

THE EDUCATIONAL PATHWAYS AND OUTCOMES OF
ETHNIC AND LINGUISTIC MINORITY STUDENTS

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ABSTRACT

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This study was designed to investigate the educational pathways and outcomes of 184 newly-arrived limited English proficient students attending high schools in the Vancouver School District during the years 1996-2003. The study used student archival data from the District Reception and Placement Center's ESL database and the Vancouver School Board's (VSB) database. The graduation and dropout rates for this cohort were determined and the educational pathways to both graduation and non-graduation status were examined. Using the initial analysis of the data, an educational pathways and outcomes model was produced and hierarchically ranked. For this cohort of participants, seven educational pathways were found. These pathways are: (1) student permanently dropped out; (2) student stayed in mainstream high schools for five years, did not acquire sufficient course credits to graduate, and subsequently did not register for any additional courses that could have been taken at adult learning (ADL) centers in the VSB district during the time frame of this investigation (seven years); (3) student dropped out of mainstream high school, registered for courses at an ADL center and by the end of this study had still not managed to acquire sufficient course credits to graduate; (4) student took courses in mainstream high schools for five years, did not acquire sufficient course credits to graduate, subsequently attended an ADL center and by the end of this study had still not managed to acquire sufficient courses to graduate; (5) student dropped out of mainstream high school,

· subsequently took courses at an ADL center, and graduated within the seven year duration of this study; (6) student took courses for five years in mainstream high schools, did not acquire sufficient course credits to graduate, subsequently attended an ADL center and graduated; (7) student graduated from mainstream high school.

Variables studied were based on previously documented individual, institutional and academic indicators in the academic achievement and dropout literature. Additional variables percentage of ESL students in the school population, immigration class, language streaming (English language proficiency at initial school registration), number of years taking ESL, and school ranking were included for their potential as future predictors of high school graduation and non-graduation. Results indicated that the overall graduation rate for this cohort was 64.1%. This number represents students who graduated from both mainstream high schools and adult learning centers. The permanent dropout rate was found to be 14.1%. More than a third of the participants were not able to acquire a high school diploma in the five year stipulated time frame allocated for a high school career. Based on various tests using Chi-square and ANOVA, several relationships and significant group differences were found. Immigration class and the percentage of ESL students in individual school populations were found to be significantly related to educational outcomes.

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DEDICATION

This work is dedicated to English as second language students across Canada, whose struggle with the language and culture has also been my own, and whose hopes and dreams of success depend in large part on the learning environment they encounter.

Chapter I

Introduction

1.1 The Problem

In an era of cultural and economic globalization, industrial and post-industrial countries alike have focused policy and institutional investment in the production of educationally-acquired human capital. Generally, in North America, a high school diploma is the minimum qualification required for an entry level position in the service or manufacturing sectors of the economy. Similarly, universities and colleges require high school diplomas or their equivalents as a prerequisite for entry. Individuals without high school diplomas often do not find work or gain entrance to colleges and universities. Of those that do find employment, a significant difference in income levels has been found. Miao and Haney (2004) report that the median income for students with a high school diploma regardless of the route taken, that is, mainstream high school graduation or through a General Educational Development (GED) test, was \$24,656 in comparison to \$18,445 for non-graduates. The high numbers of adolescents without a high school diploma have led educators, researchers and government agencies to be concerned about the number of students who are not meeting the criteria for acquiring a high school diploma. Furthermore, research findings indicate that there are significant differences in the dropout rates for various socio-linguistic and racial groups. Although numerous variables have been identified for Black, White and Hispanic student populations in various sites, few studies have focused on ethnic and linguistic minority adolescent learners who are also English language learners.

1.2 Background of the Problem

Adolescents from the Hispanic and Native American communities tend to have the highest number of students leaving school prior to graduation. On the other hand, the National Center for Education Statistics (2001) reported that until 1998, due to the small sample size of Asian/Pacific Islanders in schools, students from these countries and backgrounds have not been included in the dropout statistics. Reasons given for this exclusion are that reliable estimates of status dropout rates were not feasible. Natriello, McDill and Pallas (1990) observed that governmental data gathering efforts have often combined Black and Asian groups together. Furthermore, children of Asian and Pacific Islander cultures are not seen “as being as educationally disadvantaged as the population of black and Hispanic children” (p.18). The failure of not having various categories for adolescents from other countries can result in inaccurate estimates of the number of dropouts who have been categorized in the United States under a simplistic classification of Whites, Blacks and Hispanics. More importantly, these non-identified adolescents become the ‘invisible’ group for whom equal access to resources may be passed over. Further, even fewer studies have focused solely on the educational outcomes of ethnic and linguistic minority adolescent English language learners (Derwing, DeCorby, Ichikawa, & Jamieson, 1999; Radwanski, 1987; Sefa Dei, Mazzuca, McIsaac, & Zine, 1997; Watt & Roessingh, 2001). Results from these studies indicate high ESL student dropout rates for which causes could include variables such as language ability, poverty, trauma, and the struggle to consolidate various aspects of social identity into a core identity that will be acceptable and viable to both themselves and the general population in the host country. In addition, while

coping with these issues, these adolescents are also simultaneously attempting to achieve an academic performance score that will equal the expected norm (Collier, 1992).

1.3 Purpose of the Study

In order to identify and better understand the differences between and within various adolescent ethnic and linguistic minority English language learners, this study examined some of the individual, school administrative and academic indicators that appear to influence the differential educational pathways and outcomes of adolescent students in a large urban school district in Vancouver, Canada.

1.4 Background and Context

In 2002, results from a longitudinal study conducted by Gunderson indicated a 60% disappearance rate for adolescent English as Second Language (ESL) students in the Vancouver School District, Canada. Findings from another Canadian study indicated that 73% of the ESL students enrolled in a school district in Calgary had dropped out (Watt & Roessingh, 2001). Furthermore, Watt and Roessingh (2001) found differential levels of dropouts based on the English ability of the student. These researchers found that ESL students placed in the beginner levels of English language support programs tended to drop out of high school at higher rates than those who were in the advanced language support programs. Other research found similar trends with regard to ESL adolescent students' dropout rates (Derwing, DeCorby, Ichikawa, & Jamieson, 1999). In the United States, similar results have been found for adolescent Black and Hispanic groups.

The current literature presents a discouraging picture of the educational opportunities for English language learners (ELLs). The literature focuses to a large degree on dropout rates and some of the different correlates that may influence non-graduation currently being

encountered by ELLs. Few studies have explored the association between demographic, institutional and academic indicators and the successful educational outcomes of the immigrant adolescent ELL. Second, because of the methods employed to calculate ELLs dropout rates (Derwing et al., 1999; Watt & Roessingh, 2001), more often than not, the implicit message is that these students are permanent dropouts. However, this is a simplistic view of the educational options presented to students in our contemporary 'life perspective.' In fact, dropping out is not a dichotomous variable (yes/no) from an educational pathways and outcomes perspective: a student can drop out of regular high school and never come back (permanent dropout), a student can drop out of regular high school and come back through adult education (temporary dropout) and still not graduate, or a student can drop out of regular high school and come back through adult education and graduate.

Although previous research has identified various correlates that are associated with students dropping out of school, the possibility exists that students with similar correlates remain in school and finally graduate from high school programs.

1.5 Research Questions and Significance

Mainstream studies on dropouts have identified various individual, familial and institutional correlates of adolescents' premature school leaving. Some of the large American studies have relied on data from national databases such as the High School and Beyond (HSB) survey and the National Educational Longitudinal Study (NELS). In Canada, the federal government has used national census data and surveys to investigate the correlates of dropping out. However, few of these studies have focused on the dropout and graduation rates for solely English language learners from the various ethnic and linguistic minority groups that have either recently settled in the United States or in Canada. Those

that have, have either investigated a single ethnic or racial group (Sefa Dei et al., 1997) or have investigated ELLs dropout rates using a single variable (Derwing et al., 1999; Watt & Roessingh, 2001). For English language learners, the factors associated with non-high school graduation become more complex when one takes a wider lens to the problem. In order to better understand some of the factors that may influence linguistic and ethnic minority adolescent learners to drop out of school, further refinement is needed to distinguish the correlates of premature school leaving for various groups of adolescent ethnic minority ELLs.

This study was designed to identify some of the possible correlates of the educational outcomes of ethnic and linguistic minority students, in particular English language learners. It is one of the few studies designed to examine the effects of immigration status on entry to the country and streaming according to language ability. In addition, this study tracked ELL's beyond high school to investigate the educational pathways and outcomes for these students. This knowledge will significantly add to and extend the current body of knowledge by providing researchers, policy makers, and educators' critical information in the education of minority groups. The study was guided by the following questions.

Research Question One:

In what ways do individual and institutional factors affect the educational pathways of English language learners?

Research Question Two:

In what ways do individual and institutional factors affect the educational outcomes of English language learners?

1.6 Operational Definitions of Terms

The following definitions apply to the terms used in this study:

Correlates This term is used to indicate the variables or factors that may influence a student's decision to drop out of school.

Dropouts/Premature or Early School Leaving For the purposes of this study, these terms are used synonymously. Dropouts or premature/early school leavers are those students who left school prematurely for reasons other than death, transfer to other school districts or illness between Grades 8 and Grade 12. Students who were located at adult learning centers in the Vancouver School District taking high school courses were considered as temporary dropouts.

Academic Achievement/Academic Performance These terms are used synonymously to indicate students' academic performance in the various school courses taken as measured by Grade Point Average (GPA).

Resilience Borrowing from Garmezy and Masten (1991), resilience in this dissertation will be used to indicate that even in the face of adversity and risk factors, an individual will manage to be successful.

At-Risk This term is used to describe students who are socially, linguistically, historically, academically and financially disadvantaged to the point of these factors disabling these students' success at school.

Socio-Economic Status Socio-economic status refers to family median income level and the price of dwelling in the participants' neighbourhood as recorded in Canadian census data.

English as a Second Language/ English Language Learners These terms are used interchangeably in this study and do not have any negative connotations. These terms are used to indicate adolescent students who are learning English as an additional language in an environment where English is the language of the majority population.

Linguistic and Ethnic Minority Students For the purposes of this study, following Cummins (1981b), linguistic minority students are those whose first language is different from the majority group in which they reside, while ethnicity or ethnic identity refers to the sense of belonging to an ethnic group where part of one's thinking, perceptions, feelings and behaviour is due to ethnic group membership (Rotheram & Phinney, 1987). Thus, linguistic and ethnic minority students include students who belong to a particular group and who speak a language other than English as their first language. This term includes ESL students.

Reception Program The Reception program is designed for students who are at the emerging or developing level of English language acquisition. Students at this level register for several blocks (one block = 55 minutes) of ESL support as well as grade level courses. Students at this level are considered to be equal to the British Columbia's Ministry of Education categories of levels 1 and 2.

Transition Program The Transition level is classified as an expanding level of English language knowledge. Students enrolled in this program are normally given two blocks (25-35% of class time) of ESL support, with a content focus on English, Social Studies and/or Science. This level is approximately equal to the British Columbia's Ministry of Education Level 3.

Integration Program The Integration Program is for ESL students who are classified as being proficient in English. Together with taking grade level content area subjects in

integrated classrooms, these students are also assigned one block of support that focuses on reading comprehension and writing. This level of support is equivalent to the Ministry of Education's level 4 standards.

Immigration Class This variable is used to classify newly arrived ethnic and linguistic minority adolescent immigrants according to the visa type designated to them by Immigration Canada. The immigration categories delineated by Immigration Canada include entrepreneur, family, refugee and caretaker classes.

High School Graduate A student is defined as a high school graduate if he has met the Vancouver School Board's course credits requirements. High school graduation was determined in two ways. First, all the courses taken by each of the participants in this study were verified to determine whether the course credit requirements for high school graduation had been fulfilled. This was further verified by examining the VSB's Online Graduation Verification screen of each individual school. Confirmation of graduation was indicated by the message on this screen indicating whether the participant had met all graduation requirements.

Permanent Dropout For the purposes of this study, a student was considered to be a permanent dropout if, on the Vancouver School Board's DRPC Student Tracking database, a code of W was entered in the student's admission/withdrawal history and was not found taking high school courses at adult learning centers in the Vancouver School District in the seven year period of this investigation.

