediated by socioeconomic background. Valadez concluded that students from lower socioeconomic backgrounds do not have access to important resources and are not as skilled at capitalising on available resources as students from higher socioeconomic backgrounds. James (2000) noted that people from lower socioeconomic backgrounds tend to be more concerned with job security and less with the inherent interest of further learning, and to be more inclined to want to meet parental and family expectations. It has also been suggested that parents have

different views about what is an acceptable job for their children depending on their social class, and that their children tend to adopt these views (Ginzberg, Ginsberg, Axelrod, & Herma, 1951; Gottfredson, 1981; Rosen, 1956). Keller and Zavalloni (1964) argued that aspirations among middle-class children are considered to be higher than among children from a working class because the former internalise more successfully the ambitions of their parents, given that they have more opportunity to reach their ambition goals.

The relationship between aspirations and socioeconomic background, with intelligence controlled, is significant for both genders and for both educational and occupational aspirations. This suggests that values specific to different status positions are important influences on educational and occupational aspirations. However, it has been suggested that this relationship does not reject the importance of intelligence to educational and occupational aspirations but suggests that socioeconomic background makes an independent contribution to these aspirations (Sewell, Haller, & Straus, 1957).

Bowen (1978) argued, “*an abundance of evidence based on major national studies with huge samples indicates a very strong and positive relationship between the education of parents and the measured intelligence, academic achievement, and extracurricular participation of children in school or college*” (p. 197). He suggested that college educated parents affect their children's attitudes, values, and decisions about school and college. However, several studies have indicated that socioeconomic background accounts for small or inconsistent amounts of variance in measures of achievement (Adams & Singh, 1998; Johnson, 1992; White, 1982). More recently, Schoon and Parsons (2002) argued that the processes linking social background to the

developing individual are not yet fully understood. Roberts (1980) argued that we should not underestimate working class parents' ambitions to see their children succeed. Elder (1999) found that males from “under-privileged families” who showed high vocational commitment or ambition had a slightly greater occupational attainment than their less ambitious peers. Elder argued that the desire to excel is the most important source of achievement among under-privileged males. *“The desire to excel is less restricted than IQ to achievement through education, as one would expect, and exerts a stronger direct influence on occupational attainment than either mental ability or family status”* (Elder, 1999, p. 175).

Models of Socioeconomic Background and Educational Achievement

Contextual/ Individual Effects

Marjoribanks (1977) suggested that social status may have two separate influences on children. (1) A contextual effect that influences children's achievement through its effects on the social-psychological learning environment that families create for their children. (2) An individual effect that is assessed by the remaining direct effect on children's achievement after accounting for intervening family environment variables. Marjoribanks (2002a) developed a mediation-moderation model of family and school capital influences of students' outcomes, which considers the effects of family, cultural, and social contexts. This model is a comprehensive framework used to examine the relationships among family background, more immediate settings, students' individual characteristics, and school outcomes. For example, the Australia Study (Marjoribanks, 2002a) showed that the mediation-

moderation model contributed over 65% of the variance in students' likelihood of staying at school. Marjoribanks (2002a) noted, however, that this model should be expanded to include peer group and neighbourhood influences. He argued, "*[the mediation-moderation model] proposes that female and male students' school outcomes need to be considered as being affected by family background defined by the complementarity, tensions and contradictions found in and between cultural and social contexts. Within such encompassing backgrounds, students' outcomes are affected by the structures and educational capital of families and schools, with those influences being partially mediated by the students' own characteristics. In addition, the model should be interpreted as reflecting the ongoing nature of relationships between family and school capital and outcomes*" (p. 20).

Gould's theory

Gould (1941) theorized that one's concept of the future is an expression of one's status in the present. "*The more unsatisfactory the present is conceived to be the more urgent the desire (need) to depart from it 'in the future', and the greater the psychological distance between now and the situation-to-be*" (p. 468). Therefore, she argued that those from lower socioeconomic backgrounds have a "deep all-pervading" need (which those from higher socioeconomic backgrounds do not have, and those from middle socioeconomic backgrounds have to a lesser degree) to leave the present. However, Gould suggested that, despite their need to escape the present, reality compels those from lower socioeconomic backgrounds to reduce their aspirations because they are not able to accept the risk of becoming less poor.

Social-cognitive-causal model

The social-cognitive-causal model developed by Bandura, Barbaranelli, Caprara, and Pastorelli (1996) has been used extensively to study educational (e.g., Bowen & Bowen, 1998) and career development (e.g., Betz & Voyten, 1997). Bandura et al. (1996) used this model to study academic achievement and found that socioeconomic background positively influenced parents' aspirations for their children, as well as parents' efficacy to influence their children's academic competency. The effects of socioeconomic background on achievement were mainly indirect. Parents' aspirations and efficacy, in turn, influenced their children's academic self-efficacy. Children's efficacy perceptions then influenced their educational aspirations. However, it is important to clarify the differences between various terms used in the literature, such as self-efficacy, self-concept or self-perception of ability, and self-worth or self-esteem. Self-efficacy emphasises beliefs that one is capable of completing academic tasks (Murdock, Anderman, & Hodge, 2000). It involves some judgement that the individual can or cannot do an activity, just as self-perceptions of competence or self-concept beliefs reflect similar beliefs (Linnerbrink & Pintrich, 2003). However, Linnerbrink and Pintrich (2003) argued that self-efficacy and self-concept beliefs are different from self-worth or self-esteem, because self-esteem involves emotional reactions to actual accomplishments. They claimed that self-efficacy is distinct from self-concept beliefs, because the latter reflects more general beliefs about competence and the former reflects more specific beliefs that express the idea that individuals can organise and execute the course of action required to complete a task. They also argued that self-esteem is used in reference to a type of goal and is, therefore, more situational than self-concept and self-perception beliefs.

That is, self-concept emphasises individuals' more generalised sense of competence in a specific domain (i.e., academic) (Murdock et al., 2000).

Hannah and Kahn (1989) found a significant relationship between socioeconomic background and occupational prestige level for males and females. They also found that those from lower socioeconomic backgrounds reported significantly lower self-efficacy expectations than those from higher socioeconomic backgrounds, regardless of their occupational prestige level. It has been argued that parents with high educational attainment and/or high income tend to pass on their educational and resource advantages to their children, and they have higher aspirations for their children, ultimately resulting in higher educational aspirations by the children themselves (Useem, 1992; Wilson & Wilson, 1992).

Summary

Marjoribanks (2002a) argued, "*[the literature] provides support for the general proposition that differences in family background have strong associations with inequalities in students' school success and in young adults' eventual educational and occupational attainment*" (p. 27). In an earlier paper, Marjoribanks (1991) argued, "*what is required now are further studies that examine the dynamics of the interactions of ethnic group membership, social status background, and gender with measures of students' learning environments and other school-related outcomes. Investigations of such social-group differences may lead to a more enriched understanding of the concept of social capital and of social inequalities in students' school outcomes and in their eventual social-status attainment*" (p. 830). Entwisle and Astone (1994) proposed, "*class differences offer multiple opportunities for*

comparative research that can enrich our understanding of key specific issues in human development” (p. 286). Blair et al. (1999) have suggested that, while students' academic success is very likely to be affected by their socioeconomic background, it must also be considered in conjunction with parental cognitions. Cahill (1996) argued, *“Consideration of the relationship between social mobility and educational practice cannot be separated from the milieus in which each individual works out his or her own destiny in regard to academic and vocational attainment. While status indicators give clues to the process, the process is best studied through an intensive examination of the various milieus. Considering key process variables has the additional advantage of providing the basis for remedial and preventative strategies which remove blockages to educational achievement, career choice and social mobility”* (p. 38). Dowson and McInerney (1998) acknowledged that specific hypotheses on the direction of the effects of socioeconomic backgrounds on students' motivation and cognition are difficult to generate.

Measurement of Socioeconomic Background

The measurement of socioeconomic background has been a contentious issue in the research literature. The term is used frequently despite there being no general consensus regarding how to define and measure this construct. Often, measures cited in the literature are those of convenience or availability. In general, socioeconomic background is defined as an indicator of social and economic position. The social aspect refers to an individual's relative position within a social status hierarchy, and the economic aspect refers to an individual's position within an economic hierarchy (Williams, 1987). Hence, it is a measure of an individual's or group's standing in the

community. It usually relates to the educational attainment, occupation, income, and wealth of either an individual or group (Powers, 1981). These types of variables are often summarised into a single figure or socioeconomic index.

Since there is no general agreement on the definition of socioeconomic background, different indexes are constructed for different uses (Mukherjee, 1999). Powers (1981) argued that occupation is the best single indicator of socioeconomic position. However, including additional information, such as education and income, can increase the explained variance in the measure of socioeconomic background. In addition, different variables may assess unique dimensions of socioeconomic background, which together may represent the construct more completely (Nam & Terrie, 1981). The variables traditionally used to measure socioeconomic background include education, occupation, and income. Hauser and Warren (1996) indicated that prestige-validated socioeconomic indexes are of limited value because they give too much weight to occupational earnings. Deonandan, Campbell, Ostbye, Tummon, and Robertson (2000) also noted the lack of comparable definitions of low, middle, and high socioeconomic background. Graetz (1995) argued that there are two main approaches to the measurement of socioeconomic background. The first approach assesses individuals' achievements, such as their educational attainment, occupational and employment status, and income and wealth. The second approach assesses individuals' achievements as well as other attributes that may influence their social position and life chances, such as family structure, geographical location, gender, ethnicity, and language proficiency. Graetz (1995) held that the more restricted definition should be used to measure socioeconomic background, while the more inclusive definition should be used to measure social disadvantage.

The Role of Gender

Studies have shown that females tend to report lower estimates of their abilities, performance, and expectations for success when compared to males in a wide variety of achievement areas, even when they perform as well as and better than males (e.g., Eccles, Adler, & Meece, 1984). These results have been explained by some authors in terms of the effects of early socialisation patterns (Moss & Kagan, 1961).

Gender Socialisation

Farmer (1980) argued that family socialisation practices affect motivation differently in males and females. He found that parents of males tend to encourage certain attitudes and behaviours, such as showing initiative and being independent and competitive, and that these are related to their high motivation to achieve. He also found that, within the same families, females receive different social learning experiences, and are often encouraged to be dependent, conforming and cooperative. Rubovits (1975) also showed that, within the same families, females received different social learning experiences to males. While males were encouraged to be competitive, initiating, achieving, and independent, females were encouraged to be dependent, conforming, cooperative, and unconcerned about grades. It has been argued that, because males and females have different socialisation experiences regarding the relative importance of various achievement activities, gender differences in achievement may result from gender differences in the subjective value attached to various achievement activities (Eccles et al., 1984). Hence, research has shown that parental involvement with children's education is important for positive

academic experience and successful outcomes. However, it has been argued that more research is needed to identify how parents' involvement differs between their daughters and sons (Carter & Wojtkiewicz, 2000).

Some of the literature suggests that traditional socialisation practices result in parents “short-changing” their daughters (e.g., Smith, 1992; Wigfield & Eccles, 1992, 1994). Carter and Wojtkiewicz (2000) found that, despite the general hypothesis that male children are advantaged compared to female children in various ways in the home, female children received more attention from their parents than male children. They argued that these parents may have been more involved with their daughters because of the current emphasis on educational attainment for females. They argued that this emphasis is largely due to current “social conditions”, such as delayed marriage and higher divorce rates, which require females to be capable of supporting themselves rather than relying on a husband. They proposed that such social changes may have altered traditional socialisation practices that have tended to “favour” males. An alternative explanation is that parents currently socialise their daughters in ways that reflect the lessened social stigma surrounding female employment and success. That is, high aspirations and achievement are now considered to be just as beneficial for females as males. On the other hand, it may be that females are more dependent on others compared to males and, therefore, their parents tend to be more involved with them. Carter and Wojtkiewicz (2000) maintained that investigating differences in parental involvement is important because it could help explain gender differences in the educational experiences of adolescents, and contribute to knowledge about conditions that foster gender stratification in work outcomes.

Male and female children may receive unequal educations because of perceived

differences in the benefit of schooling. Post and Pong (1998) argued that the benefits of education are anticipated to accrue not only to children but also to parents, in the form of old-age support. For example, traditionally married daughters in Chinese societies provide physical support for their husbands' parents instead of their own. Because the benefits from a daughter's labour are available only before her marriage, it may therefore appear “rational” from the perspective of parents to invest greater resources in the education of their sons. In addition, where children's labour carries monetary value, daughters would be expected to sacrifice their own educations for the benefit of their brothers (Post & Pong, 1998).

Gender and Achievement Motivation

Several theories have been proposed for explaining gender differences in school performance. Motivational theory provides a framework for explaining the process that influences gender differences in school performance (Birenbaum & Kraemer, 1995). Gama (1986) suggested that there is no basic structural difference in achievement motives between the two genders. More recently, Liping (2000) found that female students scored significantly higher on individual-orientated achievement motivation than on social-orientated achievement motivation compared to male students. Recently, however, Martin (2004) concluded from his study that, although females have higher levels of motivation than males on a number of different dimensions, their fundamental motivation orientations are not significantly different qualitatively. Overall, there appears to be no general consensus in the psychological literature on gender differences in students' achievement motivation orientation (e.g., Dowson & McInerney, 1998).

Gender and Attributions to School Successes and Failures

Success and failure attributions are also important in explaining gender differences. Research has shown that males are more likely to attribute success to ability and failure to bad luck, while females are more likely to attribute success to good luck and failure to lack of ability (Dweck, 1986; Eccles et al., 1984). This research suggests that males and females have different achievement-related cognitions or different cognitive orientations (Wigfield & Eccles, 1992). Bar-Tal (1978) found that females tend to take personal responsibility for their failures but not for their success. However, these trends are not evident in all studies, and in many instances the results are mixed and equivocal (Frieze, Whitley, Hanusa, & McHugh, 1982; Parsons, 1983). Veroff (1977) suggested that males are more concerned about the impact of their achievement when evaluating their success and failure, whereas females emphasise the process of achievement and are more concerned with the effort expended and feelings of competence in the process of achievement.