Temporary Dropout Temporary dropouts are those students who were initially identified as dropouts but were located at adult learning centers in the Vancouver School District within two years after leaving high school prematurely.

1.7 Limitations of the Study

Relatively little research has been conducted in Canada identifying the salient factors associated with ESL learners' educational pathways and outcomes, in particular the graduation and dropout rates. This dissertation, therefore, takes the approach of an exploratory study in collecting and analyzing readily available longitudinal secondary data that may reveal potentially significant factors associated with the educational pathways and outcomes of ESL learners.

This study has identified first, the educational pathways that ESL adolescent ethnic and linguistic minority students followed in their attempt to reach successful/unsuccessful educational outcomes and second, has investigated some of the possible demographic, school administrative and academic performance indicators associated with high school completion and non-completion. This investigation did not attempt to deal with ESL adolescent students' personal reasons for leaving school prematurely. The inevitable constraint of time and cost has meant a loss of interviewing students for their perspective. This study may provide evidence to support further investigations into the reasons ESL students drop out of school.

Chapter II

Literature Review

A review of the literature on the educational outcomes of language and ethnic minority students is presented in this chapter. Although copious amounts of research exist in the area of academic achievement and students leaving school prematurely, most of this research emanates from the United States of America. In Canada, some work has been conducted in this area; however, this area of investigation is still at an emergent stage, and particularly so for English Language Learners. Acknowledging in advance that the American social, educational and political context is different from that of Canada, there are still many variables that are applicable to the student population in Canada. In addition, some of the existing research literature base on ethnic and linguistic minority students' educational outcomes in the United States lends support for some of the hypotheses used in this study. Thus, most of this chapter reviews the research literature from the United States and where found and applicable, Canadian research has been included.

2.1 Introduction

Host countries recruit immigrants to replace aging populations, serve in manufacturing-based occupations (to fill labour market gaps), and to expand the economy through entrepreneurial investment. Newcomers can be seen as an asset to any country, because they are in the position to provide vital services, finances, and in some cases, also provide an already 'educated' elite (brain drain). Conversely, potential newcomers generally emigrate to escape religious and/or political persecution, to have economic advantage, to further their children's education, and in some cases to seek land ownership. Immigration, therefore, can be seen to be mutually beneficial to both the host country and the newcomer.

However, when families emigrate, school-aged children are generally not given a voice in the decision-making process and may be considered to be victims in this process. As these children enter the host country's school system, with various levels of academic content knowledge and English language proficiency levels, problems become manifold. Indeed, the unseen plight of school-aged immigrant children is often ignored, not dealt with in an equitable fashion, or is unrecognized.

In 1996, the immigrant population in the province of British Columbia, Canada equalled 25% of the total population, of which 40% of this group spoke a language other than English at home. In the same year, Vancouver, the largest city in British Columbia received 68,145 immigrants, who arrived from several countries including Central and South America, the United Kingdom, Europe, Africa, Asia, the United States of America, and Oceania. Of this population, 18,560 students were attending schools in the Greater Vancouver region (Citizenship and Immigration Canada, 2000). The Vancouver School District reports an enrolment of 4,589 students from various ethnic and linguistic minority groups in the school year 1996/1997 (C. L. Eddy, personal communication, March 9, 2005).

In any host country, newcomers generally require the specific language skills of the host country to participate and contribute fully in the society. In particular, many newly arrived immigrant children and adolescents attending educational institutions need to acquire both Basic Interpersonal Communication Skills (BICS) and Cognitive Academic Language Proficiency (CALP) (Cummins, 1979, 1981a, 1981b, 1981c, 1984, 1986) in order to participate fully within the socially instituted requirements of the academic and social milieus of the society. With regard to schooling, Collier (1987) writes, "Language is the focus of every content-area task, with all meaning and all demonstration of knowledge

expressed through oral and written forms of language” (p. 618). Thus, knowledge of the specific genres of language required for school can be seen as partially responsible for successful academic performance. Successful academic performance is also one of the major requirements for obtaining a high school diploma, which in turn generally determines the life pathways that students follow. With increasing numbers of immigrants arriving to Canada and the various cultures, languages, values, customs and belief systems they arrive with puts increasing pressure for these students to integrate into the society within a short time span. Notwithstanding the negotiating of cultural differences and social identities, these students also face the challenge of having to acquire language and academic content in the new language simultaneously. Successful educational outcomes (academic performance and high school graduation) remain elusive to many students of language and ethnic minority students (Ogbu, 1992).

2.2 The Educational Outcomes of Language Minority Students

Of the seven largest industrialized countries in the world (G-7 countries), Canada's high school graduation rates of approximately 70% come in sixth place, second to last behind Italy (Statistics Canada, 1992). Recently, the Organization for Economic Cooperation and Development reported that 8% of Canadian students in the compulsory attendance age are not in school (1998). Furthermore, figures from Statistics Canada (1995) demonstrate that students who have not completed high school have a higher unemployment rate, with females suffering the most at a 70% unemployment rate. An earlier Canadian study conducted by Gilbert, Barr, Clark, Blue and Sunter (1993) reported that in comparison to high school graduates, the unemployment rate for high school dropouts was exceptionally high.

In the United States, Rumberger's (2001) data showed similar trends to the Canadian findings. He states that in 1998, 25% of the high school population did not earn high school diplomas and that, although the number of students who complete high school in the United States has been steady over the last decade, the proportion of students who do not leave with a high school diploma has risen. Furthermore, he reports that unemployment rates for dropouts there were 75% higher than for high school graduates.

Few American studies report dropout statistics specifically for English as a Second Language (ESL) or immigrant high school students. However, Rumberger (1995) reports that immigrant students have a higher dropout rate than native-born students (National Center for Education Statistics, 1992). In Canada, Radwanski's (1987) Ontario study revealed that 53% of the ESL high school population dropped out, while Alberta Education's (1992) study indicated a 61% dropout rate for ESL secondary school students. Even higher numbers were revealed by Watt and Roessingh (2001) whose study showed a 73% dropout rate for ESL students in Calgary, Alberta. One Canadian study reported that 60% of English language learners who entered the Vancouver school system at Grade 8 will have disappeared by Grade 12 (O' Connor, 2002). Considering that these figures represent more than double that of the overall dropout rates reported by Statistics Canada (1993), the causes of dropout need to be further explored for these populations.

Rumberger (2001) notes that a rising number of American school leavers are using alternate routes to graduation by achieving Graduate Equivalency Diplomas (GEDs). Drawing on other studies (Cameron & Heckman, 1993; Murnane, Willett, & Boudett, 1995; Murnane, Willett, & Tyler, 2000; Rumberger & Lamb, 1998; Tyler, Murnane, & Willet, 2000), Rumberger concludes that GEDs do not hold as much currency in the job market

place as traditional diplomas do, and as an increasing number of high school leavers are taking this option, there seems to be cause for concern about the 'economic payoff' between earning a regular high school certificate and the GED.

Considering that industrialized western societies have been moving toward more technologically based cultures, the types of employment that have resulted from this shift leave adolescents who depart school prematurely without the necessary critical skills, qualities, and basic requirements to compete for jobs (Burt, Resnick, & Novick, 1998). The lost productivity to nations and their economic prosperity is of great concern. LeCompte and Dworkin (1991) report that a lack of secondary school completion has at least seven negative results on societies, which include a rise in criminal activity and a decrease in health. Dropouts cost Canada \$4 billion in lost revenue, in unpaid taxes, and in the resultant increased spending to address socially related problems (Lafleur, 1992). In the United States, it has been determined that, over the lifespan of the total number of dropouts in one year, approximately \$260 billion is lost in potential wages and taxes.

With the constantly changing demographic situation in North America and indications from demographic trends (Chavez Chavez, Belkin, Hornback, & Adams, 1991; Natriello et al., 1990; Quality Education for Minorities Project, 1990), there is expected to be an increase in high school registrations of students from low-income households, and from racial, ethnic and linguistic minorities. Therefore, the potential of having greater numbers of at-risk students will be magnified (Levin, 1986; Natriello et al., 1990). Unless educational systems address the specific problems of these groups in order to provide them opportunities to reach an outcome equitable to that of majority populations, there will always remain an unequal educational and possibly economic balance between the 'haves'

and 'have-nots.' There is, therefore, much cause for concern not only for the economic sustainability of countries with high dropout rates, but also for the future emotional well-being of these at-risk adolescents.

2.3 Historical Perspective of the Dropout

Cervantes (1965) argued strongly and with conviction that dropouts would be part of the "Gangsters, hoodlums, drug-addicted, government-dependent-prone, irresponsible and illegitimate parents of tomorrow" (p.197). The dropout problem has been of major concern to educators and policy makers since the last half of the twenty-first century, and the above stereotypical view of dropouts is still prevalent in many areas of society. Dorn (1996) proposed that the origin for these concerns goes back to the late nineteenth and early twentieth centuries. Although children then were expected to go to elementary school, the majority of adolescents did not attend high school. In Canada, before 1950, most adolescents did not complete secondary education (Anisef & Andres, 1996), and "in 1951 only 46% of Canada's 14-to-17-year-olds were enrolled full-time beyond eighth grade" (Lennards, 1980). Around the same time in the United States, Dorn (1996) reported that only 49.9% of all native-born Americans, twenty to twenty-four years old, had received high school diplomas. He stated that the possible reasons for high school non-attendance/graduation could be that schooling was not thought necessary for employment. LeCompte and Dworkin (1991) concur and write that a choice of work was available to adolescents who had dropped out of school and to those who were 'semiliterate.' Furthermore, they observe that high school graduates were only marginally more to have jobs than non-graduates.

However, several factors caused this apparent lack of concern about secondary schooling and completion to change. Jobs were created in large corporations for graduates

who could handle 'paperwork,' especially young women. With the onset of technological changes, and demographic trends such as increasing available adult immigrant labour and the enforcement of new child labour laws in the United States through the Fair Labor Standards Act of 1938 (Osterman, 1980), it became more difficult for adolescents to get jobs. The result was a demand for the creation of more schools and a change in high school enrolment from that of an elite minority to one inclusive of the general population. There was also recognition that a high school education would eventually create more valuable workers.

The 'dropout' problem, per se, appeared only in the late 1950s and early 1960s. Prior to that time, several terms such as student elimination, withdrawal, and early school leaver were used for students who left school prematurely. The perception of those who did not complete high school does not seem to have been negative at the time. However, in the 1960s, the term dropout became dominant and negative, and those who left school before graduation were thought of as "varying from a social norm" (Dorn, 1996, p. 78).

Central to the entrenchment of negative perceptions of dropouts were reports by both the government of Canada and of the United States, which made a connection between the necessity for an educated population and its contribution to national economic growth. First, Anisef and Andres (1996) observed that Employment and Immigration Canada published *The Task Force on Labor Market Development* (Employment and Immigration Canada, 1981), which lauded high school completion as good for the nation because educated workers would help the country compete internationally, but dropouts would be a threat to the future of the economy. Second, Roderick (1993) observed that the American, National Coalition of Advocates for Students' report, *Barriers to Excellence: Our Children At Risk*

(1991) indicated that the most important factor for the increasing number of dropouts were the educational institutions themselves. In addition, the Committee for Economic Development in the United States addressed the problem of dropouts in their report, *Children in Need* (1987), and suggested that this formerly ignored group be a major part of the committee's strategy for educational change. Their action was motivated by questions about the quality of education, the concern about the increasing economic disparity between high school graduates and dropouts over the 1970s and 1980s, and predictions that at-risk youth would comprise increasing portions of the school-age population and future workforce.

Dorn (1996) suggested that, although dropouts were becoming a national economic concern as early as the beginning of the twentieth century, it took considerable time for the phenomenon to be perceived as both an individual and a societal problem. Originally seen as an individual hardship, it later came to be viewed as 'psychosocial alienation' (Kett, 1995). The perceived threat of dropouts to the societies of both countries increasingly stigmatized those who left school prior to graduation. Finally, as mentioned, the number of high schools increased in order to accommodate and engage larger numbers of students; however, Fine (1986) states that, while schools today are still supposed to be encouraging universal attendance, this is not the case for economically- and ethnically-disadvantaged youths, who are still being pushed out of the educational system.

2.4 Definitions, Profiles and Calculations

There have been numerous attempts to define the concept of dropout. However, as mentioned previously, there is little consensus about how the term is defined. In his investigation into how dropouts are defined by urban school districts in various parts of the

United States, Hammack (1987) was unable to find consensual definitions of the term, although for several school districts dropping out was viewed as an event. For example, the New York City School system defined a dropout as “any student who left the school system in the ...year prior to graduation, and who did not enter other educational settings leading to a high school diploma within the same year” (p.10). The Dade County School District in Miami defined dropouts as those students who left school between Grades 9 and 12 and who did not receive either a certificate of completion or a diploma. Similarly, in other school districts in the United States, discrepancies existed in how the term was operationalized. Other researchers found that, “One district treated a student who had died as a dropout” (Barber & McClellan, 1987; Gaustad, 1991). Hammack (1987) suggests that the reasons for these discrepancies lie in the way the data is collected and entered into the school databases.

Studies using a life course perspective on dropout behaviour, which posits that dropout is not so much a singular event but a process; have operationalized the term as meaning “leaving school at least once for an extended period of time prior to graduation for reasons other than illness” (Alexander, Entwisle, & Kabbani, 2001). Other researchers see dropouts as those students who have a history of grade retention and relatively poor grades (Howard & Anderson 1978).

Similarly, the Phi Delta Kappa Center for Evaluation, Development and Research in their attempt to define the term ‘dropout’, found that there was no consensus within the field (Frymier & Gansneder, 1989). It has been suggested that the controversy over the definition is due to the researcher’s academic discipline and perspective, and the various methods and statistical measures that are used to determine dropout rates (Willett & Singer, 1991). In

Canada, the defining, calculating and the reporting on the phenomenon of dropout is seen to be consistent (Watt & Roessingh, 2001).

Three methods of calculating dropouts have been used in the research studies reviewed: event rates, status rates and cohort rates. Each of these methods provides different perspectives of early school leavers (National Center for Educational Statistics, 2001). Event dropout rates calculate the number of students who have left school prematurely in a given year, whereas status rates calculate cumulative data on dropouts within a specified age range. This rate is generally higher than event rates for it calculates a population within a specific age range regardless of when they last attended school. Cohort rates measure a specific population of students over a specific period of time. Students that share similar characteristics and experiences and who start at the same grade levels are tracked over a defined period to determine when they dropout of school (National Center for Educational Statistics, 2001, p. 2).

Although, the term 'dropout' has a meaning that is consistently negative, it is a term that has become common in the vocabulary of research literature, media, and in the vernacular. In North American societies, those who drop out are seen as non-conforming (Fine, 1991), having a 'weak self-image,' being troublemakers and potential welfare recipients, being delinquent and alienated, and showing degrees of helplessness (Beck & Muia 1980; Cervantes 1965; Fine, 1986). Finn (1989) noted that these dropouts, "are viewed both as failures of the educational system and as individuals who have failed to achieve a basic requisite for modern American life" (p.117). Additionally, Chavez Chavez, Belkin and Hornback (1991) concluded that the term dropout has been constructed by the educational

community which “semantically” places the blame of leaving school prematurely at the individual level.

2.5 Factors Relating to Educational Outcomes

2.5.1 Introduction

There exists a plethora of empirical studies dealing with factors related to both academic achievement and early school leaving. In the United States, the concern with non-high school graduation has led to numerous, large longitudinal studies using national databases. A review of the literature illustrates that there exist two broad categories of variables that have the potential to influence students’ decisions to drop out of school prior to receiving a high school diploma. These variables are generally classified either into individual/student related variables or into school/institutional related variables. The existing category of individual related variables include race/ethnicity, family socio-economic status, primary language, gender, school mobility, parents’ educational levels, and family structure while school related variables include academic performance, attendance, grade retention, student attitudes to teachers and school, and school size.

However, very little work has been conducted for language minority students’ overall educational outcomes, in particular, graduation and dropout rates. Specifically, for English language learners, much progress has been made in identifying and understanding the processes of learning, the acquiring of content knowledge, and the context under which ‘learning’ takes place. Explanations for the disparities in academic achievement include lack of English language proficiency, teacher prejudice, home/school discontinuities, learning style discontinuities, language attitudes and linguistic prejudice, socio-economic status, inadequate pedagogy, unfair assessment procedures, learners own self perception of their

status in the country, and power relations (Scarcella, 1990). Research findings in the area of identity and ESL students indicates that language proficiency is a significant indicator of linguistic and ethnic minority students' integration and identification with mainstream students and culture, in turn leading to successful academic performance (Miller, 2003). Although there exist studies that have investigated the ELLs' academic achievement, few studies have dealt with possible correlates to their educational outcomes.

The empirical studies on dropouts consistently demonstrate the significance of some recurring variables for the population samples investigated. The studies included in this section have been chosen on the strength of the research and the consistency of their findings. The research literature to be described in this section includes some of the indicators found to be associated with high school educational performance and outcomes. This will be followed by a summary of the descriptors related to educational outcomes as presented by several studies.

2.5.2 Age on Arrival and Length of Time

Linguistic and communicative competence is known to be a complex phenomenon (Bachman, 1990), and even more so for those studying an additional language. For immigrant ethnic and linguistic minority students, language proficiency can be seen as a necessary condition for participating in and contributing to the new society/country. However, Cummins (1986) recognized that not all forms of "language proficiency is [are] related to literacy" (p.29). In his Common Underlying Proficiency (CUP) model, which proposed that only some aspects of language proficiency are transferable from the first language to the second language, Cummins (1979) distinguished two types of knowledge; Basic Interpersonal Communication Skills (BICS) and Cognitive Academic Language

Proficiency (CALP). BICS is the knowledge required to communicate orally in context-embedded situations, while CALP is the knowledge required to function in context-reduced situations (for example, the classroom) where linguistic cues are mainly used to convey meaning. However, not all components of language proficiency are transferable or cross-lingual (Cummins & Swain, 1986). For example, it is thought that various oral dimensions associated with BICS are not transferable whereas the cognitive dimensions required to acquire CALP is considered to be available or common across languages.

Although Cummins' (1981a) simplistic vision of language proficiency as being dichotomous has been open to criticism on the grounds that the framework is discriminatory and the tests used to determine levels of proficiency inadequate (Edelsky et al., 1983; Hakuta, Butler, & Watt, 2000), English language educators have embraced this model. Furthermore, this model has been widely used in policy-making decisions to determine the length of time English language learners need for English as a Second language support.

Acquiring an additional language is a lengthy affair. Cummins' (1981a) longitudinal study investigated the language acquisition of 1,210 immigrant children who were six years of age and below. The data from this study were broken down by the length of residence in the country and the age of arrival into Canada. Cummins (1981a) determined that it takes approximately two years to acquire BICS and anywhere from five to seven years to acquire sufficient language to gain grade level norms on school tests that examined cognitive academic language proficiency (CALP). Based on a reanalysis of his previous data, Cummins (1981a) found that the length of time an individual resided in the country was more significant as a predictor of second language achievement than the age of arrival to the host country. Cummins concluded that the effect of length of residence on academic

performance was independent of age of arrival. Certain groups of students in similar age categories on arrival to the host country demonstrated better results than those that had been in the country for a longer period. Thus, he deduced that length of residence ceased to have an effect after approximately five years. Cummins (1981a) additionally reported that although the older students' results on standardized tests were not at the grade level norm, their absolute growth was much higher than the younger students in the sample. He concludes that this phenomenon was a result of variable levels of first language linguistic and cognitive development.

Similarly, in the United States of America, Collier (1987) and Collier and Thomas (1989) investigated 1,548 and 2,014 immigrant children who were at the beginning stages of learning English. Their samples consisted of Asians, Hispanics, and the students representing seventy-five languages from around the world. For approximately two years, the samples received English as a second language (ESL) support for one to three hours per day and joined mainstream classes for the remainder of the school day. The initial results from their studies exhibited similar results to that of Cummins (1981a). However, Collier (1987) and Collier and Thomas (1989) found that the five to seven year time frame to acquire CALP was only applicable to students who had arrived to the U.S.A. between the ages of eight and eleven and who had received at least two years of schooling taught in the native language. More significant were the findings that students below the age of eight, who had little or no formal schooling, required a minimum of seven to ten years to achieve the same standard of CALP. Students over the age of 12 that had experienced formal schooling in their native language made significant gains. However, the insufficient time allocated to obtain a high school diploma did not allow them to catch up academically with

their native-English peers. Thomas and Collier (1997) concluded that these students would only catch up with their native-English speaking peers sometime during an undergraduate career.

Hakuta, Butler and Witt's (2000) investigation examined two samples in the United States and Canada. Although different criteria were used for measuring both oral and academic language proficiency in these studies, these researchers found that it took English language learners three to five years to acquire oral English proficiency and four to seven years to acquire academic proficiency. While results are in keeping with previous research, more importantly, these researchers also reported 'a White space,' that is, a discrepancy existed between the English language learners' performance at age-equivalent levels in comparison to native English speaking students. Grade 1 and Grade 3 students were found to be one year behind native English speakers in areas of basic reading, reading comprehension, and broad reading but at the Grade 5 level, the gap had increased to two years.

In a similar vein, Gunderson's (1995) Canadian study investigated the reading achievement of language minority students in secondary schools. Results from his study indicated that even after three years of an all-English education, his sample was reading two to three years below the level of native-English speakers. He concluded that the length of time language minority students required to participate at age appropriate levels was more than three years.

There has been much research and some controversy on the length of time required for ESL learners to achieve cognitive academic level proficiency (CALP). Cummins (1981a), Collier (1987), and Collier and Thomas (1989) suggest that it could take anywhere

from 5 to 7 years or 4 to 9 years, respectively, for ESL learners to achieve grade level academic language equivalence. By this time, ESL learners should have gained a “deep enough proficiency level in a second language to compete at the typical level of native speaker performance, expressed on a standardized test as 50th percentile or normal curve equivalent (NCE)” (Thomas & Collier, 1995). Ramirez’s (1992) study indicated that an average period of 10 years is required for CALP to be achieved. In contrast to the earlier study, findings from a fairly recent study by Thomas and Collier (1995) has demonstrated that it normally takes at least 5 to 7 years for non-native speakers to achieve CALP. The results of this study were based on “well-implemented, mature programs.” If such is indeed the case, then those ESL students who were provided with well-established language and academic support for at least 5 years should be performing within a normal bell curve in all subject areas.

Regardless of the various time frames found, it has been generally acknowledged in the research literature that the length of time required to achieve CALP can be anywhere from three to ten years. The studies mentioned and others (Baker, 1993; Cummins, 1991, 1996; Freeman & Freeman, 1992; Hakuta, 1986; Snow, 1990; Wong-Fillmore & Valdez, 1986) have confirmed the length of time required for language minority learners to acquire CALP. Additionally, Gunderson (1995), Thomas and Collier (1997), and Hakuta, Butler and Witt (2000) observed that in addition to the length of time it takes an English language learner to acquire proficiency in CALP, the academic achievement gap that has been observed between native and non-native speakers of English is of utmost concern. Supplemental time is needed to close the achievement gap. Although these studies investigated large numbers of language minority students, Collier (1987), and Collier and

Thomas (1989) simply identified the ethnicity and/or the language groups of their sample; they did not analyze their data based on the various groups. Similarly, Cummins' (1981a) study views his sample as being homogenous. Whether there exists differential language and academic achievement within and across ethnic and language minority groups is questionable.

Notwithstanding the contradictory results noted above and some of the questionable data collection procedures, research findings generally indicate that it takes anywhere between three to ten years for ESL learners to acquire CALP to perform at the typical level of native speaker performance. For ESL learners, language proficiency, in particular CALP, is needed to be academically successful. However, the time invested in acquiring these language skills means that less time is available for them to complete the core examinable subjects to earn mainstream high school diplomas. Furthermore, the time frame allocated for high school students (generally five years) to acquire the necessary course credits means that ESL students are in the position where they are forced to take on numerous academic courses in addition to their ESL courses. The emotional trauma and the mental challenge of trying to achieve similar targets to the 'native' English speaking majority student population in addition to taking ESL courses may cause some ESL learners to under perform academically and/or to disengage and finally to drop out of school. The 'White space' found by researchers Hakuta, Butler and Witt (2000), and/or the time lag found by Thomas and Collier (1997) and Gunderson (1995) means that for some ESL learners, the means to achieve a mainstream high school graduation certificate will be doomed from the date of entry into the school system. The discussion presented in this section thus serves as justification for considering the length of time ESL learners take language support classes as

a variable that potentially influences both academic achievement and high school graduation.