Research has also shown that females are more likely than males to exhibit the helpless pattern of attributions (Dweck, Davidson, Nelson, & Enna, 1978). Females place less emphasis than males on motivational factors as determinants of failure, and are more likely than males to blame a lack of ability for poor performance (Dweck & Repucci, 1973; Nicholls, 1975). This occurs on tasks on which females are at least as proficient as males. It is not surprising, then, that females are also more prone than males to show decreased persistence or impaired performance following failure, the threat of failure, or increased evaluative pressure (Butterfield, 1965; Crandall & Rabson, 1960; Dweck & Gilliard, 1975; Nicholls, 1975; Veroff, 1969). However,

Wigfield, Battle, Keller, and Eccles (2002) argued that findings pertaining to gender differences in attributions tend to be mixed and that there is no general consensus in the psychological literature. The development of gender differences in response to failure feedback has been explained in terms of males' and females' general socialisation experiences (e.g., Crandall, 1963; Veroff, 1969). It has been theorised that because of greater independence training, males develop internal standards of excellence or autonomous achievement strivings that allow them to become relatively independent of external evaluation. Females, on the other hand, do not have the benefit of this experience and thus tend to remain dependent on feedback from others to judge their ability or the adequacy of their performance (Dweck et al., 1978).

Gender and Perception of Academic Ability

It has been well documented in the literature that males and females have different perceptions of their competence. Overall, females tend to have lower estimates of their abilities, performance, and expectations for future success when compared to males, even when they actually perform as well as and better than males (Crandall, 1969; Meece, Eccles-Parsons, Kaczala, Goff, & Futterman, 1982; Parsons, Ruble, Hodges, & Small, 1976). The link between achievement expectancies and performance has also been well documented in the achievement literature. Generally, females are often found to have lower expectancies than males (Eccles-Parsons, Kaczala, & Meece, 1982). However, not all studies have found gender differences in self-evaluations, although of those that do find a gender difference, it is usually in the direction of females downplaying their achievement and abilities compared to males (Brown, 1998). These studies tend to find that females either perform equally with

males or outperform males. Hence, it is unlikely that their lower self-evaluations simply reflect actual lower competency. One explanation of these findings, based on early interpretations, focuses on self-confidence (Brown, 1998). It has been suggested that females simply lack the self-confidence of males, or are less confident than their abilities and achievements would suggest they should be. However, it has also been suggested that context must also be taken into account. In early research, the social-psychological contexts in which self-evaluations are made was largely neglected (Brown, 1998). Wigfield and Eccles (2002) argued that the extent to which individuals endorse stereotypes regarding which gender is likely to be more talented in each domain predicts the extent to which males and females distort their ability self-concepts and expectations in the gender stereotypic direction. For example, males who believe that males are generally better at math than females are more likely to have more positive competence beliefs in math than females. It is important to indicate, however, that these gender differences are not always found and when found, are generally quite small (Marsh, Craven, & Debus, 1998). Graham and Taylor (2002) claimed that there is some evidence that females are more vulnerable to “motivational deficits” than males. For example, research has shown that gender-role socialisation and stereotypes lead females to question their academic competence more (especially in math), to display more maladaptive reactions to failure (including low ability attributions), to perceive more barriers to success, and experience more conflict between individual achievement strivings and social conformity (e.g., Eccles, Wigfield, & Schiefele, 1998; Ruble & Martin, 1998).

Over 20 years ago, Hogan (1978) demonstrated that the IQ self-estimates of males were significantly higher than those of females. In addition, all participants in

his study reported their fathers' IQs to be significantly higher than their mothers' IQ. Similarly, Bennett (1996) found that males continued to make higher self-estimates of IQ than females and that fathers were still viewed as intellectually superior to mothers. More recently, Furnham and Gasson (1998) found that, compared to males, females underestimated their IQ scores and that nearly all believed their fathers had higher IQs than their mothers. Beloff (1992) concluded, “*young female students see themselves as intellectually inferior compared to young men... Females see equality with their mothers, men with their fathers. Females see themselves as inferior to their fathers and men superior to their mothers. Mothers therefore come out as inferior to fathers*” (p. 310).

Gender and Educational and Occupational Aspirations

While some early studies found that male high school students have higher aspirations than their female counterparts (e.g., Fortner, 1970), other studies have found that females have higher aspirations than males (e.g., Farmer, 1985), and others have found no gender differences in aspirations (e.g., Tittle, 1981). These inconsistent findings may exist because gender differences in achievement are influenced by a variety of personal and situational factors (Farideh, 1996). Early studies conducted by Looft (1971a, 1971b, 1971c) showed that, by 1st and 2nd Grade, females had more restricted occupational aspirations than males. These studies suggested that females identified a narrower range of occupational preferences and had lower expectations of occupational attainment than males. Replications of these studies in the 1980s showed that although females had broadened their occupational preferences, their expectations for occupational attainment remained low, especially for high status and male gender-

typed occupations (Adams & Hicken, 1984; Miller & Stanford, 1987). Other studies in the 1980s showed that males engaged in greater gender-typing of occupations than females, and that females were more likely to aspire to “non-traditional occupations” than males (Franken, 1983; White & Quellette, 1980). Research also showed a disparity between children's ideas about the range of occupations which both genders could work and their own personal aspirations, which tended to be more highly gender-typed (Franken, 1983). Williams et al. (1993) concluded from their study of Australian students that gender differences in school retention rates and higher education participation rates are likely to reflect gender differences in prevailing norms about the role of women. They argued that, if gender differences in access to higher education exist, then they probably lie in access to specific courses, which tend to be more or less male orientated. They also argued that these gender differences might change in favour of females. Collins, Batten, Ainley, and Getty (1996) found that 45% of high school students agreed that there were some subjects that most girls would not enrol in because they believed they were “boy subjects”. In addition, 60% of students agreed that most boys would limit their subject choices to “non-feminine” subjects. They argued that subject choice at school is still dependent on gender, which is constructed in self-limiting ways.

Currently, the results of research remain inconclusive with respect to the role of gender in children's occupational aspirations. Loof (1971a, 1971b, 1971c) argued that this is true even after nearly three decades after the seminal studies in this area, and Wahl and Blackhurst (2000) argued that this is true even after the most recent women's movement over 25 years ago. Trice (1991a, 1991b), for example, found no significant gender differences between 8- to 11-year-old children's range of possible

and preferred career choices. Phillips, Cooper, and Johnson (1995), on the other hand, found distinct gender differences between the career goals of children in Grade 4 through to Grade 8, with females identifying a much narrower range of professional occupations. Kao and Tienda (1998) showed that, by 10th Grade, females continued to have higher educational aspirations than their male counterparts. This is consistent with Eccles's (1987, 1994) notion of gender differences in the cognitive processing of similar experiences. She argued that either parents implicitly give their female children messages different from those they give their male children, or that female children interpret these messages differently than male children.

Summary

Marks et al. (2001) indicated that the academic achievement of males and females is a controversial area, and whether or not one gender is experiencing a disadvantage is of great concern. They argued that, although there is some research in this area, it does not take into account the correlates of gender, such as attitudes and aspirations, which may provide an improved understanding of gender differences in academic achievement. Marks et al. (2000) argued that part of the gender gap in education participation relates to attitudinal differences between males and females. This supports Fennema's (1985) notion that a social-psychological framework is the most appropriate for studying gender-related differences.

The Role of Grade

Relatively few studies have investigated grade-related or age-related changes or patterns in students' achievement-related cognitions. However, numerous developmental studies on students' expectations for success have been conducted (Wigfield & Eccles, 1992).

Developmental Changes in Expectations for Success

Research generally shows that younger students' expectations for success are overly optimistic and that this optimism tends to remain even after repeated failure (Stipek, 1984). It has been suggested that younger students' expectations are not grounded in the reality of their performance, but may reflect what outcome they hope to achieve. Research has shown that, as children proceed through secondary school, their expectations begin to correspond more closely to their previous performance, so that following success their expectations increase, and following failure their expectations decrease (e.g., Parsons & Ruble, 1977). Thus, expectancies for success appear to become more accurate or realistic as children get older. Typically, this means that their perceptions become less positive and optimistic as they get older (Wigfield & Eccles, 2000). Overall, younger children tend to overestimate their own capability (when measured against objective tests of performance, whereas older children tend to make more realistic self-appraisals. It has been suggested that younger children have an inability to analyse information logically and are not likely to use objective or normative feedback (Spear & Armstrong, 1978), to consider their performances in relation to others (Ruble, Parsons, & Ross, 1976), to integrate past

performance information (Parsons & Ruble, 1977), or to distinguish between effort, ability, and outcome (Nicholls, 1978).

The Focus on Performance

Covington and Mueller (2001) argued that the focus on performance at school begins at an early age and increases as children get older. There appears to be two reasons for this increasing preoccupation with performance. 1. It has been suggested that, as students grow older, they increasingly make the link between grades and access to higher education, which, in turn, represents the “gateway” to prestigious occupations. 2. It has been suggested that, as children get older, their sense of self-worth increasingly depends on their ability to achieve competitively (Harari & Covington, 1981).

Grade and Achievement Motivation

Studies have shown that students become more extrinsically motivated and less intrinsically motivated as they get older (e.g., Harter, 1981a, 1981b). Research has also found that, while younger students generally have positive values towards education, as they get older, they begin to value certain school activities more and overall education less (Wigfield, 1984). Other research has shown that, as children get older, their interests and attitudes toward school deteriorates (Eccles & Wigfield, 1992; Eccles et al., 1998; Hoffman & Haussler, 1998). In a longitudinal study of over 200 African-American students in Grades 8, 9, and 10, called the 1989-1994 Project for the Promotion of Academic Competence in the United States, Spencer (1999)

found that adolescents had the same traditional values concerning family and valuing of school. The view that school is “extremely important” in obtaining goals, although high, decreased by about one third from one year to the next. The “significant others identified for obtaining goals” did not change from one year to the next. Parents were viewed as most important, who “help and encourage”. A total of 92% of students indicated that “getting a high school education” was “very important” and 80% responded that “getting a college education” was “important”.

Grade and Perception of Academic Ability

Age-related changes in students’ achievement-related beliefs have been explained in part by students’ ability perceptions. It has been suggested that, as children get older, they begin to view ability as a stable entity that cannot be changed (Eccles & Midgley, 1989). Thus, students who perform poorly at school and believe that their performance is due to lack of ability, tend to deflect the impact of their poor performance on their self-esteem by deciding that education and achievement are not important (Eccles et al., 1984; Eccles, Midgley, & Adler, 1984; Dweck, 2002a, 2002b, 200c). In addition, students’ conceptions of ability tend to change over time (Wigfield & Eccles, 2002). For example, younger students often see ability and effort as covarying positively, and older students often see ability and effort as inversely related (Nicholls, 1990). These differences may have important implications for students’ achievement behaviour (Wigfield & Eccles, 2002). Dweck (2002) argued that students’ conceptions of ability will influence whether they seek and enjoy challenges and how resilient they are in the face of set-backs.

School Transition

Increasing attention has been devoted to the impact of grade-related changes on students' psychological functioning. Stage-environmental fit theory has been used to explain student motivation (Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, & Maclver, 1993; Eccles, Wigfield, Midgley, Reuman, Maclver, & Feldlaufer, 1993). This model argues that students have different combinations of psychological needs at each level of their development, and, unless these needs are satisfied, academic achievement and an appreciation of learning will suffer. It is not surprising, then, that much research has focused on the impact of school transition (Covington & Dray, 2002). Several researchers have argued that the transition from primary school to secondary school causes a decrease in students' perceptions of their academic competence, academic motivation, intrinsic interest in learning, and school performance (e.g., Anderman & Anderman, 1999; Brush, 1980; Eccles & Midgley, 1989, 1990; Eccles, Midgley, & Adler, 1984; Harter, 1981a, 1981b; Pajares & Valiante, 1999; Simmons & Blyth, 1987). Harter, Whitesell, & Kowalski (1992) argued that students face the demands of a school culture that increasingly reinforces an extrinsic motivational orientation, especially through grading practices. As a result, students' educational focus shifts to the "products of learning", and their interest in the learning process tends to decline. Wigfield and Eccles (2002) stressed that, when schools focus too much on ability evaluations, social comparison between students, and performance goals, many students' sense of competence, intrinsic motivation, and mastery goal orientation will decrease. Nicholls (1979) also agreed that schools lead students to focus on their ability rather than learning tasks, and this has a negative impact on their motivation to learn. Harter (1982, 1986) argued that changes in

students' perceptions of their competence and their associated affective reactions greatly influence their motivation orientation. It is important to indicate, however, that this research does not clarify whether the new school setting, the new grade, or a combination of both are responsible for changes in students' perceived competence and motivation (Harter et al., 1992). Wigfield and Eccles (2002) acknowledged that the development of motivation is a complex interaction of change within the individual and change in the environments. Harter et al. (1992) found that increases in students' perceived competence were associated with increases in their intrinsic motivation, and decreases in students' perceived competence were associated with decreases in their intrinsic motivation after the transition to a new grade in the same school. Eccles, Wigfield, and Schiefele (1998) argued that, because younger students are more optimistic about their abilities, they are more positively motivated for school learning. Wigfield and Eccles (2002) proposed that changes in students' competence-related beliefs and achievement values can be explained in two ways. 1. They argued that because children become better at understanding, interpreting, and integrating the evaluative feedback they receive from others, and engage in more social comparison with their peers, they tend to become more accurate or realistic in their self-assessments (which leads some children to become more negative). 2. They argued that because school environments change in ways that make evaluations more salient and competition between students more likely, some children's self-assessments will decline. Marsh and Shavelson (1985) showed that, during middle childhood and early adolescence, children's self-concepts appear to be organised hierarchically, with specific aspects of self-concept at the bottom (e.g., math self-concept) and global self-concept at the top. They also found that there is less evidence of this hierarchical

structure of self-concept in late adolescents. Harter's (1982, 1990) work has shown that children's self-concepts are multi-dimensional and increase in complexity during adolescence. Harter (1990a, 1990b, 1998) has also found that, during middle adolescence, the self-concept is both less integrated and more unstable than at earlier or later stages.

Harter's (1981a, 1981b) and Gottfried's (1981) research showed changes from a predominantly intrinsic motivational orientation in 3rd Grade students to a more extrinsic motivational orientation by 9th Grade. It is important to note, however, that the biggest shift occurred between 6th Grade elementary high school and 7th Grade junior high school students. Brush (1980) also reported a decline in attitudes and commitment to schoolwork during this transition.