2.5.3 Ethnicity

Both race and ethnicity have been found to be associated with academic achievement and with school completion (Ekstrom, Goertz, Pollack, & Rock, 1986; Gunderson, 2004; Klein, 1977; Mickelson, 1990; Peng & Takai, 1987; Phillips, Crouse, & Ralph, 1998). Empirical studies have demonstrated worldwide that ethnic and linguistic minority learners not only perform poorly academically (Lipkin, 1974; Ogbu, 1992), but also consistently achieve below average academic results (Woolfolk, 1998). Disparities in academic performance commence early in the schooling career of ethnic and linguistic minority students, academic differences widen during elementary schooling and remain constant during their secondary schooling years (Phillips et al., 1998).

However, empirical studies have found that not all ethnic groups are affected equally (Gunderson, 2004; Sue & Okazaki, 1990). In the United States, research findings indicate that in general, of all ethnic and linguistic minority groups, African Americans and Hispanic students are seen to be the most disadvantaged in terms of their academic achievement (Fine & Rosenberg, 1983). African American students have been found to “earn lower grades, dropout more often, and attain less education than do Whites” (Mickelson, 1990, p. 44). Further substantiation was found by Sue and Ozakaki (1990) in their comparative study of the academic performance of various ethnic and linguistic minority adolescent students in the United States. Findings from this study indicated that Hispanic students’ academic performance was found to be lower than that of the White majority population while Asian

American students' academic performance exceeded that of White, African American, and the Hispanic groups (Sue & Okazaki, 1990).

In Canada, school-aged children from ethnic and linguistic backgrounds have also been found to have lower educational attainment. A report from the Canadian Education Statistics Council (1996) disclosed that students whose mother tongue was neither English nor French (the two official languages in Canada) demonstrated lower educational outcomes than those whose mother tongue was one of the official languages.

In reaction to Black racism in Canada, the African Canadian Legal Clinic (2002) published a report entitled "*A Report on the Canadian Government's Compliance with the International Convention of the Elimination of All Forms of Racial Discrimination*," where the academic and educational outcomes of African Canadian students were revealed. The paper, citing a two decade longitudinal survey conducted by the Toronto Board of Education (R. S. Brown, 1994), reported that not only did African Canadian students have low test scores but they also ranked second highest in the proportion of students who were enrolled in basic level programs in that time frame. Additionally, in 1991, the Toronto Board of Education found that African Canadian and Latin American youth were not accumulating sufficient academic course credits in comparison to other students. A further concern are the findings from an unpublished Canadian dissertation which indicated that Latin American high school students become disengaged from school at a much more rapid pace than other students (Drever, 1996).

In contrast, an American investigation that utilized a national sample found that in comparison to White students, Asian, Black and Hispanic high school immigrant students were not only more likely to take college level preparatory classes at high school but also

they were more likely to attend and graduate from college (Vernez & Abrahamse, 1996). These results were found to hold true across various ethnic groups, leading these researchers to conclude that “whatever difficulties immigrant children and youths might face adjusting to the language and institutional and cultural norms of this country, their educational attainment has equaled if not exceeded that of native children and youth” (p.xii-xiv). Similarly, a large-scale study consisting of 80,000 students in the San Diego Unified School district found that non-English speaking ethnic groups outperformed both their English-speaking co-ethnic peers as well as the White majority students (Portes & Rumbaut, 1986; Rumbaut, 1995). Rumbaut (1997) reports that the Chinese, Korean, Japanese, Vietnamese, Filipino, and Hmong immigrant students scored the highest GPAs. Gunderson (2004) studied the attainment of 5,000 ESL students in the Vancouver school district. His investigation found that adolescent ethnic and linguistic minority ESL students, when classified as a homogeneous group, performed academically at higher or almost identical levels than Canadian born English speakers in four examinable subjects: English, Social Studies, Science and Math. However, when these participants were categorized by ethnicity, distinct intra-group differences in academic performance were found (Gunderson, 2004). In a similar vein, Rumbaut (1997) found that with the exception of Latinos, ESL students demonstrated higher academic results than their co-ethnic English speaking peers or the White majority group.

Likewise, high school graduation seems to be elusive for some ethnic and linguistic minority students (McNeal, 1995; Rumberger, 1987). Ekstrom, Goertz, Pollack and Rock (1986), using the 1980 High School and Beyond Study data set, investigated three questions of which one addressed the question “*Who drops out of school?*” (p.356). Findings from

this study indicated that not only did Hispanic and African American students have higher dropout rates than the White students but also the former dropped out at a rate that was almost double that of the White students. Similarly, using the U.S. Department of Census, School Enrolment 1968 to 1984 data, Rumberger (1987) compared the various dropout rates, for White, Black and Hispanic populations. Regardless of the age of the student, his analyses of the data indicate that Hispanic students had the highest dropout rates followed by Black students. Rumberger's (1995) study used the 1988 National Educational Longitudinal Survey data to determine institutional and individual predictors associated with middle school students dropping out of school. Results from his study indicated that Black, Hispanic and Native American Grade 8 students had higher odds of dropping out of school in comparison to others, while Asian students had significantly lower odds. Similarly, in 1990, The United States Census Bureau reported that African-American, Hispanic and Native American students have a greater risk of dropping out of school than do Anglo and Asian students. The census data indicated that 11.2% of African-American youth dropped out of school in comparison to 21% for the Hispanic population, while Native American students had exceptionally high dropout rates, in some areas close to 90% (U.S. Bureau of Census, 1990). McHenry (1998), in her review of the dropout literature, reported that in the past, the dropout rates for racial and ethnic minority groups were diverse. Citing the National Center for Education Statistics (NCES) (1996), McHenry stated that in 1988, African American students dropped out of high school at a rate of 24.7% compared to 14.3% for White students. However, these statistics are no longer true. McLaughlin (1992) reported that by 1991, the dropout rates for White students fell to 12.4% and 14% for African Americans. However, in 1995, the NCES (1996) reported that 10.5% of overall population

between the ages of 16 and 24 were high school dropouts, with 12.6% of African Americans dropping out of school. For Hispanic students, the dropout rates have been steadily increasing. McLaughlin (1992) explains this increase in terms of the rapid population growth for Hispanics in comparison to other ethnic groups in the United States.

Canadian research also demonstrates diverse findings for ethnic and linguistic minority students' high school completion rates. Brown (1994) concluded that results from the Toronto Board of Education's longitudinal survey of high school students indicated that 42% of the African Canadian students had left school prior to graduating in comparison to the 33% of the overall student population. Furthermore, socioeconomic status had no effect on the African Canadian students' educational outcomes. For those with parents in semi-professional occupations, Black students were just as likely to leave school prior to receiving a high school diploma. Gunderson's (2004) study found even higher rates of disappearance for language minority students in the Vancouver School District. Although his results do not indicate the various ethnic groups in relation to the disappearance rate he found, overall, language minority students disappeared from school at a rate of 60% prior to high school completion. Findings from other Canadian studies indicate similar trends. Alberta Education (1992) reported a 61% dropout rate for ESL secondary school students in Edmonton, while a 73% dropout rate was found for ESL students in Calgary, Alberta (Watt & Roessingh, 2001). These figures are more than double that of the Canadian national dropout figures (Human Resources and Labour Canada, 1993).

For some ethnic and linguistic minority groups, both academic achievement and high school graduation have been found to be elusive. Furthermore, for these groups of students, not only have findings indicated distinct intra-group differences in both academic

achievement and educational outcomes but also, students from some ethnic groups have been found to consistently under perform academically. In the United States, Native American, Hispanic and African American students have been found to be more academically disadvantaged than other groups, while in Canada, African Canadians under perform academically. Research findings in this area provide sufficient support for including ethnicity as a variable for investigation in this study.

2.5.4 Academic Achievement

Researchers studying the risk of dropout and its relation to academic performance have reached a general consensus that low grades, poor test scores, and placement in a non-academic track are strong indicators of dropout behaviour (Barro & Kolstad, 1987; National Center for Educational Statistics, 1992; U.S. Department of Education, 1983). Rumberger (1995) conducted a comprehensive study that involved identifying the effects of personal, family, and school variables on dropouts. After controlling for such variables as demographic factors, family, and school characteristics, he found that academic performance as measured by students' school test scores and course grades was a strong predictor of dropout behaviour. In other words, the higher the grades or test scores, the less likely those students would drop out. Another study revealed that having low grades as far back as Grade 1 is related to dropout behaviour, and furthermore, low test scores in Reading and Mathematics even at the Grade 1 level were found to be predictive of students' premature departure from school (Simmer & Barnes, 1991).

In contrast, other researchers have found that, although cumulative failure was a likely indicator of dropping out, students who had had these experiences did not constitute the majority of their dropout population (Cairns, Cairns, & Neckerman, 1989). Recently,

some studies have shown that many non-graduates are students of average ability (Kronick & Hargis, 1990). Interestingly, researchers using the Canadian National School Leavers Survey data (Human Resources and Labour Canada, 1993) found that 51% of dropouts reported that they had achieved a 'C' average or lower prior to leaving school. However, when these students' actual academic grades were investigated, it was found that in fact 37% of the dropouts had 'B' averages or better. In a study that looked at Limited English Proficient (LEP) students, a variance in the dropout rates amongst Latino ethnic subgroups was found even though the samples demonstrated low achievement; Mexican-American, Puerto Rican and Dominican students had a much higher dropout rate than students from Cuba and South America, with the Mexican students having the highest rate. When these researchers compared the test scores of the Latino groups to those of African-Americans, they found that although the groups had similar test scores, Mexican students dropped out of school at a higher rate (Fernandez & Velez, 1989; Romo & Falbo, 1996). One may surmise, therefore, that low-test scores are not sole predictors of dropout.

The results presented above indicate that the findings in this area are not only controversial but also inconclusive. The evidence that some students who drop out have been performing well academically is disturbing, and the issue is obviously more complex than it seems. Whatever their personal achievement, however, Pallas (1987) argued that lack of success in school is the most likely indicator of dropping out. However, as demonstrated above, Pallas's statement is contradictory to the findings. Schools are losing students who do not fit the traditional profile of a dropout.

2.5.5 School Mobility

In North America, parental career choice, lack of work, divorce, death, and other personal circumstances have resulted in geographic mobility becoming commonplace. Between the years 1980-1987, 16% to 20% of heads of households moved within the United States (Simpson & Glenn Fowler, 1994). In 2001, U.S. Census data indicated that 15% to 18% of school-aged children were found to have moved residences (U.S. Bureau of Census, 2001). Although reporting methods differ from the United States, the 1996 Canadian Census of Population data, based on movers aged one-year and older and who were living at a different address than the one at which they were living a year earlier on Census day, indicate that the mobility rate for the Canadian population was 15.5%. School aged children, who are rarely decision-makers in this process, are inadvertently exposed to difficult circumstances, which include an interruption to immediate daily routines such as schooling (new teachers, physical location, difference in academic emphasis) and interaction with peers (Entwisle & Alexander 1989, 1993). These situations in turn may create emotional and psychological problems that could affect academic performance.

Although the effects of school mobility on academic performance have been studied since the 1960's, relatively little research exists in this field (Rumberger & Larson, 1998a). Of these, most use federal, state, and local school district databases to investigate the relationship between student mobility and academic performance for elementary and junior high students. In general, the results of these studies demonstrate that students who change schools suffer both social and academic problems, which in turn affect academic performance (Jason et al., 1992). Biernert and Jax (2000) write that school transfers are the greatest threat to academic achievement.

Few studies have focused on high school students' school mobility rates and academic performance. Whalen and Fried's (1973) investigation of Grade 11 high and low intelligence students in a California high school found that students with high intelligence who transferred schools frequently, that is, attended four schools, were not affected academically. Even with this number of moves, they still exhibited high academic achievement, while the converse was true for students with low intelligence. Using the 1970 Census of Population data, Long (1975) investigated the effects of frequent long distance moves on academic performance. His study found that students, aged sixteen to seventeen who had three interstate migration moves were most likely to be registered at below modal grade levels than those who had lived in one state. Controlling for family socio-economic status resulted in the same observations. Felner, Primavera and Cauce (1981), using a sample of low income and minority students, found that students who transfer schools once do not under-perform academically. However, this did not hold true for the Black and Hispanic students in their sample. The authors write that these students not only demonstrated high school mobility rates, but also they exhibited much lower academic performance.