The decline in motivation and performance for many children during the transition from elementary school into middle school has been suggested to be caused by physiological and psychological changes associated with puberty (Anderman & Midgley, 1998). This assumption has been challenged by research that suggests that the nature of changes in motivation for students in middle school depends on characteristics of their learning environment (Midgley, 1993). Anderman and Midgley (1998) emphasised that students' perceptions of their educational experiences generally influence their motivation more than the actual, objective reality of those experiences. Ryan (2001) noted that adolescence marks the beginning of a downward trend in academic motivation and achievement, suggesting that such declines are the result of the "storm and stress" that accompanies adolescence, as well as the context in which these developmental changes unfold. Schoon and Parsons (2002) found that teenage aspirations were a good predictor of adult occupational attainment. That is,

young people with high aspirations were more likely than their less ambitious peers to enter a professional or managerial career. Kao and Tienda (1998) analysed data from the first three panels (1988, 1990, and 1992) of the National Education Longitudinal Study which included students in Grades 8, 10, and 12. The results showed that educational aspirations declined between 8th and 10th Grade and then increased by 12th Grade. Alexander and Cook (1979) argued that the pattern from 8th to 10th Grade is due to changes that transform “abstract ideas” into “likely possibilities”, and the pattern from 10th to 12th Grade is due to a “compositional transformation” and a greater likelihood that aspirations represent an account of concrete plans. However, Farmer (1983) found that 9th Grade students scored similarly to 12th Grade students on aspirations. Harter et al. (1992) found that the majority of students reported an increasing emphasis on grades, competition, and performance evaluation with each new grade, which tended to increase the focus on their own competence. Gottfredson (1981) reported evidence suggesting that students' aspirations are set before high school. He argued that by adolescence most students have established a set or range of occupations that they consider as acceptable alternatives and which reflect their view of where they fit into society. However, the career aspirations of adolescents are generally believed to be unstable and likely to change several times before adulthood (Phipps, 1995; Super, 1980; Trice & McClellan, 1993). A number of studies have shown that even adolescents in primary school have detailed knowledge about various jobs and the social context in which these jobs are embedded (Cook, Church, Ajanaku, Shadish, Kim, & Cohen, 1996; Vondracek, Silbereisen, Reitzle, & Wiesner, 1999). Trice and McClellan (1993) found a strong correlation between the career aspirations of children interviewed at ages 6 to 17 years and their actual careers 14 to

20 years later.

Hansford and Hattie (1982) showed an increase in the relationship between academic achievement and self-concept of ability from preschool to secondary school. In a more recent study, Marjoribanks and Mboya (2001) found that among female participants, the youngest group had significantly higher scores than the oldest group on perceptions of their interest in and enjoyment of school. The youngest male participants had significantly more positive perceptions of their interest in and enjoyment of school than did the oldest group. They found that male students tended to have more positive self-concepts than female students, whereas the self-concepts of the older female students were less positive than those of the younger female students. They concluded, that with increasing age, self-concept among female students decreases more than it does among male students.

Summary

Overall, comparatively little is known about changes in achievement motivation and other achievement-related variables from one academic year to the next, especially in an Australian context. While studies have examined the transitional effects of moving from primary school to high school, little research has examined grade-related changes. Meece and Kurtz-Costes (2001) pointed out that prior research has been limited by its failure to view the child from a developmental perspective. They argued that many investigations of the factors influencing children's academic outcomes are either single-age studies where researchers ignore whether the findings are relevant for children of other ages or cross-sectional studies where any age differences are treated in a cursory manner. Cairns and Cairns (1994) argued that, in

both these approaches, children's outcomes are treated in a static way, rather than recognising the 'tangled web' that places children on different “developmental trajectories”. Dowson and McInerney (1998) also argued that the literature is not clear on how developmental processes may influence students' motivational processes.

The Role of Identity Status

During the last 30 years, identity formation has been an important focus of theoretical and empirical research (Schwartz & Dunham, 2000). Erikson's (1950) construct of identity has been widely accepted as the principal theoretical framework for understanding the development of personality during adolescence.

Erikson's Psycho-Social Theory

Adolescence was characterised by Erikson as the period in the human life cycle during which adolescents must not only establish a sense of personal identity but also avoid the dangers of role diffusion and identity confusion. Erikson (1968) posited that the adolescent's need for a consistent and independent self-definition, in conjunction with significant others' values and societal demands, can lead the adolescent to an identity crisis in which decisions regarding Who am I? What do I believe? and What do I want from my life? are focused upon.

Erikson (1968) argued, “*The young person, in order to experience wholeness, must feel a progressive continuity between that which he has become to be during the long years of childhood and that which he promises to become in the anticipated future; between that which he conceives himself to be and that which he perceives*

others to see in him and to expect of him. Individually speaking, identity includes, but is more than, the sum of all the successive identifications of those earlier years when the child wanted to be, and often was forced to become, like the people he depended on” (p. 87).

Erikson's theory conceptualised development as “transactional” or “systematic” (Ford & Lerner, 1992) and argued that parents, peers, and other members of a person's social milieu are not only individual participants in developmental processes but are also carriers of powerful societal and cultural messages (Sorell & Montgomery, 2001).

Adams (1998) argued that identity is a psychological structure that is self-regulatory and functions to direct attention, filter or process information, manage impressions, and select appropriate behaviours. He argued that, like all social-psychological constructs, identity has its own functional purpose. The five most common functions of identity include (a) providing the structure for understanding who one is, (b) providing meaning and direction through commitments, values, and goals, (c) providing a sense of personal control and free will, (d) striving for consistency, coherence, and harmony between values, beliefs, and commitments, and (e) enabling the recognition of potential through a sense of future, possibilities, and alternative choices. Adams (1998) suggested that the dialectics of identity resolution are a function of the individual experiencing an incongruity between the known self (i.e., real self) and the self that could be (i.e., ideal self).

Adams (1998) argued that identity formation begins in middle adolescence and continues into late adolescence and sometimes early adulthood. Hence, an analysis of longitudinal research would expect to find that, as individuals progress through

adolescence, comparatively less mature identity status individuals and more mature identity status individuals (Adams, 1998). However, Erikson does not suggest a timetable of the ages at which particular identity issues are most likely to arise, become a focus of development, or reach eventual resolution. Hence, Waterman (1982) argued that wide individual differences in the timing of identity development may be expected.

Identity Formation

While several operationalisations of identity formation have emerged, one widely accepted in the study of adolescence has been provided by Marcia (1964, 1966). Marcia (1967, 1980) identified four adolescent identity statuses: (1) *Identity Diffusion or Identity Confusion*. An adolescent at this stage has not yet experienced an identity crisis nor made any commitments to a personal value system or set of beliefs; (2) *Identity Foreclosure*. An adolescent at this stage has not yet experienced an identity crisis, but has made commitments. These commitments are not the result of personal searching, exploring, or questioning. Rather, they are handed, ready-made, and superimposed on the adolescent by others, frequently parents; (3) *Identity Moratorium*. An adolescent at this stage is in an acute state of crisis. They are exploring and actively searching for values to eventually call their own. That is, the adolescent is actively struggling to find their identity, but has not yet made any commitments or has only developed temporary ones; and (4) *Identity Achievement*. An adolescent at this stage has experienced personal crises but has resolved them, and has committed to goals and values.

Each of these statuses differs on the basis of two main criteria, (a) whether the

adolescent has encountered a crisis in beliefs and values and (b) whether the adolescent has made any commitments to personal goals or ideological positions (Hummel & Roselli, 1983). Crisis refers to the experience of doubt about one's beliefs and values, and of uncertainty about alternatives and in making choices with reference to ideology and career. Commitment characterises at least tentative choices of and personal investment in certain alternatives (Hummel & Roselli, 1983).

Berzonsky and Kuk (2000) argued that, as a result of the resolution of these crises, the adolescent makes personal commitments to issues such as their value system, religious beliefs, educational aspirations, and future occupation. Thus, they argued that a coherent and well-integrated identity structure provides a sense of purpose and direction.

Erikson (1959) suggested a cultural component to identity, in which the adolescent's personal definition reflects the roles and accompanying expectations that they are involved in, as well as the roles and expectations that they anticipate becoming involved in. He argued, therefore, that the adolescent's personal identity must reflect some of the value orientations of their reference group(s), usually their parents and peers. Erikson (1974) proposed that the resolution of the search for identity is the final step in the internalisation of cultural values. Erikson (1968) stated, *“Although the specific quality of a person's identity differs from culture to culture, the accomplishment of this developmental task has a common element in all cultures”* (p. 92).

Identity Status and Educational Achievement

Despite the large body of literature on identity status in adolescents,

comparatively little research has applied this theoretical concept to the educational arena. This is quite surprising given that the major developmental task during adolescence is to form a personal identity, and a large proportion of adolescents' time is spent in the school environment or in pursuit of academic activities (Jones, 1993; Kouzma & Kennedy, 2002, 2004).

Waterman and Waterman (1970) found in a study of over 300 college junior and senior students in the United States of America that adolescents at the identity foreclosure stage were more comfortable at school and held more positive attitudes toward their educational experiences, compared to the uncommitted, searching, and experimenting adolescents at the identity moratorium stage, who evaluated their educational experience negatively. Orlofsky (1978) showed that those at the identity achievement and identity moratorium stages (non-student population) reported a higher level of achievement motivation compared to those at the identity foreclosure and identity diffusion stages. Donovan (1971) reported that adolescents at the identity foreclosure stage, who are attuned to the values of their parents, obtained the highest grades in school compared to adolescents at the identity diffusion, identity moratorium, and identity achievement stages. Francis (1981) found that adolescents at the identity achievement stage obtained higher Grade Point Average scores compared to adolescents at the identity diffusion and diffusion moratorium stages. Rodman (1983) found no significant difference between adolescents at the identity achievement, identity moratorium, identity foreclosure, and identity diffusion stages on Grade Point Average. Cross and Allen's (1970) study of college males in the United States of America showed that adolescents at the identity achievement stage performed better in college compared to adolescents at the identity diffusion, identity

moratorium, and identity foreclosure stages. They also found that adolescents who had achieved a stronger identity were more likely to be task-orientated and their work was more meaningful to them.

More recently, Wallace-Brosious, Serafica, and Osipow (1994) reported that identity achievement was negatively related to career indecision, but that identity moratorium and identity diffusion were positively related to career indecision. Similarly, Vondracek, Schulenberg, Skorikov, Gillepsie, and Wahlheim (1995) showed that adolescents at the identity achievement stage scored significantly lower on career indecision compared to adolescents at the identity moratorium, identity foreclosure, and identity diffusion stages. Berzonsky and Kuk (2000) found in a study of over 300 college students in the United States of America that differences in identity statuses accounted for significant variation in students' academic autonomy and educational involvement. Students characterised as being identity achieved or identity foreclosed were more firmly committed and goal directed than students in the identity moratorium or identity diffusion statuses.

Hummel and Roselli (1983) indicated that research examining personality profiles of high and low academic achievers have consistently shown that high academic achievers are more independent, organised, efficient, optimistic, and self-certain. In addition, high academic achievers tend to have more realistic life goals and values when compared to low academic achievers. It has been argued that they can be characterised by a drive to organise and plan their lives, a basic seriousness of purpose, and an ability to defer short-term pleasures for long-term goals (e.g., Conger, 1973; Finger & Silverman, 1966; Gawronski & Mathis, 1965; Ringness, 1967). Hummel and Roselli (1983) suggested that all of these variables are aspects of

successful identity formation. Berzonsky and Kuk (2000) have indicated that a mature identity status provides a sense of purpose and direction, which presumably applies to adolescents' academic life, as well as other aspects of their life.

Summary

There are numerous studies about identity formation, although relatively few focus on developmental aspects (Meilman, 1979) particularly in the context of school, and Australian research is especially lacking. This gap in the research literature is worth consideration given Erikson's (1963) position that identity formation is a developmental task. Orlofsky (1977) indicated that adolescents with a mature identity tend to be more achievement orientated, and the literature generally seems to support this notion. More recent research investigating identity status and educational variables is lacking in the psychological literature. Markstrom-Adams and Spencer (1994) argued that understanding how identity is embedded in interpersonal, social, and cultural contexts is a necessary ingredient in the design of effective intervention programs.

Research objectives

The aims of this study were to gain a more highly defined understanding of academic achievement by examining possible demographic differences in students' achievement-related cognitions; and provide information that may allow future researchers to design programs aimed at improving students' academic achievement within specified demographic strata. More specifically, the aims of the present study

were two-fold, (a) to investigate sociodemographic differences in students' achievement-related cognitions and (b) to examine the role of identity status in students' achievement-related cognitions.

Table 1 summarises the “group differences variables” and the “achievement-related cognitions^a variables”.

Table 1. Summary of Key Variables

grouping variables	achievement-related variables
<ul style="list-style-type: none"> · cultural background <ul style="list-style-type: none"> · Australian · Italian · Greek · Vietnamese · socioeconomic background <ul style="list-style-type: none"> · higher · middle · lower · gender <ul style="list-style-type: none"> · males · females · grade <ul style="list-style-type: none"> · Years 7 and 8 · Years 9 and 10 · Years 11 and 12 · identity status <ul style="list-style-type: none"> · achievement · moratorium · foreclosure · diffusion 	<ul style="list-style-type: none"> · achievement motivation <ul style="list-style-type: none"> · social-orientated · individual-orientated · concept of academic ability · aspirations <ul style="list-style-type: none"> · educational · occupational · perceptions of parental aspirations <ul style="list-style-type: none"> · educational · occupational

^aAchievement-related “cognitions” is used in the context of students’ beliefs and “variables” is used to refer to the constructs measured.

Hypotheses

Given the exploratory nature of this study, it is important to acknowledge the complexity of generating operational [hypotheses](#). For example, while it may be hypothesised that there will be significant group differences in students' achievement-related cognitions, the direction of these differences was at times difficult to predict. The following [hypotheses](#) were generated:

1. It was hypothesised that Anglo-Australian students would score significantly lower than Italian, Greek, and Vietnamese students on social-orientated achievement motivation, concept of academic ability, educational and occupational aspirations, and perceptions of parents' educational and occupational aspirations for them; and significantly higher on individual-orientated achievement motivation.

2. It was hypothesised that students from a higher socioeconomic background would score significantly higher than students from both middle and lower socioeconomic backgrounds on individual-orientated achievement motivation, social-orientated achievement motivation, concept of academic ability, educational and occupational aspirations, and perceptions of parents' educational and occupational aspirations for them.

3. It was hypothesised that females would score significantly higher than males on individual-orientated achievement motivation, concept of academic ability, educational and occupational aspirations, and perceptions of parents' educational and occupational aspirations for them; and significantly lower on social-orientated achievement motivation.

4. It was hypothesised that students in Years 7 and 8 would score significantly higher than students in Years 9 and 10 and Years 11 and 12 on social-orientated achievement motivation, concept of academic ability, educational and occupational aspirations, and perceptions of parents' educational and occupational aspirations for them; and significantly lower on individual-orientated achievement motivation.