Various researchers have questioned whether low academic performance is a result of changing schools and the pursuant problems associated with this change or if academic problems were existent prior to changing schools. Temple and Reynolds' (1997) Chicago Longitudinal Study investigated the effects of school mobility on reading and mathematics achievement of 1087 low-income black children. Seventy-three percent of the students changed schools at least once, while 21% of their sample changed schools more than three times. Results from this study indicate that at Grade 7, those students who moved frequently

were one year behind in reading and mathematics than those students who were stable. However, they report that 50% of the reading and mathematics achievement difference at Grade 7 was a result of academic performance prior to changing schools. Temple and Reynolds (1997) conclude that it is not mobility per se that is harmful to students' academic performance, but rather that frequent school mobility places students at considerable risk academically.

In a review of the literature on school mobility and early school leaving, Rumberger and Larson (1998b) note Lee and Burkham's (1992) study that compared high school sophomores who had either stayed in school, changed schools, or dropped out during a two-year period from Grade 10 to Grade 12. Excluding from their sample those students who had reported that they had changed schools because their families moved, these researchers found that the three groups differed significantly: dropouts demonstrated the lowest test scores, the highest absenteeism rates, the most at-risk behaviour, and the least amount of homework reported. On the same variables, the transfer students demonstrated characteristics that were significantly better than those of the dropouts, while students who had stayed at the same school exhibited even better results than those of the transfer students. Additionally, after controlling for socio-economic factors, African Americans and Latino students were more likely to change schools than White students. Rumberger and Larson (1998a) concluded that cultural differences may account for this phenomenon.

Using data from 10,362 school-aged children from the 1988 National Health Interview Survey (NHIS) on Child Health, Simpson and Glenn Fowler (1994) found that 35% of their sample moved one to two times while 39% moved more than three times. Students who moved more than three times during their school career were exposed to

increased emotional/behavioural and school problems. However, demographic variables, such as age of the child, parents' socio-economic status, mother's educational level, and marital status were also found to be influential indicators of mobility. The chances of repeating a grade or being expelled were just as likely for those students who had moved once or twice in comparison to those who had not moved at all. Simpson and Glenn Fowler (1994) conclude that students who had moved three or more times had 60% greater odds of repeating a grade and 80% greater odds of being expelled or suspended. These findings demonstrate that there were no differences in mobility by race and gender.

Rumberger and Larson's (1998b) comprehensive study set out to investigate the incidence of student mobility of students in Grades 8 to 12 and its effect on high school completion. Using data from the National Educational Longitudinal Survey of 1988, students were tracked regardless of whether they stayed in school or dropped out, the condition being that they continued to reside in the United States. These researchers tested three recursive models: the first model investigated the effects of demographic, family, and school characteristics in Grade 8 as it related to their Grade 12 status; the second and third models predicted high school completion status two years after what would be considered a normal high school graduation, in particular, whether students a) graduated with a high school diploma, b) obtained a GED or an alternative certificate, or c) did not complete high school. Pre-existing student and family variables were controlled for in order to estimate the effect of school mobility on high school graduation. Rumberger and Larson (1998b) concluded that 30% of the school transfers that occurred were not for reasons of residential change. However, school and residential mobility occurred more frequently for those students from a lower SES background. High rates of absenteeism, together with

misbehaviour, low educational expectations, and academic engagement were all indicative of whether students would change schools or drop out during their normal high school career. Additionally, Rumberger and Larson reported that like other investigations, their data indicated that school mobility is an important risk factor of high school non-completion. After controlling for student, family background and educational experiences in Grade 8, even a one-time school transfer was likely to negatively influence high school completion. Further, they noted that many of the indicators that were found to be predictive of early school leaving were also predictive of who would attain a GED instead of a high school diploma.

Research in this area demonstrates not only contradictory results but also methodological problems. Both early and recent works demonstrate that school mobility is negatively linked to academic performance, the relationship is not significant, or the relationship is reversed (Alexander et al., 2001). Alexander, Entwisle, and Dauber (1994) write that much confusion exists in the literature with regard to whether it is changing residences or changing schools that affects academic performance, for both terms are used interchangeably in the research literature and, the distinction between the two terms is vague. This is somewhat problematic in terms of generalizability and applicability, for the types of adjustment required for either type of move are distinctly different. Additionally, some of the research has not factored in other variables; for example, socio-economic status, age of the child, or the level of schooling. These variables could possibly confound the results. Children who come from a lower SES background tend to move more often than those from a higher income bracket (Wood, Halfon, Scarlatta, Newachek, & Nissim, 1993).

Further, various educators question the general assumption that residential moves result in students having to change schools. Although this may be the case in most circumstances, 30% to 40% of school changes are not for this reason (Kerbow, 1996; Lee & Burkam, 1992; Rumberger & Larson, 1998a; Rumberger, Larson, Ream, & Palardy, 1999; G. G. Wehlage & Rutter, 1986). Results from recent studies have indicated that school changes were a result of school officials trying to “get rid of troublemakers” by either getting them to leave voluntarily or by illegally telling them that they had to leave (Bowditch, 1993). Other institutional explanations for changing schools include excessive numbers of students in schools, class size reduction, suspension and expulsion policies, and the general academic and social climate (Rumberger, 2002).

Although some controversy exists in relation to terminology (residential versus school changes), the methodology employed and the contradictory findings, an association has been found between school mobility, academic achievement and educational outcomes. For ESL learners, both residential and school mobility is a reality. Newly arrived immigrant families tend to live initially either with kin or friends until suitable accommodation can be found. As their financial circumstances improve, better and more suitable accommodation is sought. Recently arrived immigrant students are more likely to have higher rates of school changes, which in turn may decrease their educational opportunities. Research findings in this area provide sufficient evidence to include this variable in the present study.

2.5.6 Immigration Class

The Oxford English Dictionary defines an “immigrant” as “a person who settles as a permanent resident in a different country” (L. Brown & Shorter, 1993, p. 1315). However, further delineation of the term exists within government policies. For example, in Canada,

immigrants can apply for residency from three broad immigration categories or classes, that of family, business, or independent class (Immigration Canada, 2004). Additional immigration categories include a refugee class and a category known as 'live-in' caregivers. Most of these classifications include sub-categories, whereby the conditions and circumstances under which individuals can enter the country are explicitly stated. Specifically, a point system is used to evaluate those applying in the independent/skilled worker category. Factors used to determine eligibility include level of education, knowledge of the two official languages (English/French), work experience, age, arranged employment in Canada, and adaptability. Business class applicants need to demonstrate that they have the abilities and resources to invest or establish businesses in Canada, while those entering under the family class are sponsored by relatives already living in Canada. Refugees, on the other hand, are not required to fulfill the criteria in the point system; however, the level of education, adaptability, job skills, and knowledge of either of the two official languages may be used as guides in determining eligibility (Immigration Canada, 2004). Whatever the immigration status of these individuals, the move from the home country to the host country generally causes different forms and levels of stress and trauma. These may include the severing of emotional ties, learning how to function in the new culture, learning the language, and for school aged children, learning the academic content needed to succeed.

Although innumerable immigrants have settled in North America, scant work exists on adolescent ethnic and linguistic minority students' educational outcomes in relation to their immigration entry designation into the United States and/or Canada. Of those studies that have investigated this relationship, some work has concentrated on the psychological impact of pre- and post-traumas of refugee students and their academic performance

(Rousseau & Drapeau, 2000). Other works have taken a sociological lens to investigate the socio-political histories of immigrant students and their effects on academic achievement (Gibson, 1998; Gilbert et al., 1993; Ogbu, 1974, 1978). Recently, from the field of education, immigration status has been used to investigate both second language acquisition and academic success (Bosher & Rowekamp, 2003; Gunderson, 2004; Roessingh, Kover, & Watt, 2004).

From the field of psychology, Rousseau and Drapeau, (2000) designed a study to understand the relationship between emotional disturbance, the pre-and post-migration environment of at-risk students, and scholastic achievement. Their sample consisted of Cambodian and Central American adolescent refugees and their parents. Data were collected on mental health problems, family environment, and parental depression. Additionally, academic performance results were collected in three compulsory subjects: French, English and Math. Pre- and post- migration variables included socio-demographic information while the context variables included both pre-and post- migration experience. In addition, two measures of trauma were used, those related to war or violent political conflict.

Rousseau and Drapeau (2000) observed that although the family environments for both groups were comparable, the Cambodian parents' level of education, English and French proficiency were much lower in comparison to the Central American parents' levels. The differences in parental education levels and language proficiency did not affect the academic performance of both groups of students, for their results indicated that their academic performance was comparable to those of their classmates. Furthermore, no significant correlations were found in the study between failure in school and internalized

and externalized mental health symptoms. These researchers concluded that for adolescent refugees, the relationship between emotional trauma and scholastic achievement is tenuous.

Wilkinson's (2002) Canadian study investigated the educational performance and success rates of refugee youths between the ages of 15 and 21 years. Three categories of educational performance were formulated and investigated for these students: 1) on-track, 2) high school only, and 3) behind/dropped out. Using structured interviews and questionnaires with both refugee adolescents and their parents respectively, of which one European group constituted the majority in the sample, information was gathered on topics which included family composition, refugee camp experience, income level, parents' level of education, parents' occupation before and after their arrival to Canada, and parents' educational and work aspirations for their children. Fifty three percent of the sample, of which Yugoslavian refugees constituted 67% (the majority), was found to be on track in educational streams leading to post secondary education. Twenty-seven percent of the students were identified as being in the second category, that is, high school completion, which presupposes that the students in this category will complete high school but will not attend post secondary institutions. Wilkinson (2002) noted that this group of students was enrolled in ESL, remedial, or catch-up classes. Twenty percent of the sample had dropped out of school or was enrolled in grade levels inappropriate for their age.

A recent, groundbreaking contribution from the field of education is Gunderson's (2004) comprehensive, longitudinal study. In an attempt to understand whether immigration categories upon entry into the host country are predictive of academic achievement, Gunderson (2004) compared the academic achievement of 2,213 immigrant ethnic and language minority adolescents attending secondary schools in a large urban school in British

Columbia. Gunderson's sample was categorized into three immigration categories: that of family, refugee and entrepreneurial classes. Results from his study indicate that overall, immigrants performed academically at equal levels to those of Canadian born students in English, Science and Social Studies. However, immigrants' Math scores were higher than that of the Canadian-born students.

Although the academic performance of students who arrived in Canada under the 'regular immigrant' family class was found to be equal to if not better than that of Canadian-born students, Gunderson (2004) reported that these results are not as good as they appear, for the absolute numbers in his sample decreased as they moved into higher grade levels. Forty-five percent of the students who enrolled in English classes at the Grade 8 level had disappeared by Grade 12. Similarly, student registration in Math classes decreased by 31% and a 25% and 23% drop in registration was found in Science and Social Studies, respectively. Further analysis of the data indicated that students who had arrived in Canada under the refugee class had the highest drop in enrolment in the four examinable subjects of English, Math, Science and Social Studies. Interestingly, increased enrolment of students who had arrived under the entrepreneurial immigration category was found in the four subjects. Gunderson (2004) surmised that economic stability could be a factor involved in the academic outcomes of adolescent newcomers to Canada.

Gibson (1998) investigated the academic achievement of two groups of students attending public schools: West Indian foreign workers' children whose parents had moved to St. Croix in search of job opportunities, and the local Crucian children. Both groups of children were of low SES background, but the immigrant children were of even lower SES backgrounds, with large numbers of families not having the security of permanent residence

visas. Both groups of students came from similar racial backgrounds; however, the immigrant students (West Indians) were exposed to prejudice and discriminatory practices. Gibson writes that a clear pattern of academic achievement was observed. Both immigrant male and female students outdid the local Crucian students academically, while female immigrant students exhibited higher levels of school resilience than the local female students. In contrast, all the male Crucian students had either dropped out or were pushed out of school by the time they reached the ages of 15 and 16. The resilient West Indian immigrant students, on the other hand, felt that they had to stay in school because a high school diploma was necessary in order to find employment.