5. It was hypothesised that students at the identity diffusion stage would score significantly higher than students at the identity achievement stage on social-orientated achievement motivation, concept of academic ability, educational and occupational aspirations, and perceptions of parents' educational and occupational aspirations for them; and significantly lower on individual-orientated achievement motivation and that these differences would be more pronounced for students in Years 11 and 12 compared to students in Years 7 and 8 and Years 9 and 10.

CHAPTER 2. METHODOLOGY

Participants

Description of Research Participants

The participants were 325 students (122 males and 203 females) recruited from five large secondary schools from across Metropolitan Melbourne (one Catholic girls school, one Catholic boys school, one Catholic co-educational school, one public co-educational school, and one public girls school). Participants were recruited from Years 7 to 12 (35.7% in Years 7 and 8; 32.9% in Years 9 and 10; 31.4% in Years 11 and 12). Ages ranged from 11 to 18 years.

The research sample consisted of students from one of the four leading migrant groups and languages in Australia- Australian, Italian, Greek, and Vietnamese. That is, participants with both parents born in Australia (28.9%) or at least one parent born in Italy (25.5%), Greece (21.5%), and Vietnam (24%) were recruited to participate in the research project. Hence, the research sample consisted of Anglo-Australian children and children of migrants from these countries. Overall, 45.5% of participants were classified as being from a lower socioeconomic background; 38.5% from a middle socioeconomic background; and 16% from a higher socioeconomic background. Table 2 shows the proportion of participants by background variables.

Participants born outside of Australia were excluded from the study, because of problems associated with acculturation and adjustment (e.g., Berry, Kim, Minde, & Mok, 1987; Ritsner & Ponizovsky, 1999) that may have potentially affected the results. Similarly, participants with parents born in two different overseas countries

were excluded from the study because of cultural identity issues (e.g., Berry, 1990, 1997; Gans, 1979; Gordon, 1964; Phinney & Divich-Navarro, 1997) that are beyond the scope of this study.

Table 2. Proportion of Participants by Background Variables

Demographic Variables	Number	Percentage (%)
Culture		
Australian	94	28.9
Italian	83	25.5
Greek	70	21.5
Vietnamese	78	24
SEB^a		
Higher SEB	52	16
Middle SEB	125	38.5
Lower SEB	148	45.5
Gender		
Male	122	37.5
Female	203	62.5
Grade		
Years 7 and 8	116	35.7
Years 9 and 10	107	32.9
Years 11 and 12	102	31.4
Identity		
Achievement	22	6.8
Moratorium	51	15.7
Foreclosure	64	19.7
Diffusion	188	57.8

^asocioeconomic background

Instruments

Demographic Data

In the present study, several demographic variables were measured using a questionnaire. These included cultural background, socioeconomic background, gender, and grade. A copy of this questionnaire is presented in Appendix 1.

Cultural Background

Statistics on the Diversity of the Australian Population

Since the end of War World II, the Australian population increased rapidly due to high levels of immigration, and the proportion of the population born overseas increased from 10% in 1947 to 23% in 1992. A further 19% of the population were identified as Australian-born in 1998, but had at least one parent born overseas (Australian Bureau of Statistics, 1998b). In 2002, the number of overseas-born Australians remained at 23% of the total population (Australian Bureau of Statistics, 2005a). As well as the increase in immigrant numbers, there has been a diversification of the Australian population. In 1947, 81% of the overseas born population came from one of the main English-speaking countries (United Kingdom and Ireland, New Zealand, South Africa, Canada and the United States), compared to only 39% in 2002 (Australian Bureau of Statistics, 2005a). The 2001 Census showed that a further 26% of persons born in Australia had at least one overseas born parent, that is, they were second generation Australians (Australian Bureau of Statistics, 2005a). In 2002, the Australian Bureau of Statistics identified 235,200 migrants from Italy, 171,600 migrants from Vietnam, and 131,200 migrants from Greece (Australian Bureau of

Statistics, 2005a). The five leading non-English languages in Australia were Italian, Greek, Arabic, Vietnamese, and Chinese (Australian Bureau of Statistics, 1998b).

In 2001, the Australian Bureau of Statistics reported that 12- to 24-year-olds (young people) represented 14% of the total Australian population (Australian Bureau of Statistics, 2005b). Just over 15% of young people in Australia had been born overseas. Over 16% of young people spoke languages other than English, partly reflecting a greater rate of maintenance of these languages among the second generation. Approximately 15% of young people spoke Italian, 15% Greek, and 8% Vietnamese (Australian Bureau of Statistics, 1996). Among young people born in Australia with at least one overseas-born parent, 43% had both parents born overseas, 35% had their father born overseas, and 22% had their mother born overseas (Australian Bureau of Statistics, 2005a). Almost 38% of Australian-born young people in Victoria had at least one parent born in a non-English-speaking country, and 16% had both parents born in a non-English-speaking country (Australian Bureau of Statistics, 1996).

Present Study's Measurement of Cultural Background

In the present study, it was preferred that the research sample constitute a multicultural cohort of Australian high school students so that ethnic demographics could be explored in relation to achievement-related cognitions. Therefore, the research sample consisted of students from the leading migrant groups and languages in Australia- Australian, Italian, Greek, and Vietnamese. That is, students with both parents born in Australia or at least one parent born in Italy, Greece, or Vietnam were recruited to participate in this study. Hence, cultural background was defined by the

country of birth of participants' parents, and the research sample consisted of Anglo-Australian children and children of migrants from these countries. This was important given that all participants in this study were required to be born in Australia. The following categories applied: Australian (both parents born in Australia); Italian (at least one parent born in Italy); Greek (at least one parent born in Greece); and Vietnamese (at least one parent born in Vietnam).

Socioeconomic Background

In the present study, socioeconomic background was defined by a constellation score of the educational attainment, occupation, and income of participants' parents. These were measured for both parents. The following scales were used.

Educational attainment

There were six assessment categories for educational attainment, (a) secondary schooling (Yrs 7-10), (b) secondary schooling (Yrs 11-12), (c) certificate or diploma, (d) trade qualification or apprenticeship, (e) bachelor degree, and (f) postgraduate degree. Higher scores indicated higher educational attainment.

Occupation

There were four assessment categories for occupation, (a) blue collar and unskilled positions (e.g., labourers, factory workers, cleaners), (b) blue collar and skilled positions (e.g., tradespersons such as electricians, beauticians, mechanics), (c) white collar positions (e.g., office and business positions such as clerical assistants,

sales assistants), and (d) professional and managerial positions (e.g., doctors, lawyers, teachers, executives). The unemployed or retirees were given a score of 0 for occupation. Higher scores indicated higher occupational background.

Income

There were six assessment categories for annual income, (a) up to \$14,999, (b) \$15,000 to \$24,999, (c) \$25,000 to \$34,999, (d) \$35,000 to \$44,999, (e) \$45,000 to \$54,999, and (f) \$55,000 and above. Those with no income were given a score of 0. Higher scores indicated higher income.

Lower, middle, and higher socioeconomic categories

In order to obtain lower, middle, and higher socioeconomic categories, educational, occupational, and income background scores for fathers and mothers were amalgamated by summing these and dividing the score by three. The three categories consisted of (a) lower socioeconomic background, (b) middle socioeconomic background, and (c) higher socioeconomic background.

Grade

In order for meaningful comparisons to be made, participants' grade was defined by three categories, (a) Years 7 and 8, (b) Years 9 and 10, and (c) Years 11 and 12.

Objective Measure of Ego-Identity Status

The Objective Measure of Ego-Identity Status questionnaire (Adams, Shea, & Fitch, 1979) was used to measure identity status. A copy of this questionnaire is presented in Appendix 2. This 24-item questionnaire provided a score for each of the four identity statuses developed by James Marcia, (a) *identity achievement* (e.g., I've thought my political beliefs through and realize I may or may not agree with many of my parent's beliefs), (b) *identity moratorium* (e.g., Religion is confusing to me right now. I keep changing my views on what is right and wrong to me), (c) *identity foreclosure* (e.g., My parents had it decided a long time ago what I should go into and I'm following their plans), and (d) *identity diffusion* (e.g., I'm sure it'll be pretty easy for me to change my occupational goals when something better comes along). Six items make up each of the four identity statuses. The items were rated on a 6-point scale from 1 (strongly agree) to 6 (strongly disagree). Scores were classified into one of the four identity statuses using SPSS computer program scoring commands provided by the authors of the questionnaire. A copy of these commands is presented in Appendix 3.

All subscales have obtained satisfactory psychometric properties in student samples. The original authors reported that this questionnaire has high internal consistency as measured by test-retest correlations over several weeks for the diffusion, foreclosure, moratorium, and achievement subscales (ranging from .71 to .93); convergent validity when compared to measures of self-acceptance, locus of control, rigidity, and authoritarianism; and concurrent validity when compared to other measures of identity status (e.g., Marcia's Ego Identity Incomplete Sentence Blank).

These psychometric properties hold for high school students of various grades and for both genders. Several recent studies have successfully utilised the Objective Measure of Ego-Identity Status questionnaire in their research using student samples (e.g., Allison, 1998; Berzonsky & Kuk, 2000; Skorikov & Vondracek, 1998).

In the present study, this questionnaire had high internal consistency for each Identity Status subscale as measured by Cronbach's alpha for the sample of high school students employed: Identity Achievement (.71), Identity Foreclosure (.83), Identity Moratorium (.91), and Identity Diffusion (.87).

Research questionnaires

A battery of questionnaires to measure achievement-related cognitions was administered to students. These included the Achievement Motivation Orientation Scale, Brookover Concept of Academic Ability Scale, and Aspirations Scale. A copy of each questionnaire is presented in Appendices 4 to 6, respectively.

Achievement-Related Variables

Achievement Motivation Orientation Scale

The Achievement Motivation Orientation Scale (Yang & Yu, 1988) is a 51-item questionnaire, which consists of two subscales: the *social-orientated achievement motivation* (SOAM) subscale consists of 25 items that assess the extent to which achievement goals, achievement behaviour, outcome evaluation, and consequences are regulated by significant others (e.g., I try my best to meet my parents' expectations so as not to disappoint them); and the *individual-orientated achievement motivation*

(IOAM) subscale consists of 26 items that assess the extent to which achievement goals, achievement behaviour, outcome evaluation, and consequences are regulated by the individual (e.g., I evaluate my performance based on my own expectations and standards). Participants were asked to rate the extent to which each item is true of them on a 4-point scale from 1 (completely untrue of me) to 4 (very true of me). The SOAM scores ranged from 25 to 100 with higher scores indicating higher SOAM, and IOAM scores ranged from 26 to 104, with higher scores indicating higher IOAM.

Both subscales have obtained satisfactory psychometric properties in student samples. The original authors reported that this questionnaire has high internal consistency as measured by Cronbach's alpha for the SOAM and IOAM subscales (ranging from .85 to .88 and .86 to .89, respectively); and high test-retest correlations over two weeks for the SOAM and IOAM subscales (ranging from .84 to .86 and .79 to .80, respectively).

These psychometric properties hold for high school students of various grades and for both genders. Several recent studies have successfully utilised the Achievement Motivation Orientation Scale in their research using student samples (e.g., Chang, Wong, & Teo, 2000; Lew et al., 1998; Liang, Guo, & Zhang, 1998).

In the present study, this questionnaire had high internal consistency for both subscales as measured by Cronbach's alpha for the sample of high school students employed: Social-Orientated Achievement Motivation (.90) and Individual-Orientated Achievement Motivation (.90).

Brookover Concept of Academic Ability Scale

Boersma, Chapman, and Maguire (1979) emphasised that most instruments used to measure concept of ability tend to assess some aspect of global self-regard. Wylie (1974) added that these instruments also tend to cover too many personality traits to allow for meaningful predictions of human behaviour. Hence, researchers have argued the importance of measuring concept of ability in the school domain (i.e., concept of academic ability). Hansford and Hattie (1982) found in an extensive meta-analysis that the average correlation between achievement and general self-concept was .21. This correlation rose to .42 when academic self-concept (i.e., domain-specific self-concept) was measured.

The Brookover Concept of Academic Ability Scale (Brookover et al., 1965) is an 8-item questionnaire which asked students to rate their present school ability compared with their classmates (e.g., How do you rate yourself in school ability compared to those in your class?) and their future capacity (e.g., What kind of grades do you think you are capable of getting?). The items on this questionnaire were rated on a 5-point scale (which differed for each item, refer to Appendix 5) and summed. Scores ranged from 8 to 40, with higher scores indicating a more positive concept of academic ability.

The questionnaire has obtained satisfactory psychometric properties in student samples. The original authors reported that this questionnaire has high internal consistency as measured by Hoyt's Analysis of Variance (ranges from .81 to .92); a consistently high coefficient of reproducibility (ranges from .92 to .97 over four years); high test-retest correlations (ranges from .63 to .80 over one year); construct validity (i.e., there is a strong relationship between concept of academic ability and

the perceived evaluations of academic ability held by others); and predictive validity (i.e., concept of academic ability is a good predictor of grades, even when IQ is held constant).

These psychometric properties hold for high school students of various grades and for both genders. Several recent studies have successfully utilised the Brookover Concept of Academic Ability Scale in their research using student samples (e.g., Bauer, Sapp, & Johnson, 2000; Corville-Smith, Ryan, Adams, & Dalicandro, 1998; Smith, Sapp, Farrell, & Johnson, 1998).

In the present study, this questionnaire had high internal consistency as measured by Cronbach's alpha (.97) for the sample of high school students employed.

Aspirations Scale

An aspirations scale was developed to measure students' own educational and occupational aspirations and perceptions of their parents' educational and occupational aspirations for them. Educational aspirations were measured by asking students, "How far would you like to go in school?" and "How far would your parents like you to go in school?" Responses were rated on 7-point scale: (1) up to Year 10; (2) up to Year 11; (3) up to Year 12 and obtain Victorian Certificate of Education (VCE); (4) trade qualification or apprenticeship; (5) TAFE diploma or certificate; (6) bachelor degree; or (7) postgraduate degree. Higher scores indicated higher educational aspirations.