Gibson (1998) relates the findings of each of these groups to their historical experience of slavery and colonization, to the economic context, and to these groups' relationship with the host society and their relationship to the White American minority who held control of the economy in St. Croix. Gibson (1998), citing Ogbu (1974, 1978), explains that "*Subordinate and immigrant minorities appear to differ in the way they perceive American society and in how they respond to the education system*" Gibson, 1998, p.2, emphasis added). Thus, how immigrants and native-born citizens view the opportunity structure varies depending on the socio-historical context they find themselves in.

Many researchers have investigated the academic achievement of 'immigrant' students. The results of these studies indicate a general pattern of academic achievement. Similar to Gunderson's (2004) research, these studies demonstrate that children of 'immigrants' generally perform just as well as White North Americans with similar socio-economic backgrounds (Gibson, 1998). However, most of these studies view immigrant students as either a homogeneous group or have generally dealt with either refugees or

international students. Gunderson's (2004) comprehensive study is the exception. When he further delineated the immigration categories of his sample population, variance in academic performance was found among the different groups.

The immigration categories as specified by Immigration Canada imply various socio-economic indicators and pre-migration circumstances (financial and emotional) leading to differential processes of adaptation to the new society. Together, these indicators imply variable pre-migration educational opportunities and family literacies leading to both varied academic needs and possible differential levels of academic achievement. Although academic expectations may vary depending on the individual, historical, political, socio-economic and emotional circumstances of the families, parents that enter Canada under the aegis of the "business class" category have expectations that their children will not only achieve academic success in the K-12 school system but will also attend tertiary level educational institutions (C. Zhang, Olilla, & Harvey, 1998).

The issues mentioned in this section imply that a possibility exists that pre-migration circumstances (emotional, financial or educational) may affect the educational outcomes of newly arrived "immigrant" adolescents. The findings reported here justify the inclusion of the variable in the present study.

2.5.7 Streaming

In North America, the change in the ideology, perception and roles of educational institutions from that of servicing the elite minority to one of providing educational qualifications for the general population created a need for schools to be organized in more efficient ways (National Education Association, 1893/1894). Further, this 'new' curricular structure also took into account technological advances taking place in the work place.

Schools were thus also providing education to fulfill the minimum requirement standards for the workplace (Dorn, 1996). Streaming or tracking, a form of between-class homogenous grouping based on ability and/or language was put into place in schools to account for the large numbers of students who came with differential cognitive aptitudes, language abilities, and needs (Braddock, 1990). Although ability grouping starts out early in a student's school career in terms of differential levels of support, at the secondary school level, this process is highly formalized and institutionalized, creating a situation where students are separated by different classrooms, curricula, and teaching staff.

Although streaming procedures increased the reported success of schools as measured by the number of students who graduated (Kronick & Hargis, 1990), the streaming of students through ability grouping has been one of the most controversial issues in North American education. Advocates of streaming maintain that it allows for schools to provide instruction that focuses on diverse learners' individual needs, interests, and abilities, which in turn influences student motivation and learning (Braddock, 1990). In their view, it provides for an equal educational opportunity to excel in the various tracks that students have been placed in. Those against it argue that streaming is an unfair practice for low achievers. Reasons given are poor peer role models, low teacher expectations, slow instructional pace, and high numbers of minority students in these streams. Sorenson (1970) claimed that streaming determines peer relationships and unequal opportunity structures. Although a controversial matter, streaming is still a common practice found in most North American schools.

At the high school level in the United States, higher numbers of ethnic and linguistic minority students have been found in the lower level streams (Braddock, 1990; Harklau,

1999; Medina, 1988). Several American studies (Braddock, 1990; Medina, 1988; Mehan, Hubbard, & Villaneuva, 1994) demonstrate that ESL students are over-represented in lower-track programs. Using the High School and Beyond (HSB) survey and the National Longitudinal Study of the High School Class of 1972 (NLS) databases, Braddock (1990) investigated streaming in high schools and its implications for racial and ethnic subgroups. In 1982, in comparison to White students, African-American, Hispanic, and American Indian and Asians (one category), were underrepresented in the academic streams; although both African-American and Hispanic students were underrepresented in the general stream, American Indians and Asians were over-represented. All four categories of ethnicity/race were found to be highly over-represented in the vocational streams.

In Canada, similar concerns have been addressed. Visible minority and Aboriginal students tend to be registered in special education and non-academic streams (Endicott & Mukhuerjee, 1992; Henry, Tator, Mattis, & Rees, 1995). Additionally, newly-arrived immigrants are being channelled into non-academic streams not necessarily for lack of cognitive ability but rather because of their lack of English language proficiency (Northern Alberta Alliance on Race Relations, 2004). The report entitled "*Toward a Diversity and Equity Policy in Edmonton Schools*" indicates that a study conducted in Toronto over a period of two decades found that African Canadian and Aboriginal students were highly represented in basic level programs. Additionally, these students were not able to accumulate enough credits toward a high school graduation. Both Harklau (1999) and Cummins (1986) queried the placement of these students. They questioned whether lower level streaming for these students is a result of schools not being able to separate language proficiency from academic and intellectual ability.

Streaming according to English language ability/proficiency is well instituted in schools across North America (Collier, 1992). In an attempt to provide language and language related content instruction to newly arrived ethnic and linguistic minority students, various language support programs have been instituted in both the United States and Canada. Depending on their English language proficiency levels as measured by various types of language proficiency assessment tools, these students are streamed into various language support programs. In the United States and Canada, the bilingual language support programs available include structured immersion education, early-exit bilingual education, late-exit bilingual education, and two-way bilingual programs (Collier, 1992). English as a second language programs include self-contained programs, withdrawal programs, transitional programs and integration/mainstreaming programs (Ashworth, 1992). Each of these programs offers differential levels of support in terms of the time allocated for language instruction and the type of instruction. Further, not only are there numerous language support programs offered but there also exist hundreds of variations in the implementation of these programs (Collier, 1992).

Unlike the abundance of research that exists on the effects of academic and vocational streaming on academic achievement, there exists a paucity of work that has investigated the association of language streaming and its association to academic achievement. Although much research has been conducted in the United States and Canada on the relationship between bilingual and immersion programs and academic attainment, very little has been reported on the association of English as a second language streaming and academic performance. To note, is that in Canada, unless students are registered in

bilingual French programs, all ethnic and linguistic minority students who require English language support attend ESL programs where English is the language of instruction.

In a research synthesis of studies conducted in this area, Collier (1992) argued that Ramirez's (1992) investigation on the effectiveness of three programs, that of immersion strategy, early exit, and late exit, found that although the K-1 students in all the three programs did not reach the United States national educational norms at the 50th Normal Curve Equivalent (NCE), they performed well and comparably on standardized tests of basic skills, reading and Mathematics after two years of instruction. However, two years later, students enrolled in the immersion strategy program were found to be regressing academically. Collier (1992) wrote that these students "were losing in NCEs relative to the national norm group, and in some cases, were losing at a greater rate of loss with each succeeding year" (p.192).

Although program differentiation has not been considered in the following studies, the results from these studies allow one to view in general, the academic performance of ethnic and linguistic minority students enrolled in ESL programs. Cummins' (1981a) study investigated the vocabulary attainment of 1,200 young immigrant students who arrived in Canada at age 6 or younger and who were for the first time exposed to the English language. These students were tested on vocabulary items at different intervals of time (Grades 5, 7, and 9) during their school career. After five years of schooling in English only, these students scored between the 40th and 45th NCE. Between the 7th and 9th year of schooling these students' NCE scores increased slightly. The students' vocabulary test scores had reached the 45th to 50th NCE. Similar patterns were found in Collier and Thomas's (1989) American study which investigated just over 3,500 students, mostly of Asian and Hispanic

descent who were at the early stages of English language acquisition. These students attended ESL instructional support for 1-3 hours per day and attended mainstream classes for the rest of the school day. Unlike Cummins' (1981a) study, Collier and Thomas (1989) used Reading and Mathematics tests to identify the longitudinal academic performance of their sample. Although the NCE scores in Mathematics increased after two years of English-only instruction, after 6 years, the Mathematics NCE scores decreased. The reading scores demonstrated the same pattern.

ESL pull-out courses have also been found to be ineffective (Thomas & Collier, 1997). Even after controlling for socio-economic factors and contextual variables, the academic performance for ethnic and linguistic minority students enrolled in this type of program was found to be comparatively low. By the end of Grade 11, these students scored at the 31st NCE or 18th national percentile. Collier (1992) argued that students who are taught entirely in the second language (English) not only have trouble keeping up with the norm group, but also their academic performance tends to slide as they reach upper elementary and secondary schooling.

The research literature has demonstrated that both academic and language streaming are negative influences on academic achievement for ethnic and linguistic minority students and that similar results have been found for their educational outcomes, that is, whether these students graduate from high school. Results from studies that investigated the association of academic streaming and graduation rates from as far back as the mid- to late- nineteen eighties indicate that at-risk students are more likely to abandon education if academic streaming is in place (Bryk & Thum, 1989). Similarly, Oakes (1985) found that students who had been streamed at general and basic academic levels were more

likely to have problems staying in school. Equally, results from Barro and Kolstad's (1987) study indicated that sophomore students registered in vocational tracks dropped out of school at a rate of 19.7%, in comparison to 16.6 % in the general program. Only 5.8% of the students in the academic programs dropped out of school. Streaming, in particular academic streaming, is obviously associated with disengagement from school and can thus be seen as an at-risk factor.

In the last few years, Canadian educators and researchers have investigated the association between English language streaming placement and its association to high school graduation. Roessingh and Field (2000) observed that even the most academically competent ESL students had a dropout rate between 50% and 70%. Recent findings from a Canadian study indicate that the dropout rate for ESL students differs depending on the ESL intake placement based on English language proficiency (Watt & Roessingh, 2001). Watt and Roessingh's (2001) longitudinal study in Calgary, Alberta, followed the progress of 295 ESL students in an ethnically diverse high school. Their results indicated that 95% of the students who had been placed in the beginner level language stream dropped out of high school, compared to 70% for those who had entered into the intermediate language stream and 50% for those in the advanced-language stream.

These findings imply that the lack of language and the resulting effects of streaming are detrimental to the educational outcomes of ethnic and linguistic minority students who are attempting not only to acquire language proficiency but also sufficient high school course credits required for mainstream high school graduation. In a similar vein, Wyatt-Benyon, Ilieva, Toohey and Larocque's (2001) Canadian study found that ESL students who were recruited for an ESL Co-op program on the grounds that they were "judged to have

insufficient English language skills to participate according to normative expectations in mainstream courses required for the standard secondary school graduation” (p. 405) were not able to qualify for high school graduation if they chose this option. As one student in the study reports:

When you take ESL, and I say I want to graduate because it is quite important here to be a Grade 12 graduate, and they have now told me that I cannot take part in regular classes after this program because I have taken the ESL program. They should tell you from the start that if you take ESL Co-op and if your age is over 18 years at the end of it, there is no chance of graduation from regular classes. They do not say a word about that and they just tell you take the program and you can do graduation classes after. Now, they say you are over 18 years and you cannot take regular classes.

To further yourself at any level, you need your graduation and that we cannot do. I would like to take further courses, but I can't because I am stuck.

Op cit, pp. 411-412

Similar findings have been found in an ethnographic longitudinal study conducted in the United States by Harklau (1999). Harklau writes that an ESL participant in a lower track program revealed that in one class, the teacher prepared material for only three days of the week and the other two school days, the students could do whatever they wanted to. Roderick (1993) suggests that when schools are organized such that there exist high degrees of academic differentiation, students who are considered as at-risk youths are more likely to be given less attention.

Furthermore, it has been observed that students enrolled in lower track programs find their education pointless, boring, less challenging and rewarding. These feelings and thoughts generally end up with these students' disengagement from classes and premature school leaving (Kronick & Hargis, 1990; Radwanski, 1987). Although it has been recognised for more than decade that in streaming students into curricular structures and language support programs which may not fit their perceived needs is detrimental to their academic achievement and thus educational outcomes, this practice continues. One can only surmise that English as a second language learners are at risk for not being given the chance to achieve educational standards and norms similar to the majority population. Streaming, be it academic or language streaming (language proficiency), is a possible factor in a language minority student's decision to drop out of school.

2.5.8 Social Promotion and Retention

Policies in social promotion and retention in the U.S. have seen a yoyo-like motion, from social promotion being fostered in the 1970s, to the 'back to the basics' and the grade retention movement in the 1980s, and back again to social promotion in the 1990s. The latter shift was largely due to the impact that high standards had had on the academic performance of minority and low-income children (Alexander, Entwisle, & Kabbani, 1999). With recent debates in the United States on "NO CHILD LEFT BEHIND" and with schools being made accountable for students' performance on standardized tests, there seems no doubt that the issue of social promotion and retention will once again come to the forefront.

Research in this area has repeatedly demonstrated that retention of students is not as effective as their being promoted to a higher-grade level (Hammack, 1987; Karweit, 1991; Niklason, 1984). Using the Fall River survey data set, Roderick (1993) found that 77% of

the students who were retained dropped out of school in comparison to 25% for students who had never repeated a grade. On measures of academic achievement, personal adjustment, self-concept, and attitudes towards school, promoted students performed better than those students who were held back. Roderick reports that other longitudinal studies that investigated students' academic achievement over a five-year span after retention found that students who were retained never caught up academically with those students who had been promoted. In other words, retained students simply lagged further and further behind. In contrast, LeCompte and Dworkin (1991) observed that the practice of retention is effective, but only so for White students from middle-class backgrounds, with IQ ranges above 100, and standardized test scores close to or at the national norm.

Roderick's (1994) later study confirmed that being overage due to retention, whether single or multiple occurrences, not only increased the probability of school leaving, but also caused students to be twice as likely to drop out of school at the age of 16 when they were no longer compelled by law to stay, regardless of the grade level they were in. In addition, students who were retained in a grade at the primary school level were more likely to drop out of school. Roderick observes that "In 1990, as many as one-third of youths were overage for grade by the time they reached high school" (p.125).

Roderick (1993) concludes that when immigrants enter a school system, they may be placed at a lower grade level rather than at a grade level appropriate for their age. In the Fall River data set that she used for her investigation, she found that although 8% of the sample was never retained, they were overage for their grade level. She questions whether a youth's age has an effect on the probability of dropping out or, after controlling for the student's age, if retention itself has an effect beyond the impact of being over-age for grade. Results

from her study suggested that students who are overage for grade level are more likely to drop out and more likely to leave school at any time during their high school education (Roderick, 1993).

Alexander, Entwisle and Kabbani's (2001) longitudinal study confirmed Roderick's (1994) results, finding that 80% of the students who had multiple occurrences of grade retention dropped out of school and, of those who were retained in the primary and middle schools, 94% of the students dropped out. Roderick (1993) concludes that policies of retention are detrimental to those who may have aspirations of graduating.

Although these results indicate that grade retention is associated with dropping out of school, Alexander, Entwisle and Kabbani (2001) and Roderick (1993) questioned the causal link. In their view, poor school adjustment and low levels of achievement are often 'backdrops' to both the problem of retention and of dropping out. Their longitudinal studies on students from the Baltimore area confirmed the results of other studies and indicated that such was indeed the case (Alexander, Entwisle, & Dauber, 1994; Dauber, Alexander, & Entwisle 1993).

A review of the literature in this area provides some evidence of a definite relationship between grade retention and academic achievement and educational outcomes. Furthermore, considering that language minority students are more likely to be enrolled in grades levels not appropriate for their age, there is less likelihood that these students will be educationally successful. Although this variable is not investigated in the present study, it has been included in this review of the literature for its possible contribution in understanding some of the issues language minority learners may face when attending adult learning centers. The psychological and emotional issues facing ESL learners with regard to

older learners in the class and the language barrier may possibly affect their educational outcomes.

2.5.9 Employment

In 1991, 50% of the participants in the Canadian School Leavers Survey (Gilbert et al., 1993) reported that they worked while attending school and, two-thirds of the participants stated that they had worked some time during the school year. In the United States, it was found that 50% of high school juniors were working, of which 76% worked more than 20 hours a week ("Learning Conditions," 1989, as cited in LeCompte and Dworkin, 1991). Results from D'Amico's (1984) study indicated that there exists a positive relationship between part-time work and academic performance. Various researchers have found that after controlling for family background, school performance, and other background characteristics, high school students who worked more than ten hours per week were at greater risk of leaving school early (Barro & Kolstad, 1987). Similarly, Lawton (1992) and Steinberg and Dornbush (1990) found that adolescents who work more than 15 hours a week while still at school, were more likely to miss classes, resulting in lower academic achievement and culminating in these students leaving school early. Ekstrom, Goertz, Pollack and Rock (1987) found that students who left school prior to graduation had worked for pay slightly more than those who graduated from school. These students worked more hours than the 'stayers,' received hourly wages, and found their jobs more enjoyable. Additionally, the participants reported that their jobs were more important to them than school. These results lead one to conclude that research in this area is contradictory. Furthermore, one wonders why students who work for minimum wage and usually at menial

jobs find their jobs more relevant and enjoyable than studying towards high school graduation.

The relevance of education to future careers appears to figure strongly in some aspects of the dropout literature. According to LeCompte and Dworkin (1991), students perceive that having a secondary school graduation diploma does not relate strongly to a job or career goal, and that the primary consideration about coursework for students is its value beyond high school. Data from Fine and Rosenberg's (1983) study indicated that Black and Hispanic student populations who dropped out of school felt that the education system had failed to deliver "occupational mobility and traditional markers of success" (p. 260). Additionally, in contrast to the majority population, LeCompte and Dworkin (1991) borrowing from other studies (Coleman et al., 1966; Cricklow, 1986; Mickelson, 1990; Ogbu, 1978; Sleeter & Grant, 1987) observed that students who come from minority backgrounds adopt an "abstract attitude," whereby they perceive that schooling is the necessary route to upward mobility and success. However, they also adopt a "concrete attitude," where they realize that upward mobility and success may preclude them and that their goals are probably unrealistic. These contradictory perceptions may eventually influence the minority student to disengage from schoolwork.

In a similar vein, models of cost-benefit analysis have also been used to explain causes for dropout behaviour by researchers who argue that, if students perceive that their opportunities for gaining employment and higher incomes will increase by staying in school, chances of their dropping out will be less likely (Bickel & Papagiannis, 1998; Stage, 1989). However, Wehlage (1989a), suggested that students' opportunity to develop this perception suffers because schools traditionally are more involved in preparing for college entrance the

relatively few students who will attend post-secondary institutions. Thus, engagement and rewards for studying are more difficult for the majority, who are planning to be in the work force. The study makes the point that, in secondary education, “the learning process is...rewarding only that narrow range of intellectual competence developed and displayed at school” (p.10).

In contrast to the studies mentioned above, Landon’s (1997) Canadian study suggests that school-related factors are not valid enough reasons for learners’ decisions to leave school early. His study, which included data from six provinces over a 15-year span, demonstrated that having a legislated minimum wage in the work force encouraged youth to seek employment. He observed that the effect of the minimum wage has led to a decline in high school student enrolment rates of 16- and 17-year-old males and 17-year-old females. Therefore, the laws of minimum wage that were put in force to minimize the exploitation of youth in the labour force have in fact created an attractive alternative to schooling. Alexander, Entwisle and Kabbani (2001), in a similar vein, suggested that when future dropouts are faced with what they perceive to be attractive opportunities in the workforce, schooling may take second place. Although not included as a variable in this study, this variable has been included in the review of the literature for its potential to provide an understanding of why some LEP students might find that dropping out is more lucrative than remaining in school.

2.5.10 Family Socio-Economic Status (SES)

The terms socio-economic status and/or social status are used by sociologists, researchers and others to indicate various levels in wealth, power and prestige in society. Although, these levels are not always consistent, no single variable is seen to be an effective measure

of socio-economic status (Woolfolk, 1998). Further, inconsistency exists in the numerous ways that the term is operationalized. In the United States, when poverty is defined as income below \$13,359 for a family of four living in an urban area, one in four adolescents under the age of 18 is identified as living in poverty (Macionis, 1994). One of the most commonly used indicators of students' socio-economic status in educational research in the United States is the eligibility for the 'free lunch' program. In Canada, there is no official definition of poverty (Canadian Council of Social Development, 2004b). Statistics Canada, a government agency, does not define the term poverty, however, it defines a series of cut-offs based on income where individuals may be seen to be living under 'straitened circumstances.' For example, in 2003, a family of four living in a community of residence of over 500,000 people, with an after tax income of \$31,424 per annum is seen as living in straitened or difficult circumstances (Canadian Council of Social Development, 2004a). The differences in the operationalization of the term and the numerous income levels associated with socio-economic status make comparisons across income levels difficult to generalize between various populations and countries. However, comparisons can be made according to social stratification, that is, lower, middle or upper socio-economic classes.

An overwhelming majority of studies investigating the relationship between academic performance and socio-economic status or social class have found that there exists a strong correlation between family socio-economic status and academic achievement (McCallum & Demie, 2001). However, investigations using single indicators of socio-economic status such as parental income, education, or occupation, demonstrate that the relationship between SES and academic achievement is seen to be weaker (Alwin & Thornton, 1984; Goleman, 1988; White, 1982). When contextual factors such as parents'

attitude towards education, aspirations for their children, and intellectual activities of the family are included, the correlation is seen to be much stronger (Laosa, 1984; Peng & Lee, 1992; White, 1982). For example, students from low SES backgrounds with access to parental involvement in the home environment demonstrate higher academic achievement scores (Datnow & Cooper, 1996). In contrast, Okpala, Okapala and Smith's (2001) study found that when parental involvement, instructional expenditures, and family socio-economic attributes were used as variables to predict mathematics achievement scores of Grade 4 students, only family socio-economic status as measured by enrolment in free/reduced lunch program was found to be related negatively to students' mathematics academic performance. One can conclude that although contradictory results have been found in the literature, SES is still seen as a strong indicator of academic achievement. However, it should be noted that family income alone is not a sufficient enough indicator of SES, since other studies have found that in families of low SES, parental guidance and involvement have been found to be significantly related to academic success (Clark, 1983).

In the United States, much research has been conducted on the relationship between social class and academic achievement. Although these studies have found an association between these two variables, the data and findings predominantly focus on the SES of African-American, Hispanic and/or White student populations. Further, there exists a paucity of research that specifically investigates the relationship between ethnicity, social class and academic achievement (Mortimore, Simmons, Stoll, Lewis, & Eceb, 1998). Reasons cited for this lack include the difficulty of obtaining data pertaining to social class (Gillborn & Gipps, 1996). Of those studies that have investigated the association of social class to academic achievement, results indicate that students from ethnic and linguistic

minority groups who belong to a higher family SES bracket tend to not only demonstrate higher academic performance on test scores but also they stay in school longer (McCallum & Demie, 2001).

A recent study conducted in the United Kingdom found similar results. Using British Census data, in particular, designated home postal codes and enrolment or eligibility for free school meals, to explore the association between social class, ethnicity and educational performance, McCallum and Demie (2001) found that ethnic minority students from low SES backgrounds, passed fewer General Certificate of Secondary Education (GCSE) courses than those students who were classified at the mid and high socio-economic levels. In a study that utilized data from the National Education Longitudinal Study (NELS), other researchers investigated the relationship between the role of ethnic/cultural characteristics, SES and educational performance (Blair, Legazpi-Blair, & Madamba, 1999). Four groups of students were identified and used in this study: White, African-American, Asian-American and Hispanics. Social class-attributes were operationalized as parents' marital status, household size, SES (using a family SES quartile), educational resources available in the home, and parents' educational attainment. Ethnic/cultural characteristics included whether the students were foreign-born, what their home language is, whether they resided with extended next of kin, and parental control. Control measures for sex and private school status were also included. Like previous studies, SES was found to be a significant indicator for academic performance. Asian-American and White students who had scored at a higher level on the SES indicators, performed academically at higher levels than students from the Hispanic and African-American groups who had scored lower on the SES indicators. Interestingly, these researchers found that social class-related characteristics were a

significant predictor for African-American students' academic performance, while Asian-American students' academic performance was credited to a combination of both cultural, ethnic and class related attributes. However, as in other studies, the social class attributes were found to be stronger indicators of academic success.