Similarly, occupational aspirations were measured by asking students, "What job or occupation would you like to have in the future?" and "What job or occupation would your parents like you to have in the future?" Responses were coded using the

same scale used to measure socioeconomic background. The four categories were (a) blue collar and unskilled positions (e.g., labourers, factory workers, cleaners), (b) blue collar and skilled positions (e.g., tradespersons such as electricians, beauticians, mechanics), (c) white collar positions (e.g., office and business positions such as clerical assistants, sales assistants), and (d) professional and managerial positions (e.g., doctors, lawyers, teachers, executives). Higher scores indicated higher occupational aspirations.

Research procedure

Internal and external ethics approval was obtained to conduct this study from Victoria University's Human Research Ethics Committee, the Victorian Department of Education, and the Catholic Education Office of Victoria. A copy of each notice of approval is presented in Appendices 7 to 9, respectively. Once these were obtained, a copy of the research proposal was sent to several randomly¹ chosen school Principals from large Public/Government and Catholic, girls, boys, and co-education secondary schools from across Metropolitan Melbourne, Australia. Permission was sought to approach students to participate in the study. Five schools replied and agreed to take part in this study. Following collaboration with Year level coordinators, subject teachers, and school counsellors, briefing sessions with students were organised. This involved spending a day at each school speaking to students at each Year level, class by class. Students were informed about the aims and nature of the study, and confidentiality was assured. Time was allocated for students to ask questions, and all

¹ Government and Catholic secondary schools were identified from the Melbourne Yellow Pages Directory; [and a random selection was made from these schools.](#)

enquiries were addressed. Classes at each Year level at each school were briefed. Each session lasted approximately 20 minutes.

Students were then asked if they were willing to participate in the study, and a battery of surveys was distributed to those who volunteered. In addition to the surveys, students were provided with an Information Form that included the researcher's contact details, and a Participant and Parental (for those under the age of 17 years) Consent Form. A copy of each form is presented in Appendices 10 and 11, respectively. Students were asked to complete these outside of school time within a two-week time period. They were asked to place the consent forms and completed surveys in a sealed envelope that was provided in a box that was placed at the administration office of each school. These were collected two weeks later.

The Victorian Department of Education (1999) has emphasised that, given the core business of schools is teaching and learning, research causing an unacceptable level of disruption to the teaching and learning process will not be approved. Since approval from the Department of Education was sought to conduct this study, survey administration was chosen as a time-effective method of gathering large amounts of information from a sample of the high school student population. This method also meant that any disruption to students' and teachers' class time was kept to a minimum. Once all the surveys had been collected, each survey was scored, and the group data were collated and entered [into](#) SPSS for Windows for data analysis.

CHAPTER 3: RESULTS

Two phases of data analysis were implemented in order to examine the aims of this study. The first aim of the study, to gain a more highly defined understanding of academic achievement, was examined in Phase I by examining possible demographic differences in students' achievement-related cognitions. Here, four Multivariate Analysis of Variances (MANOVAs) were employed to identify any cultural, socioeconomic, gender, and grade differences in students' achievement-related cognitions.

The second aim of the study, to provide information that may allow future researchers to design programs aimed at improving students' academic achievement within specified demographic strata, was investigated in Phase II by examining identity status differences in students' achievement-related cognitions. Considering the increased demographic understanding of students' achievement-related cognitions in the first phase of the study, it was clear that the three grade groups made three distinct populations that had to be investigated independently. Inference made in relation to one age group would not translate to another. Therefore, a MANOVA was employed to examine identity status differences in the achievement-related cognitions of students in Years 7 and 8, Years 9 and 10, and Years 11 and 12.

Tests of Assumptions for MANOVA

Before data analyses were conducted, tests of assumptions for MANOVA were examined. Hair, Anderson, Tatham, and Black (1998) argued that, in any MANOVA

analysis, the assumption of greatest importance is the homogeneity of variance-covariance matrices across the groups. In this instance, Levene's Test was used to examine the homogeneity of the variance of the dependent variables between groups. The Levene statistics indicated no significant differences for cultural background, socioeconomic background, gender, grade, or identity status at alpha .05. Thus, the unequal cell sizes were not likely to impact on the sensitivity of the statistical tests of group differences.

With the univariate tests showing non-significance, the multivariate tests were examined. Box's M Test was used to examine the overall equivalence of the variance-covariance matrices. The results showed no significance for cultural background, socioeconomic background, gender, grade, or identity status at alpha .05. Hair et al. (1998) argued, "*meeting this criteria allows for direct interpretation of the results without having to consider group sizes, level of covariances in the group, and so forth*" (p. 375).

Barlett's test for sphericity was used to examine the correlations among all the dependent variables and whether, collectively, significant intercorrelations exist. In this sample, a significant degree of intercorrelation existed (at least .002 for each) satisfying the necessary level of intercorrelation to justify MANOVA.

Hair et al. (1998) argued that multiple comparisons tend to increase Type 1 error. In this study, several MANOVAs were conducted. In an attempt to reduce the possible increase in Type 1 error, alpha was reduced to .01. This meant that significance was only accepted at .01 or less in the data analysis.

This study used a number of scales to test the generated hypotheses. There is no general consensus in the literature on the role of adjustments to alpha when testing of

a number of dependent variables in large multifaceted research. However, Saville (1990) claimed that global alpha adjustments should be avoided because this practice may lead to the omission of important and relevant findings. That is, the role of certain variables cannot be assessed without analysis. Saville (1990) argued, *"In the more general hypothesis testing context, the scenario that is most acceptable to statisticians is that of a well-designed study in which orthogonal contrasts are prespecified, corresponding to a 'vision of reality' that will, it is hoped, be supported by the data. If this vision is not supported by the data, however, it is sometimes found that another set of orthogonal contrasts provides a good description of the data. This description generates a new vision of reality, which will then need to be confirmed in subsequent studies"* (p. 179).

Phase I: Demographic Understanding

Cultural Group Differences

A MANOVA was used to analyse possible cultural group differences in students' achievement-related cognitions. The Multivariate Test, Pillai's Trace², showed no significant differences between students from Australian, Italian, Greek, and Vietnamese backgrounds on their achievement-related cognitions [$F(21,951) = 1.25, p > .01$]. The univariate analyses showed no significant cultural group differences for any of the achievement-related variables. Therefore, in the present study, cultural background was not a factor that distinguished between achievement-related variables.

²Pillai's criterion is considered to have acceptable power and be the most robust statistic against violations of assumptions (Hair et al., 1998).

Socioeconomic Background Differences

Possible socioeconomic background differences in students' achievement-related cognitions were analysed with a MANOVA. The Multivariate Test, Pillai's Trace, showed significant differences between students from higher, middle, and lower socioeconomic backgrounds on their achievement-related cognitions [$F(14,634) = 31.95, p < .001$]. The univariate analyses showed significant socioeconomic background differences for four variables: educational aspirations [$F(2,322) = 68.19, p < .001$], occupational aspirations [$F(2,322) = 48.78, p < .001$], perceptions of parents' educational aspirations for them [$F(2,322) = 70.84, p < .001$], and perceptions of parents' occupational aspirations for them [$F(2,322) = 67.16, p < .001$]. Post-hoc analysis using Bonferroni³ adjustment was used to examine differences between students from each socioeconomic background for these four variables. The Post-hoc Multiple Comparisons results showed that students from a higher socioeconomic background scored significantly higher than students from both a lower and middle socioeconomic background on educational aspirations, occupational aspirations, perceptions of parents' educational aspirations for them, and perceptions of parents' occupational aspirations for them. The descriptive and variance explained (Eta Squared) values are presented in Table 3. These results indicate that socioeconomic background is an important factor relating to achievement-related cognitions.

³Bonferroni adjustment controls overall error rate by setting the error rate for each test to the experimentwise error rate divided by the total number of tests. Hence, the observed significance level is adjusted for the fact that multiple comparisons are being made (Hair et al., 1998).

Table 3. Means, Standard Deviations, and Variance Explained for Students' Achievement-Related Cognitions by Socioeconomic Background

	SOCIOECONOMIC BACKGROUND			<i>p</i>	Partial Eta ²
	Higher SEB n = 148	Middle SEB n = 125	Lower SEB n = 52		
1	70.19 (26.68)	61.71 (26.88)	65.12 (28.35)	.17	.01
2	53.50 (29.76)	63.51 (32.66)	60.87 (31.34)	.16	.01
3	20.71 (7.47)	19.82 (7.23)	20.83 (6.86)	.48	.01
4	5.33 ^a (1.08)	4.46 ^b (.81)	3.51 ^b (1.18)	.0005**	.29
5	3.40 ^a (.79)	2.19 ^b (.50)	2.00 ^b (1.15)	.0005**	.23
6	5.33 ^a (1.08)	4.48 ^b (.76)	3.53 ^b (1.14)	.0005**	.31
7	3.46 ^a (.64)	2.21 ^b (.48)	2.47 ^b (.79)	.0005**	.29

Bonferroni Post Hoc significant differences = ^{a-b}

SEB= socioeconomic background

1 = Social-Orientated Achievement Motivation

2 = Individual-Orientated Achievement Motivation

3 = Concept of Academic Ability

4 = Educational Aspirations

5 = Occupational Aspirations

6 = Students' Perceptions of their Parents' Educational Aspirations for them

7 = Students' Perceptions of their Parents' Occupational Aspirations for them

** *p* < .001

Gender Differences

A MANOVA was used to analyse possible gender differences in students' achievement-related cognitions. The Multivariate Test, Pillai's Trace, showed significant differences between male and female students on their achievement-related cognitions [$F(7,317) = 5.50, p < .001$]. The univariate analyses showed significant gender differences for one variable: concept of academic ability [$F(1,323) = 36.95, p < .001$], with females scoring higher than males. The descriptive and variance explained (Eta Squared) values are presented in Table 4.

Table 4. Means, Standard Deviations, and Variance Explained for Students' Achievement-Related Cognitions by Gender

	GENDER		<i>p</i>	Partial Eta ²
	Males n = 122	Females n = 203		
1	65.94 (26.39)	62.63 (28.16)	.09	.01
2	57.83 (31.36)	62.44 (31.84)	.21	.01
3	17.49 (6.45)	22.18 (6.90)	.0005**	.10
4	4.19 (1.28)	4.15 (1.20)	.73	.00
5	2.32 (1.01)	2.29 (1.02)	.77	.00
6	4.23 (1.22)	4.16 (1.18)	.60	.00
7	2.53 (.79)	2.53 (.78)	.95	.00

1 = Social-Orientated Achievement Motivation
 2 = Individual-Orientated Achievement Motivation
 3 = Concept of Academic Ability
 4 = Educational Aspirations
 5 = Occupational Aspirations
 6 = Students' Perceptions of their Parents' Educational Aspirations for them
 7 = Students' Perceptions of their Parents' Occupational Aspirations for them
 ** $p < .001$

Grade Differences

Possible grade differences in students' achievement-related cognitions were analysed with a MANOVA. The Multivariate Test, Pillai's Trace, showed significant differences between students in Years 7 and 8, Years 9 and 10, and Years 11 and 12 on their achievement-related cognitions [$F(14,634) = 22.28, p < .001$]. The univariate analyses showed significant grade differences for five variables: social-orientated achievement motivation [$F(2,322) = 160.51, p < .001$], individual-orientated achievement motivation [$F(2,322) = 220.94, p < .001$], concept of academic ability [$F(2,322) = 11.34, p < .001$], occupational aspirations [$F(2,322) = 6.23, p < .01$], and perceptions of parents' occupational aspirations for them [$F(2,322) = 6.73, p < .001$]. These results indicate that grade group is an important factor relating to achievement-

related cognitions. Post-hoc analysis using Bonferroni adjustment was used to examine differences between students from each grade group for these five variables. The Multiple Comparisons results showed that students in Years 7 and 8 scored significantly higher than students in Years 11 and 12 on social-orientated achievement motivation, occupational aspirations, and perceptions of parents' occupational aspirations for them; and significantly lower on individual-orientated achievement motivation and concept of academic ability. The descriptive and variance explained (Eta Squared) values are presented in Table 5. These results indicate that grade is an important factor relating to achievement-related cognitions.

Table 5. Means, Standard Deviations, and Variance Explained for Students' Achievement-Related Cognitions by Grade Group

	GRADE GROUP			<i>p</i>	Partial Eta ²
	Years 7 and 8 n = 116	Years 9 and 10 n = 107	Years 11 and 12 n = 102		
1	83.84 (14.09) ^a	70.02 (25.79)	37.11 (17.29) ^b	.0005**	.49
2	37.66 (15.08) ^a	52.97 (30.02)	94.04 (12.38) ^b	.0005**	.58
3	18.42 (7.18)	20.26 (7.02)	22.86 (6.39)	.0005**	.07
4	4.28 (1.29)	4.24 (1.30)	3.96 (1.04)	.12	.01
5	2.49 (1.12) ^a	2.36 (.97)	2.02 (.89) ^b	.002*	.04
6	4.31 (1.23)	4.26 (1.27)	3.96 (1.04)	.07	.02
7	2.71 (.87) ^a	2.53 (.78)	2.32 (.62) ^b	.001**	.04

Bonferroni Post Hoc significant differences = ^{a-b}

1 = Social-Orientated Achievement Motivation

2 = Individual-Orientated Achievement Motivation

3 = Concept of Academic Ability

4 = Educational Aspirations

5 = Occupational Aspirations

6 = Students' Perceptions of their Parents' Educational Aspirations for them

7 = Students' Perceptions of their Parents' Occupational Aspirations for them

* *p* < .01

** *p* < .001

Phase II: Identity Status and Achievement-Related Cognitions in Three Age Groups

Identity Status Differences in Year 7 and 8 Students

A MANOVA was used to analyse possible identity status differences in Year 7 and 8 students' achievement-related cognitions. The Multivariate Test, Pillai's Trace, showed significant differences between identity achievement, identity moratorium, identity foreclosure, and identity diffusion students on their achievement-related cognitions [$F(21,324) = 5.28, p < .001$]. The univariate analyses showed significant identity status differences for two variables: social-orientated achievement motivation [$F(3,112) = 7.35, p < .001$] and individual-orientated achievement motivation [$F(3,112) = 7.96, p < .001$]. Post-hoc Tests could not be used to examine differences between students in each identity status group for these two variables because of the small cell sizes. Hair et al. (1998) recommended a minimum cell size of 20 observations for each group but argued that larger cell sizes may be required for acceptable statistical power. They maintained that the sample in each cell must be greater than the number of dependent variables included, at the minimum. In the present study, there were seven dependent variables. The descriptive and variance explained (Eta Squared) values are presented in Table 6.

Table 6. Means, Standard Deviations, and Variance Explained for Year 7 and 8 Students' Achievement-Related Cognitions by Identity Status

	IDENTITY STATUS				<i>p</i>	Partial Eta ²
	Diffusion n = 104	Foreclosure n = 3	Moratorium n = 8	Achievement n = 1		
1	83.89 (2.99)	91.67 (14.43)	87.50 (13.36)	25.00 (.00)	.0005**	.16
2	36.75 (13.85)	43.33 (15.01)	39.00 (13.89)	104.00 (.00)	.0005**	.18
3	18.09 (6.91)	21.00 (10.15)	21.13 (9.85)	24.00 (.00)	.51	.02
4	4.29 (1.23)	4.67 (1.53)	4.38 (1.77)	1.00 (.00)	.08	.06
5	2.46 (1.09)	2.67 (1.53)	2.63 (1.30)	4.00 (.00)	.56	.02
6	4.31 (1.19)	4.67 (1.53)	4.38 (1.77)	3.00 (.00)	.71	.01
7	2.67 (.86)	3.00 (1.00)	2.88 (.99)	4.00 (.00)	.40	.03

1 = Social-Orientated Achievement Motivation

2 = Individual-Orientated Achievement Motivation

3 = Concept of Academic Ability

4 = Educational Aspirations

5 = Occupational Aspirations

6 = Students' Perceptions of their Parents' Educational Aspirations for them

7 = Students' Perceptions of their Parents' Occupational Aspirations for them

** $p < .001$

Identity Status Differences in Year 9 and 10 Students

A MANOVA was used to analyse possible identity status differences in Year 9 and 10 students' achievement-related cognitions. The Multivariate Test, Pillai's Trace, showed no significant differences between identity achievement, identity moratorium, identity foreclosure, and identity diffusion students on their achievement-related cognitions [$F(21,297) = .57, p > .01$]. The univariate analyses also showed no significant cultural group differences for any of the achievement-related variables. Therefore, in the present study identity status was not a factor that distinguished between achievement-related variables for students in Years 9 and 10.

Identity Status Differences in Year 11 and 12 Students

A MANOVA was used to analyse possible identity status differences in Year 11 and 12 students' achievement-related cognitions. The Multivariate Test, Pillai's Trace, showed significant differences between identity achievement, identity moratorium, identity foreclosure, and identity diffusion students on their achievement-related cognitions [$F(18,285) = 2.83, p < .001$]. The univariate analyses showed significant identity status differences for three variables: concept of academic ability [$F(3,98) = 6.92, p < .001$], educational aspirations [$F(3,98) = 5.14, p < .01$], and perceptions of parents' educational aspirations for them [$F(3,98) = 5.14, p < .01$]. Post-hoc analysis using Bonferroni adjustment was used to examine differences between students in each identity status group for these three variables. The Multiple Comparisons results showed that students at the identity achievement stage scored significantly higher on concept of academic ability than students at the identity foreclosure and identity

moratorium stages; and significantly higher on educational aspirations and perceptions of parents' educational aspirations for them than students at the identity foreclosure stages. The descriptive and variance explained (Eta Squared) values are presented in Table 7. These results indicate that identity status is an important factor relating to the achievement-related cognitions of students in Years 11 and 12.

Table 7. Means, Standard Deviations, and Variance Explained for Year 11 and 12 Students' Achievement-Related Cognitions by Identity Status

	IDENTITY STATUS				<i>p</i>	Partial Eta ²
	Diffusion n = 20	Foreclosure n = 31	Moratorium n = 32	Achievement n = 19		
1	38.55 (14.63)	34.16 (16.69)	41.56 (21.20)	32.89 (11.94)	.23	.04
2	91.65 (12.98)	98.97 (9.30)	92.91 (13.97)	95.79 (12.42)	.13	.06
3	22.65 (7.71)	20.68 (4.82) ^a	21.94 (6.16) ^b	28.21 (4.69) ^b	.0005**	.18
4	4.25 (1.21)	3.42 (1.67) ^a	4.03 (1.03) ^b	4.42 (1.07) ^b	.002*	.14
5	2.15 (.99)	1.81 (.83)	2.06 (.76)	2.16 (1.07)	.44	.03
6	4.25 (1.21)	3.42 (.67) ^a	4.03 (1.03) ^b	4.42 (1.07) ^b	.002*	.14
7	2.45 (.69)	2.19 (.54)	2.28 (.52)	2.47 (.77)	.32	.04

Bonferroni Post Hoc significant differences = ^{a-b}

1 = Social-Orientated Achievement Motivation

2 = Individual-Orientated Achievement Motivation

3 = Concept of Academic Ability

4 = Educational Aspirations

5 = Occupational Aspirations

6 = Students' Perceptions of their Parents' Educational Aspirations for them

7 = Students' Perceptions of their Parents' Occupational Aspirations for them

* *p* < .01

** *p* < .001

Summary

The Phase I results showed that most of the demographic differences in students' achievement-related cognitions were among grade and socioeconomic groups. Partial Eta Squared results indicated some high effect sizes (variance explained) in students' achievement-related cognitions by grade and socioeconomic background. The Phase II results showed that most of the identity status differences in students' achievement-related cognitions were in the Year 11 and 12 group. This is consistent with the Partial Eta Squared results, which also indicated that most of the variance in students' achievement-related cognitions could be explained by identity status for Year 11 and 12 students

CHAPTER 4. DISCUSSION

Research objectives

The aims of this study were to gain a more highly defined understanding of academic achievement by examining possible demographic differences in students' achievement-related cognitions and to provide information that may allow future researchers to design programs aimed at improving students' academic achievement within specified demographic strata. More specifically, the aims of the present study were two-fold, (a) to investigate sociodemographic differences in students' achievement-related cognitions and (b) to examine the role of identity status in students' achievement-related cognitions. The objectives of this study have been successfully met, and the results of this study answer the postulated research questions.

Phase 1

Sociodemographic Differences in Students' Achievement-Related Cognitions

Cultural Group Differences in Students' Achievement-Related Cognitions

It was hypothesised that Anglo-Australian students would score significantly lower than Italian, Greek, and Vietnamese students on social-orientated achievement motivation, concept of academic ability, educational and occupational aspirations, and

perceptions of parents' educational and occupational aspirations for them; and significantly higher on individual-orientated achievement motivation.

This hypothesis was not supported by the results, which showed no significant cultural group differences for any of the achievement-related variables measured in this study.

These results are not consistent with the psychological literature. For example, the concepts of individualism and collectivism have been frequently used to explain differences observed between cultural groups (Hofstede, 1980; Triandis, 1988). Hofstede (1980) argued that success and failure experienced by individuals from collectivist societies extends beyond the dimensions of self into that of the community. Hence, failure is seen not only as a personal responsibility, but also as a collectivist responsibility of the in-group. Thus, a student who fails [may cause](#) shame or “loss of face” to their family. Yang (1986) argued that individual-orientated achievement motivation tends to be endorsed by individualistic cultures and emphasises the qualities of self-reliance, individualism, and autonomy (Yang & Yu, 1988; Yu & Yang, 1989). In contrast, he argued that social-orientated achievement motivation tends to be strongly socialised in collectivist cultures and reflects one's moral obligation to succeed in order to enhance the status of the family or other social unit (Yang, 1986; Yang & Yu, 1988; Yu & Yang, 1989).

Good and Brophy (1994) argued that, in many immigrant cultures in Australia, the educational values of both parents and their children are different from those of Anglo-Australian families. In particular, there is a much stronger expectation (particularly among parents and other family members) that children will work hard to succeed at school. Students who have been raised to believe that academic success is

very important to family honour and that academic failure disgraces the family are likely to work very hard at school (Fergusson et al., 1991). Consequently, some families foster an environment in which school success is highly valued (Marjoribanks, 1982).

Triandis (1995a, 1995b, 1995c) argued that, in most western societies, students tend to believe that effort and ability stand in a “multiplicative relationship” to each other. In contrast, in most collectivist societies, students tend to believe that effort and ability have an “additive relationship” to each other. He argued that students from western societies are more likely to believe that, without a given level of ability no amount of effort will be sufficient. Students from collectivist societies, however, are more likely to believe that effort expenditure will ultimately bring rewards.

Marjoribanks (1996a, 1996b) found that Anglo-Australian parents were characterised by significantly stronger achievement and independence training and were more individualistic in their achievement orientation compared to Greek and Southern Italian parents. He also found that Greek parents indicated stronger achievement training and were more dependent and collectivist in their achievement orientation compared to Southern Italian parents. In addition, Greek and Southern Italian parents expressed higher aspirations for their children than Anglo-Australian parents. Overall, the educational and occupational aspirations of Greek adolescents were significantly higher than those of Anglo-Australian and Southern Italian adolescents. In a more recent study, Marjoribanks (2002b) found that adolescents from Chinese and Vietnamese families reported the highest occupational aspirations, followed by adolescents from Lebanese, Greek, and Italian families.

The results of this study suggest that Australian-born high school students with at least one parent born either in Italy, Greece, or Vietnam do not differ from Australian-born high school students with both parents born in Australia with regard to achievement motivation orientation, concept of academic ability, or educational and occupational aspirations. Hence, differences in achievement-related beliefs between eastern and western (or individualist and collectivist) societies do not appear to be relevant to this population of students.

Socioeconomic Background Differences in Students' Achievement-Related Cognitions

It was hypothesised that students from a higher socioeconomic background would score significantly higher than students from both middle and lower socioeconomic backgrounds on individual-orientated achievement motivation, social-orientated achievement motivation, concept of academic ability, educational and occupational aspirations, and perceptions of parents' educational and occupational aspirations for them.

This hypothesis was only partially supported by the results. The MANOVA results showed significant socioeconomic group differences for four variables, educational aspirations, occupational aspirations, students' perceptions of their parents' educational aspirations for them, and students' perceptions of their parents' occupational aspirations for them.

These results are partially consistent with previous research findings. For example, research has shown that parents from higher socioeconomic backgrounds (defined by higher levels of education) tend to be more active participants in their

children's education and to have higher educational expectations for their children (National Centre for Educational Statistics, 1998). Bacete and Ramirez (2001), in a study of Grade 7 Spanish students, also showed that parents from higher socioeconomic backgrounds (defined by educational and occupational status) tended to be more involved in their children's education. Williams et al. (1993) found that families from higher socioeconomic backgrounds tended to promote higher levels of achievement and provide higher levels of psychological support to their children to continue education.

Researchers have found that parents with high educational attainment and/or high income tend to pass on their educational and resource advantages to their children, and they have higher aspirations for their children, ultimately resulting in higher educational aspirations by the children themselves (Useem, 1992; Wilson & Wilson, 1992).

Douvan (1975) found that parents from higher socioeconomic backgrounds assert demands for individual success earlier and more regularly during child-rearing than parents from lower socioeconomic backgrounds. She also found that students from higher socioeconomic backgrounds reported higher levels of motivation to achieve than students from lower socioeconomic backgrounds. Researchers have attributed these differences to students' achievement values, which are presumed to be directly related to their family's socioeconomic position (Maltby et al., 1995).

Mortimer et al. (1992a, 1992b) found that parents with post-secondary education tended to pass along its importance to their children. Wilson and Wilson (1992) showed that adolescents whose parents' education level was higher were more likely to have high aspirations. Similarly, adolescents whose parents' education level

was lower were more likely to have low aspirations. Saha (1985) found that socioeconomic background directly influenced the expected occupations of students from three cultural backgrounds, Australian, British/ Irish, and European. Valadez (1998) found that the effects of culture and gender on educational aspirations were mediated by socioeconomic background.

The results of this study verify that socioeconomic background does indeed play an important role in students' educational and occupational aspirations. However, the results do not explain how or why these differences exist or the relationship between aspirations, achievement motivation orientation, and concept of academic ability.

Gender Differences in Students' Achievement-Related Cognitions

It was hypothesised that females would score significantly higher than males on individual-orientated achievement motivation, concept of academic ability, educational and occupational aspirations, and perceptions of parents' educational and occupational aspirations for them; and significantly lower on social-orientated achievement motivation.

This hypothesis was only partially supported by the results. The MANOVA results showed significant gender differences for one variable, concept of academic ability, with females scoring significantly higher than males.

These results are partially consistent with previous research findings. For example, Carter and Wojtkiewicz (2000) found that, despite the general hypothesis that male children are advantaged compared to female children in various ways in the home, female children received more attention from their parents than male children.

They argued that these parents may have been more involved with their daughters because of the current emphasis on educational attainment for females. They argued that this emphasis is largely due to current “social conditions”, such as delayed marriage and higher divorce rates, which require females to be capable of supporting themselves rather than relying on a husband.

Although Gama (1986) suggested that there is no basic structural difference in achievement motives between the two genders, Liping (2000) found that female students scored significantly higher on individual-orientated achievement motivation than on social-orientated achievement motivation compared to male students. Recently, Martin (2004) concluded from his study that, although females have higher levels of motivation than males on a number of different dimensions, that their fundamental motivation orientations are not significantly different qualitatively.

Previous research has shown that males are more likely to attribute success to ability and failure to bad luck, while females are more likely to attribute success to good luck and failure to lack of ability (e.g., Dweck, 1986; Eccles et al., 1984). Bartal (1978) found that females tend to take personal responsibility for their failures but not for their success. However, these trends have not been evident in all studies, and in many instances the results are mixed and equivocal (Frieze et al., 1982; Parsons, 1983). Previous research has also shown that females are more likely than males to exhibit the helpless pattern of attributions (Dweck et al., 1978). It has been argued that females place less emphasis than males on motivational factors as determinants of failure, and are more likely than males to blame a lack of ability for poor performance (Dweck & Repucci, 1973; Nicholls, 1975).

Studies have also shown that in comparison to males, females tend to have lower estimates of their abilities, performance, and expectations for future success, even when they actually perform as well as and better than males (Crandall, 1969; Meece et al., 1982; Parsons et al., 1976). Not all studies have found gender differences in self-evaluations. However, of those that have found a gender difference, it has usually been in the direction of females downplaying their achievement and abilities compared to males (Brown, 1998).

While some early studies have found that male high school students have higher aspirations than their female counterparts (e.g., Fortner, 1970), other studies have found that females have higher aspirations than males (e.g., Farmer, 1985), and others have found no gender differences in aspirations (e.g., Tittle, 1981). These inconsistent findings may exist because gender differences in achievement are influenced by a variety of personal and situational factors (Farideh, 1996).

The results of this study do not substantiate the long held view that females are less confident about their academic ability compared to males. However, it is possible that one gender is more or less likely than the other to communicate their confidence about their academic ability to others. This remains an unclarified issue.

Grade Differences in Students' Achievement-Related Cognitions

It was hypothesised that students in Years 7 and 8 would score significantly higher than students in Years 9 and 10 and Years 11 and 12 on social-orientated achievement motivation, concept of academic ability, educational and occupational aspirations, and perceptions of parents' educational and occupational aspirations for them; and significantly lower on individual-orientated achievement motivation.

This hypothesis was only partially supported by the results. The MANOVA results showed significant grade differences for five variables: social-orientated achievement motivation, individual-orientated achievement motivation, concept of academic ability, occupational aspirations, and students' perceptions of their parents' occupational aspirations for them.

These results are partially consistent with previous research findings. For example, previous research has generally shown that younger students' expectations for success are overly optimistic, so that they nearly always think that they will do well on a task. As they proceed through secondary school, students' expectations begin to correspond more closely to their previous performance, so that following success their expectations increase, and following failure their expectations decrease (e.g., Parsons & Ruble, 1977). Wigfield and Eccles (2000) argued that expectancies for success appear to become more accurate or realistic as children get older, which generally means that their perceptions become less positive and optimistic as they get older.

Studies have shown that students become more extrinsically motivated and less intrinsically motivated as they get older (e.g., Harter, 1981a, 1981b), and while younger students generally have positive values towards education, as they get older they begin to value certain school activities more and overall education less (Wigfield, 1984). Other research has shown that as children get older, their interests and attitudes toward school deteriorates (Eccles & Wigfield, 1992; Eccles et al., 1998; Hoffman & Haussler, 1998). Research has also indicated that students who perform poorly at school and believe that their performance is due to lack of ability, tend to deflect the impact of their poor performance on their self-esteem by deciding that

education and achievement are not important (Eccles et al., 1984; Dweck, 2002a, 2002b).

Researchers have argued that the transition from primary school tends to cause a decrease in students' perceptions of their academic competence, academic motivation, intrinsic interest in learning, and school performance (Anderman & Anderman, 1999; Brush, 1980; Eccles & Midgley, 1989, 1990; Eccles et al., 1984; Harter, 1981a, 1981b; Pajares & Valiante, 1999; Simmons & Blyth, 1987).

Kao and Tienda (1998) showed that educational aspirations declined between Grades 8 and 10 and then increased by Grade 12. Alexander and Cook (1979) argued that the pattern from Grade 8 to 10 is due to changes that transform 'abstract ideas' into 'likely possibilities', and the pattern from Grade 10 to 12 is due to a 'compositional transformation' and a greater likelihood that aspirations represent an account of concrete plans. However, Farmer (1983) found that Grade 9 students scored similarly to Grade 12 students on aspirations.

The results of this study confirm that, when compared to junior students, senior students are more individually-orientated to achieve, have higher perceptions of their academic ability, and have lower occupational aspirations. However, it is important to acknowledge that developmental inferences cannot be made given the between-subjects design of the present study.

Phase 2

Identity Status Differences in Students' Achievement-Related Cognitions

It was hypothesised that students at the identity diffusion stage would score significantly higher than students at the identity achievement stage on social-orientated achievement motivation, concept of academic ability, educational and occupational aspirations, and perceptions of parents' educational and occupational aspirations for them; and significantly lower on individual-orientated achievement motivation and that these differences would be more pronounced for students in Years 11 and 12 compared to students in Years 7 and 8 and Years 9 and 10.

This hypothesis was only partially supported by the results. The MANOVA results showed that most of the identity status differences in students' achievement-related cognitions were in the Year 11 and 12 group. They included concept of academic ability, educational aspirations, and students' perceptions of their parents' educational aspirations for them. This likely reflects the greater demands placed on senior high school students. Years 11 and 12 are a time when decisions regarding educational and occupational plans are made (Kouzma & Kennedy, 2002, 2004; Sewell, Haller, & Portes, 1969). There were also significant identity status differences in social- and individual- orientated achievement motivation for the Year 7 and 8 group in the present study. This may, at least in part, reflect the transitional stage of junior high school students.

These results are partially consistent with previous research findings. For example, Waterman and Waterman (1970) found that adolescents at the identity foreclosure stage were more comfortable at school and held more positive attitudes toward their educational experiences, compared to the uncommitted, searching, and

experimenting adolescents at the identity moratorium stage, who evaluated their educational experience negatively. Orlofsky (1978) showed that those at the identity achievement and identity moratorium stages (non-student population) reported a higher level of achievement motivation compared to those at the identity foreclosure and identity diffusion stages. Wallace-Broschius et al. (1994) reported that identity achievement was negatively related to career indecision, but that identity moratorium and identity diffusion were positively related to career indecision. Similarly, Vondracek et al. (1995) found that adolescents at the identity achievement stage scored significantly lower on career indecision compared to adolescents at the identity moratorium, identity foreclosure, and identity diffusion stages.

Berzonsky and Kuk (2000) found, in a study of over 300 college students in the United States of America, that differences in identity statuses accounted for significant variation in students' academic autonomy and educational involvement. Students characterised as being identity achieved or identity foreclosed were more firmly committed and goal directed than students in the identity moratorium or identity diffusion statuses. Berzonsky and Kuk (2000) have indicated that a mature identity status provides a sense of purpose and direction, which presumably applies to adolescents' academic life, as well as other aspects of their life.

The results of this study suggest that identity status is an important variable in examinations of students' achievement-related beliefs. More specifically, identity status differences in students' achievement-related beliefs appear to be uniquely different in junior and senior high school students. However, the results of this study do not clarify how these identity status differences relate to school transitional periods.

Overall Group Differences in Achievement-Related Variables

It is interesting that [the largest](#) differences in students' achievement-related cognitions were grade and identity status related. This suggests that much of the variability in achievement-related cognitions measured in this study may be environmental (i.e., grade differences) and/ or developmental (i.e., age differences and maturation) in nature.

The relatively large contribution of grade to the variance in students' achievement-related cognitions is somewhat surprising. It was expected that cultural background would make at least some significant contribution to the variance in social-orientated achievement motivation given the literature that this variable is related to the concepts of individualism and collectivism (Yang & Yu, 1988; Yu & Yang, 1989, 1991).

It is interesting that socioeconomic background did not make a significant contribution to the variance in achievement motivation orientation, especially given the literature pertaining to the direct and indirect role of socioeconomic background in shaping students' values towards education and success (Birenbaum & Kraemer, 1995; Douvan, 1975; Maltby et al., 1995). Despite several previous studies indicating that socioeconomic background accounts for small or inconsistent amounts of variance in measures of achievement (Adams & Singh, 1998; Johnson, 1992; White, 1982), in the present study socioeconomic background was a significant predictor of aspirations. This result is consistent with Trusty's (1998) finding that socioeconomic background was the strongest predictor of adolescents' educational expectations. The results also suggest that socioeconomic background may play a direct and/ or indirect role in shaping students' aspirations. This may be through the resources available to

some students and/ or the support they perceive available to them (Bronfenbrenner, 1979; Vondracek et al., 1986).

Overall, the results showed that grade [level](#) was especially important in explaining achievement motivation orientation, and the variable socioeconomic background was especially important in explaining students' educational and occupational aspirations and students' perceptions of their parents' educational and occupational aspirations for them. This information may be especially useful to educators and school counsellors. For example, educators may structure their teaching and learning environments differently for students at different Year levels, and school counsellors may consider the role of students' socioeconomic background in their careers planning programs.

In [summary](#), cultural background did not emerge as important as expected in explaining students' achievement-related cognitions particularly given the plethora of research in the psychological literature (e.g., Carpenter, 2000; Clifton et al., 1991; Fergusson et al., 1991; Good & Brophy, 1994; Kao & Tienda, 1998; Marjoribanks, 1996a, 1996b, 1999, 2002a, 200b; Triandis, 1995a, 1995b, 1995c). Rather, grade was one of the more important variables in the present study. Closer examination of the data shows that individual-orientated achievement motivation and concept of academic ability were significantly higher for senior students compared to junior students, and social-orientated achievement motivation and aspirations were significantly higher for junior students compared to senior students (although this data reflects between-group differences). The question, then, is what causes changes in students' achievement-related cognitions. The literature offers some possible explanations.

School Transition

Stage-environmental fit theory has been used to explain student motivation (Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, & Maclver, 1993; Eccles, Wigfield, Midgley, Reuman, Maclver, & Feldlaufer, 1993). The basic tenet of this model is that students have different combinations of psychological needs at each level of their development, and unless these needs are satisfied, academic achievement and an appreciation of learning will suffer. It is not surprising, then, that much research has focused on the impact of school transition (Covington & Dray, 2002). Several researchers have argued that the transition from primary school to secondary school causes a decrease in students' perceptions of their academic competence, academic motivation, intrinsic interest in learning, and school performance (e.g., Anderman & Anderman, 1999; Brush, 1980; Eccles & Midgley, 1989, 1990; Eccles et al., 1984; Harter, 1981a, 1981b; Pajares & Valiante, 1999; Simmons & Blyth, 1987). Harter et al. (1992) argued that students face the demands of a school culture that increasingly reinforces an extrinsic motivational orientation, especially through grading practices. As a result, students' educational focus shifts to the 'products of learning', and their interest in the learning process tends to decline.

Wigfield and Eccles (2002) suggested that changes in students' competence-related beliefs and achievement values can be explained in two ways. (1) They argued that because children become better at understanding, interpreting, and integrating the evaluative feedback they receive from others, and engage in more social comparison with their peers, they tend to become more accurate or realistic in their self-assessments (which leads some children to become more negative). (2) They argued

that because school environments change in ways that make evaluations more salient and competition between students more likely, some children's self-assessments will decline.

The decline in motivation and performance for many children during the transition from elementary school into middle school has been suggested to be caused by physiological and psychological changes associated with puberty (Anderman & Midgley, 1998). This assumption has been challenged by research that suggests that the nature of changes in motivation for students in middle school depends on characteristics of the learning environment (Midgley, 1993). Ryan (2001) noted that adolescence marks the beginning of a downward trend in academic motivation and achievement, suggesting that such declines are the result of the 'storm and stress' that accompanies adolescence, as well as the context in which these developmental changes unfold.

It is important to indicate that much of this literature has been in the context of the American school system. In Australia, most students are in the same high school from Year 7 to 12. However, there are some high schools which have separate junior high school campuses (i.e., Years 7 to 10) and senior high school campuses (i.e., Years 11 and 12). In America, most high schools have separate campuses for middle school students (i.e., Grades 7 and 8) and senior high school students (i.e., Grades 9 to 12). In addition, there are differences in the costs of schooling both between and within countries. For example, Catholic high school fees are generally higher than public high school fees in Australia.

Overall, the research to date (including the present research findings) do not clarify whether the new school setting, the new grade, or a combination of both are

responsible for changes in students' perceived competence and motivation (Harter et al., 1992). The results of this study indicate that further examination of grade and/ or age differences in students' achievement-related cognitions is warranted. It is then that intervention strategies may be targeted. It is especially important to tailor programs to meet the unique needs of students at various Year levels. The current literature offers some recommendations for implementing intervention strategies, particularly in relation to school transition.

School Transition and Intervention Strategies

The transition from primary school to high school is associated with concomitant changes in young adolescents' physical environment, academic requirements and expectations, and social relationships with teachers and peers (Wampler, Munsch, & Adams, 2002).

Fraser (1997) argued that several typical characteristics of junior high school conflict with the wants and needs of early adolescents. (1) *Teachers exert greater control*. Early adolescents seek autonomy. But when they move into junior high, they often find teachers who tend to place greater emphasis on control and discipline. (2) *Student-teacher relationships are less personal*. Early adolescents typically see their relationships with high school teachers as less personal and less positive. (3) *Less small group attention*. Early adolescents find changes in the way they are taught in high school, which tend to increase social comparison, concerns about being evaluated, and competitiveness. (4) *Work requires lower level skills*. At a time when their ability to use higher level cognitive skills is increasing,

junior high school students may get work that requires skill levels lower than those required in primary school (p. 1).

Schumacher (2003) stressed, *“The transition into middle level schools is accompanied by intellectual, moral, social, emotional, and physical changes taking place in at least part of the transition group at any given time. Students making the transition into middle level schools need to receive assistance prior to, during, and after the move so that their social, psychological, and academic well-being is not compromised. Effective and comprehensive transition programs help (1) build a sense of community; (2) respond to the needs and concerns of the students; and (3) provide appropriate, faceted approaches to facilitate the transition process”* (p. 2).

These and other stressors associated with school transition can be minimised when the new environment is responsive to each particular age group (Schumacher, 2003). In addition, Fraser (1997) argued that early adolescents tend to cope better when they use “approach” rather than “avoidance” strategies. Approach strategies, such as seeking support to solve a problem, are linked to positive outcomes, such as higher self-concept. Hence, teaching students to cope effectively with stressors is critical.

Mizelle (2003) suggested that educators can ease students' transition in high school by providing challenging and supportive school environments and by designing transition programs that address the needs of students and their parents and that facilitate communication between grade level educators. Several researchers have also argued that providing young adolescents with a challenging and supportive school experience is equally important in helping them make such transitions (Belcher & Hatley, 1994; Mizelle, 1995). MacIver (1990) maintained that a high school

transition program should include a variety of activities that provide students and parents with information about the new school, provide students with social support during the transition, and bring school personnel together to learn about each other's curriculum and requirements.

Eccles, Midgley, and Adler (1984) argued that young adolescents experience a larger, more impersonal, more competitive, and grade-oriented environment in high school. Schumacher (2003) claimed that it is important to emphasize mastery and improvement in high school, rather than relative ability and social comparison, given the research evidence that middle schools tend to stress relative ability and competition among students more, and effort and improvement less which tends to lead to a decline in task goals, ability goals, and academic efficacy. Anderman and Midgley (1996) suggested that group work, emphasizing effort and improvement, and supporting student choices are critical in implementing a more positive task-focused goal structure. McInerney, Hinkley, Dowson, and Van Etten (1998) concluded from their study that school programs should emphasise mastery goals and give students an opportunity to be engaged in learning, irrespective of cultural background. They also argued that performance goals should be de-emphasised because they are relatively weak motivators for all students.

It is also important to note that in the present study, most of the identity status differences in achievement-related variables were in senior students. Given this trend, the question then is how schools (secondary and tertiary) can promote identity development in their students. The results of the present study suggest that this line of enquiry is pertinent for the development of a positive academic orientation in students and in enhancing or facilitating student success. The results also suggest that identity

status may be useful in identifying students at-risk of achievement problems. Thus, educators may be better able to structure learning environments and support systems for these students. More specifically, programs and intervention efforts might consider targeting students at the identity-diffusion stage who displayed a more negative achievement orientation. It is important to keep in mind that whilst the primary function of schools is teaching and learning, that much of adolescents' psychosocial development occurs in the context of school.

Contribution to knowledge

At the outset of this thesis, it was argued that the relative contribution of culture, socioeconomic background, gender, grade, and adolescent identity status to achievement-related variables was unknown. Thus, it was argued that a thorough investigation of group differences in achievement-related variables was warranted.

The present study explored achievement-related variables in a diverse high school student population residing in Metropolitan Melbourne, Australia. This study represented a major research effort aimed at identifying group differences in students' achievement-related cognitions, and at examining the proportion of variance in students' achievement-related cognitions accounted for by group variables.

The need to account for group differences in achievement-related variables is particularly important in order to identify at-risk groups (i.e., at-risk of achievement problems), and to better structure learning environments and support systems for these students, in an effort to enhance or facilitate their achievement prospects (Lavery, 1999). Ponsford and Lapadat (2001) stressed, “[schools can] use their knowledge of students' views and beliefs to identify support strategies and to modify the educational

environment” (p. 140). Stipek and Weisz (1981) also believed that if achievement-related variables are more amenable to change than intelligence, then achievement might be enhanced indirectly through practices that positively influence the development of these achievement-related cognitions in students. This may be particularly important for students who are at-risk of low educational achievement. Dowson and McInerney (1998) argued, “relationships between students’ school perceptions, motivation, cognition and achievement; vary as a function of their age, gender, cultural, and socioeconomic backgrounds. There is, therefore, an implied need to tailor motivational and cognitive programs, aimed at enhancing students’ achievement, based on relevant student differences. This, of course, complicates the issue somewhat. However, it is possible to suggest that the dividends for paying appropriate attention to relevant student differences may well be worth the effort involved in tailoring achievement-enhancing programs to students’ differing cognitive and motivational profiles” (p. 19).

It is likely that collaborative efforts among schools, teachers, parents, students and even community organisations are required to deal with issues of differences in students' achievement-related cognitions and to develop appropriate activities to support students. Epstein and Sanders (2000) argued that educators, parents, and members of communities should combine efforts to create a coherent program to help students succeed at school. There are several intervention approaches/ strategies which may be used to help some students. Whilst some of these strategies can be directed towards individuals, a transactional view may also be adopted at the school, family, and community levels.

Attributional retraining may be a potentially useful strategy for some students. This intervention teaches students to attribute their learning difficulties to factors that are under their control, such as effort expenditure. Research has shown that attributional retraining programs can be effective at changing students' causal attributions to failures and successes (e.g., Borkowski et al., 1988; Chapin & Dyck, 1976; Dweck, 1975). McInerney and McInerney (1998) argued, "*Classrooms and schools must promote the development in children of a positive sense of self as a student and foster programs that stress goal setting, emphasize mastery goals, and provide students with experience in monitoring progress toward goal achievement. Unfortunately many schools and classrooms set performance and extrinsic goals for students through competition and social comparison, ability grouping and tracking, and public evaluation of performance and conduct based on normative standards of performance. Those forms of evaluation give children little opportunity to cooperate and interact with each other in shared learning tasks or to choose the tasks that are of most interest and relevance to them and in which they would be more intrinsically motivated. In contrast, classrooms and schools that emphasize mastery goals are likely to group students according to interests and needs; allow flexibility in choice of activities and in opportunities for student initiative and responsibility; define success in terms of effort, progress, and improvement; focus on the value and interest of learning; and offer opportunities for peer interaction and cooperation*" (p. 365). Martin (2004) also agreed, "*Developing students' self-belief involves restructuring learning so as to maximize opportunities for success (McInerney, 2000; Schunk & Miller, 2002), addressing students' beliefs about themselves and their academic capacities (Beck, 1976; Meichenbaum, 1974; Wigfield & Tonks, 2002), and*

developing their capacity to engage in effective goal-setting (Locke & Latham, 2002)” (p. 143).

Okagaki and Frensch (1998) warned that we cannot assume that what works for one group will necessarily work for another. They argued that disregarding the social and economic contexts in which students live may make intervention strategies that work in some family contexts ineffective in others. In the present study, grade and socioeconomic background made the largest contribution to the variance in various achievement-related variables, while cultural background made the lowest contribution.

A plethora of research attempting to uncover a link between social group variables and achievement-related variables exists in the literature. However, many studies have typically focused on one or two classes of influences (Farmer, 1985). It was argued early in this thesis that it is likely that the combined influence of several factors will account for substantial variance, and that a multidimensional approach should be adopted and utilised in the study of students' achievement-related cognitions (Farmer, 1985). The results of this study support this notion, showing that several variables were important in accounting for significant group differences in students' achievement-related cognitions.

To date, many of the reported findings on achievement-related cognitions come from Northern Hemisphere sources, mainly from samples in the United States of America, and many of the Australian studies were conducted during the 1980s when a minority of the student population completed secondary and post-secondary schooling (Hemmings, 1996). Marjoribanks (2002b) argued, “*a set of propositions applicable in one international setting may not easily be generalised to another country*” (p. 2).

The results of this study provide a detailed account of significant group differences in Australian high school students' achievement-related cognitions.

Study limitations

The results of this study should be considered in light of the following limitations:

School characteristics

This study involved five large randomly chosen secondary schools from across Metropolitan Melbourne, Australia. Hence, the results of this study are limited to this context given that students' achievement-related cognitions may be affected by several factors related to the schools themselves, including learning environments, curriculum, and teaching methods just to name a few. This is important, given that McNerney (1989, 1991, 1992) stressed that “external forces” in the school environment can impact on whether or not students' motivation is translated into actual behaviour. In addition, although family socioeconomic background was measured in the present study, school socioeconomic background may be different because it relates to factors such as educational facilities and resources and even school reputation in the community. Several researchers have argued that there are also important differences between Catholic high schools and other schools (e.g., Byrk, Lee, & Holland, 1993; Cuttance, 1998; Mok & Flynn, 1997; Rutter, Maughan, Mortimore, Ouston, & Smith, 1979). Byrk et al. (1993) argued that, because Catholic high schools are voluntary communities, their social relations are characterised by

trust, which, in turn, is a form of social capital. In addition to these school differences, a higher percentage of students from Catholic schools may reflect a higher number of students from Catholic backgrounds, although religious background was not measured in the present study. Cuttance (1998) concluded from his study of Australian schools that less than 10% of the variance in students' outcomes is related to school differences. He called for more research into within-school differences because differences in students' outcomes are more likely to be related to classroom differences. It is pertinent to acknowledge that the present study was a preliminary examination of achievement-related variables in different grade populations and that multiple testing should be a consideration in interpreting the results.

Measurement of cultural background

In this study, cultural background was defined by the country of birth of participants' parents. This was important given that all participants in this study were required to be born in Australia. Participants born outside of Australia were excluded from the study because of problems associated with acculturation and adjustment (Berry et al., 1987; Ritsner & Ponizovsky, 1999) that may have potentially affected the results. Participants with parents born in two different overseas countries were excluded from the study because of cultural identity issues (Berry, 1990, 1997; Gans, 1979; Gordon, 1964; Phinney & Divich-Navarro, 1997) that are beyond the scope of this study.

It is important to note that Fuligni et al. (1999) argued that even within a society that emphasises adolescent autonomy and independence (such as Australia), adolescents from families with collectivist traditions seem to retain their parents'

values. Notions of culture cannot always be classified into a theoretical definition applicable for all members equally. Perhaps cultural identity may have been an important variable to measure in the present study. In addition, although some cultural backgrounds in the present study were collective and others were individualist, a pattern of differences related to students' achievement-related cognitions did not emerge in the results. For example, no significant differences emerged between Australian and Vietnamese groups for any of the achievement-related variables measured despite Australia being an individualistic country and Vietnam being a collective country. It is also possible that in some cultures, members identify with their religion more so than their country of birth or their parents' country of birth.

Measurement of socioeconomic background

In the present study, socioeconomic background was defined by a constellation score of the educational attainment, occupation, and income of participants' parents.

There are several different ways of measuring socioeconomic background, which are not limited to parental educational attainment, occupation, or income (for example, may include occupational prestige). However, there is no general consensus in the literature of the most appropriate way of measuring socioeconomic background (a brief review has been outlined in Chapter 1. Introduction, Measurement of Socioeconomic Background). Hence, the results of this study pertaining to socioeconomic background differences are limited to the measurement employed.

Measurement of students' perceptions

In the present study, students' perceptions of their parents' beliefs were examined. These included students' perceptions of their parents' achievement values, students' perceptions of their parents' evaluation of their academic ability, and students' perceptions of their parents' educational and occupational aspirations for them (this method has been justified by a brief review outlined in Chapter 1. Introduction, Measurement of Students' Perceptions). It was beyond the scope of this study to ask students' parents to participate by completing questionnaires. However, future research may wish to consider comparing students' perceptions with their parents' actual responses. It is possible that discrepancies between students' perceptions and parents' actual beliefs exist.

Measurement of achievement

A major limitation of the present study was that actual school/ academic achievement was not measured. This may have been defined in several ways such as grades in a particular subject such as English or average grade as reported by students or teachers. Inclusion of this variable would have clarified the link among the achievement-related cognitions measured in this study and educational outcomes in the context of the research sample. It is important to indicate, however, that a plethora of research has demonstrated these links in various groups.

Data analyses

Although the sample size in the present study was quite large, there were several comparative groups with varying cell sizes which may have affected the overall results. In the present study it was not possible to conduct some analyses on specific stratum. For example, it may be interesting to see whether the same gender patterns emerge among each cultural group. Anecdotal evidence suggests that there are clearer, or larger, differences among males and females in some cultures particularly with respect to achievement. It is important to indicate, however, that every effort was made to ensure that cell sizes were appropriate for the analyses conducted in the present study and that power was maintained at a suitable level at all times. This was especially important given the total number of analyses conducted overall (i.e., multiple comparisons). In addition, the focus of this study was the examination of group differences. Hence, a between-groups design was employed. Future research should consider a within-groups design which may be especially relevant to the examination of grade differences. This would necessitate a longitudinal research design which would allow for more sophisticated data analysis methods to be employed (such as path analysis).

Statement of significance

A unique aspect of this study was that a number of achievement-related variables were examined together in a diverse high school student population in Metropolitan Melbourne, Australia. This was important given the increased diversity of the Australian population, with one in four students now estimated to be from a non-English speaking background and more students continuing their education to

beyond high school (Marks et al., 2000). The results of this study provide us with a substantial amount of information about this new population of high school students in Australia, of whom we previously knew very little (Hemmings, 1996).

In Australia's National Goals (1999), it is stated that schooling should be “socially just”, so that students' outcomes from schooling are free from the negative effects of discrimination based on culture, socioeconomic background, or gender, just to name a few; that the learning outcomes of educationally disadvantaged students improve and, over time, match those of other students; and that all students have access to high quality education necessary to enable the completion of school education to Year 12.

At the outset of this thesis it was argued that in order for these objectives to be fulfilled, the critical first step is to identify group differences in students' achievement-related cognitions in order to increase our understanding of such inequalities. Whilst this objective has been accomplished in the context of this research, it must be acknowledged that further research is required to replicate the findings of this study using samples from across various states in Australia. Marjoribanks (2002a) argued, *“if we are to understand in a more meaningful manner how families and schools influence students' attainment, then there should be (a) a continual interplay between theoretical and empirical analyses and (b) where possible, qualitative and quantitative approaches should blend together such that the findings from the two orientations naturally enrich each other”* (p. 23).

Summary and Conclusion

Continued research in the area of group differences in students' achievement-

related cognitions is important. The results of this study should be replicated by future researchers to determine their robustness. Future investigations should consider the following:

(1) A longitudinal within-groups design of differences in students' achievement-related cognitions, particularly in examining grade and identity status differences. This would allow for a meaningful analysis of the developmental trajectory of students' achievement-related cognitions. This information may be used to target intervention programs and strategies at specific points of students' school development.

(2) Examining differences between Australian-born students (with immigrant parents) and overseas-born students (with immigrant parents), as well as students with both parents born overseas and students with one parent born overseas, in relation to achievement-related cognitions. This would help clarify the role of cultural background in students' achievement-related cognitions in an Australian context. This information may be used to identify specific groups of students at-risk of achievement problems.

(3) Investigating intra-group differences (among cultural background, socioeconomic background, gender, grade, and identity status) in students' achievement related cognitions. This would further elucidate the role of sociodemographic differences in students' achievement-related cognitions, and allow for more rigorous data analysis to be conducted. This appears to be lacking in the psychological literature.

(4) Measuring cultural identity and religion as possible intervening variables in explaining differences in students' achievement-related cognitions. This is needed in

order to control for potentially confounding variables, and would allow for a more rigorous model of differences in students' achievement-related cognitions to be tested.

(5) Measuring parents' actual educational and occupational aspirations for their children. This would provide a more accurate evaluation of the role of parents' views in students' own achievement-related cognitions. This information may be used in the planning of intervention programs and strategies.

(6) Exploring differences between schools, such as Catholic and non-Catholic high schools. This would help identify the importance of type of school in the development of students' achievement-related cognitions, and increase knowledge in this under-represented area of research.

In summary, the results of this study showed that most of the significant differences in students' achievement-related cognitions were grade and identity status related. This suggests that much of the variability in achievement-related cognitions measured in this study may be environmental (i.e., grade differences) and/ or developmental (i.e., age differences and maturation) in nature. These results are important in order to identify at-risk groups (i.e., at-risk of achievement problems) and to better structure learning environments and support systems for these students, in an effort to enhance or facilitate their achievement prospects. This area of investigation is the critical first step in the design and implementation of evidence-based practices in Australian high schools.

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APPENDICES

Appendix 1.

Demographic Questionnaire

Appendix 2.

Objective Measure of Ego Identity Status

Appendix 3.

OMEIS SPSS Scoring Commands

Appendix 4.

Achievement Motivation Orientation Scale

Appendix 5.

Brookover Concept of Academic Ability Scale

Appendix 6.

Educational and Occupational Aspirations Scale

Appendix 7.

Victoria University Human Research Ethics approval form

Appendix 8.

Victorian Department of Education Ethics approval form

Appendix 9.

Catholic Education Office of Victoria Ethics approval form

Appendix 10.

Participant Information Form

Appendix 11.

Participant & Parental Consent Form