Acknowledging that his operationalization of SES was imprecise, Gunderson (2004) nonetheless, investigated adolescent ethnic and linguistic minority students' academic performance in the Vancouver School District. Using immigration categories and parents' education level as indicators of SES, Gunderson found that students who were classified as refugees and presumed to be of low SES, performed academically at lower levels than those students who arrived to Canada under the entrepreneur category. More importantly, his study showed that there were within-group differences for those students who arrived to Canada under the entrepreneur category. For example, Mandarin speakers from Taiwan, belonging to the entrepreneur class, outperformed the whole entrepreneur group academically. Gunderson (2004) hypothesized that the combination of high SES and access to social and economic capital are responsible for linguistic and ethnic minority students' academic success. In a similar vein, Coleman (1988) maintained that access to financial and human capital existent in a household directly impacts school effectiveness beyond an individual student's academic achievement.

Likewise, the research literature on the educational outcomes of high school students demonstrates that there is a strong association between social class and dropping out of school (Bryk & Thum, 1989; Ekstrom et al., 1987; Rumberger, 1983, 1995; Rumberger & Larson, 1998b). As far back as 1949, social class has been seen to be a predictive indicator of educational outcomes (Hollingshead, 1949). In his investigations, Hollingshead (1975)

found that 100% of the students belonging to the top two social classes stayed in school, while 92% of the students in the middle SES group stayed in school. On the other hand, 11% and 59% of the students identified as belonging to the lowest and second lowest SES groups respectively remained in school. Similar trends were found by Stedman, Salganik and Celebuski (1988). These researchers, using data from the High School and Beyond survey database, found that dropout figures for students from the lowest fifth income distribution was more than double (24%) that of other socio-economic groups (11%). Baltimore, which had the highest dropout rates in the United States (Annie E. Casey Foundation, 1997; Bomster, 1992) was the site of a long-term study called the Beginning School Study (BSS). Having followed students over the course of their school career, Alexander, Entwisle and Kabbani (2001) found that 60% of dropouts came from families with low socio-economic incomes. Likewise, other investigations have found that socio-economic status is a predictive indicator of dropping out of school (Barro & Kolstad, 1987; Rumberger, 1983, 1995).

Similar to work conducted on ethnic and linguistic minority students academic achievement in relation to social class, few North American studies exist that investigate other than African-American, Hispanic and Asian-American student populations. Nonetheless, of those studies that have investigated the association between social class, educational outcomes and ethnicity, results consistently indicate that SES is an influential factor in predicting dropouts. Dropout rates for adolescent Hispanic students from families with incomes lower than \$10,000 is much higher than those of White non-Hispanics with similar family incomes (Rumberger, 1981). Using data from the National Longitudinal Survey of Youth Labor Market Experience, Rumberger (1981) also found that Hispanic

students dropped out of school at a rate that is one and a half times more than disadvantaged Whites.

Using both direct and indirect evidence in their review of the research literature on dropouts among language minority youth, Steinberg, Blinde and Chan (1984) found that socio-economic status was an extremely strong predictor for language minority students' educational outcomes. Surprisingly, when SES was held constant, Hispanic students tended to have higher dropout rates than students from other ethnic and linguistic minority groups. These results were consistent even when SES was defined broadly or directly. The researchers conclude that for the Hispanic student population, in addition to ethnicity and SES, early academic performance was the chief predictor for these students leaving school prior to completing high school.

In Canada, researchers using the data from the Leaving School Survey (Human Resources and Labour Canada, 1993) similarly found that socio-economic status is one of the best indicators of students dropping out of school. Students who came from families where there was unemployment were more likely to drop out. Dropouts in this survey reported that 14% of their fathers and 30% of their mothers were not working in comparison to 7% of fathers and 24% of mothers for those students who graduated. Similar to the literature on the effects of SES on academic performance, alternative indicators of SES have been shown to be predictive of family SES. In the same Canadian study mentioned above, it was found that, of those students that dropped out of school, 45% of the dropouts came from families where one of the parents had not graduated from high school in comparison to 32% for the graduates.

The research literature on the association between socio-economic status or social class and educational performance and outcomes identifies SES as an influential and a strong predictor of academic success. Clearly, research results are not always consistent; however, one can safely conclude that SES is a factor that needs to be considered in examining correlates of educational outcomes. More interesting are the results that Gunderson (2004) has found. The within-group differences that he found very clearly indicate that SES is not solely responsible for the academic success of ethnic and linguistic minority students. Other factors or indicators in conjunction with SES need to be investigated.

2.5.11 Absenteeism

Absenteeism or truancy from school can be seen as an avoidance tactic for many reasons, including attention seeking, the avoidance of negative internal and emotional states, the avoidance of social and academic evaluative situations, and opportunities for social and recreational activities with peers outside school (Kearney, 2000). Although some of the causes of absenteeism may be legitimate, once students go down this slippery path, the academic and educational consequences that result from this behaviour can be detrimental to the future well being of the student. Fallis and Opatow (2003) opined that class cutting is a slow motion process leading to early school leaving.

Absenteeism, one of the factors related to student engagement, has been frequently used as a variable in studies investigating the dropout phenomena. However, this is not the case for those examining possible factors that may influence academic achievement. Roby (2004) suggested that although absenteeism is seen as an interesting factor, it is nonetheless “overlooked or taken for granted as interesting but meaningless statistic” (p.4). A similar

observation was made by Lamdin (1996). Lamdin noted that studies that use the production function or input-output approach to evaluate student performance do not generally use attendance as an independent variable. Further, he argued that this variable is noteworthy for consideration because of its implications for policy and the allocation of financial and human resources to improve attendance rates.

An early study investigating the effects of students transitioning from middle school to high school showed a trend between academic performance and absenteeism rate; students' academic performance decreased while absenteeism increased (Felner et al., 1981). Caldas (1993) studied the direct effects on, and the contribution of, several input and process factors on the academic performance of students. The data for his investigation came from 1,301 elementary, middle/junior high, high, or combination public schools in Louisiana. Using Pearson correlation coefficients and multiple-regression techniques, he found that school attendance had the strongest correlation ($r=0.36$). In other words, as attendance increased so did academic achievement. Similarly, results from his regression model indicated that student attendance had the strongest effect ($p<0.001$). In his separate analysis of primary and secondary schools, Caldas (1993) found that although the effect of student attendance on academic achievement was positive for both types of schools, the degree of the effect for secondary schools was double that of primary schools.

Lamdin (1996) also set out to investigate the relationship between attendance and academic achievement. This study utilized data (school characteristics, students, and measures of performance from standardized tests) from 97 public elementary schools from the 1990 report by the Baltimore Citizens Planning and Housing Association (CPHA) for one school district in Baltimore, Maryland. Using regression techniques to understand the

relationship between students' performance scores on the California Achievement Test and various independent variables which included attendance rates, Lamdin found that attendance had a positive influence on student performance.

Roby (2004) studied the relationship between school attendance and student achievement in Ohio schools. The purpose of this study was to compare the results of the Ohio Proficiency Tests taken by students in Grades 4, 6, 9, and 12 in relation to school attendance. Findings from this study indicate a significant relationship between student attendance and student achievement. The correlation between these two variables was found to be moderate to strong, with the strongest relationship found at the Grade 9 level.

The relationship between absenteeism/attendance and dropping out of school indicates similar trends. In an early review of the literature, Rumberger (1987), citing Bachman, Green and Wirtanen (1971) and Whelage and Rutter (1986) observed that absenteeism, a marker of behavioural problems in school, is associated with early school leaving. In a similar vein, other scholars have also noted that those with a history of absenteeism, who often have academic difficulties and are regularly disengaged from school life, attempt to deal with or escape from these problems at some critical point by leaving school (Croninger & Lee, 2001).

Using data from the High School and Beyond Survey, Ekstrom, Goertz, Pollack, and Rock (1986) studied several questions relating to dropouts. One question asked was, "Why does one student drop out and not another drop out?" One of the findings from this study indicated that students who left school prematurely were twice as likely as stayers to skip classes (54% versus 25%).

Alexander, Entwisle and Kabbani (2001) designed a study based on data from the Beginning School Study (BSS) which had been monitoring since 1982, the educational progress of a representative sample of elementary school-aged children in 20 Baltimore public schools starting as early as Grade 1. Using a life process framework, these scholars argued that “the roots of dropout extend deep and broad” (p.3). Among many other variables, they argued that absenteeism even as early as Grade 1 is an indicator for early school leaving. Results from their study indicated that at the Grade 1 level, future dropouts had a mean absentee rate of 16.4 while future high school graduates had a mean of 10.2 absences; at the middle school years, future dropouts averaged 27.6 absences in contrast to 11.8 absences for future graduates; and, at Grade 9, a mean of 46.8 absences were recorded for future dropouts while a mean of 13.5 were registered for future graduates. By this stage, future dropouts were missing 25% of the total number of school days.

Davison Aviles, Guerrero, Howarth and Thomas (1999) conducted a qualitative study with 72 young Chicano/Latino people between the ages of 17 and 24 who had dropped out of school. They used both direct questions and group interviews to collect their data. The participants in their study noted that absenteeism was the reason for their leaving school. The participants reported that they were unable to keep up with schoolwork and the make-up work after an absence. These students were aware that their chronic absenteeism affected their ability to gain the credits necessary for graduation. However, migrant family travel, work schedules, and disinterest in coursework were offered as reasons for their not attending classes.

In the existing body of research literature, absenteeism or school avoidance has been found to be a fairly reliable indicator of academic success. However, it has also been argued

that it is not alone responsible for academic success for other variables together with absenteeism may have interacting influences (Borland & Howsen, 1998). Regardless of the method of analysis, that is, whether researchers have studied the relationship between absenteeism and academic performance using correlation analysis or those that have used regression techniques with various other variables, the general trend in the literature indicates that absenteeism is highly predictive of both academic achievement and rates of high school completion (Bachman, Green, & Wirtanen, 1971; Carbonaro, 1998; Ekstrom et al., 1986; Goldschmidt & Wang, 1999; Johnston, 2000; Lamdin, 1996; Rumberger, 1995; Rumberger & Larson, 1998a). These findings provide reasonable justification for the inclusion of the variable in the present study.

2.5.12 School Ranking

In any democratic society, citizens or tax payers are entitled to fair access to public education and to high standards of educational quality. Implicitly, the equitable distribution of the quality of education, be it in the form of teacher qualifications and/or access to material resources, is a fundamental given in democratic societies. If such is indeed the case then in democratic societies all school aged children should be receiving both similar or rather 'universal' standards of educational input and material resources to succeed academically, regardless of individual and/or societal differences. However, previous research has demonstrated that educational institutions have been partially responsible for students' educational outcomes (Cusick, 1973; Davison Aviles et al., 1999; Dorn, 1996; Tanner, Krahn, & Hartnagel, 1995). Further, in her comprehensive review of the dropout literature, McHenry (2000) found that school related characteristics which include grade retention, academic achievement, school climate/relationship with school discipline issues,

absenteeism, extracurricular activities, and special education status are also associated with students' decisions for dropping out of school. Even more disturbing are the observations of a recent study that found that ESL students were frustrated with inadequate instructional practices (Harklau, 1999). These findings are in direct contrast to Coleman's (1966) and Hanushek's (1989) suggestion that schools have little influence on educational outcomes. Not only do these findings implicate educational institutions as being partially responsible for the successful educational outcomes for students, but it also begs the question, how does one make educational institutions accountable for the equitable distribution of high quality instruction and material resources?

A fairly recent and highly contested area, school ranking, has recently become one of the most debatable areas among educators in British Columbia, Canada. Used as an institutional performance indicator, school ranking in British Columbia has recently been employed to make comparisons of the academic performance of students on provincially based standardized tests at the Grade 12 level across various educational institutions (Cowley & Easton, 2004). The Fraser Institute, an "independent" economic, social research and educational organization, has since 1998 published a Report Card on British Columbia's secondary schools. Using student examination results from the Ministry of Education's provincial examinable courses, The Fraser Institute computes results for each school in the province based on a scale from zero to ten. This overall/composite rating is based on seven indicators, including the average provincial examination mark, percentage of provincial examinations failed, difference between the school mark and examination mark in provincially examinable courses, difference between male and female students between the school mark and examination mark in provincial examinable courses for English 12,

difference between male and female students between the school mark and examination mark in provincial courses for Mathematics 12, the number of provincial examinable courses taken per student, and the graduation rate. The combination of these seven indicators produces the overall school rating province wide.

Gunderson's (2004) ground breaking Canadian study on the academic performance of ethnic and linguistic minority students in the Vancouver school district used the Fraser Institute's school ranking and the percentage of ESL students enrolled at each school to investigate the academic achievement of LEP students. His findings reveal a 0.78 correlation between school ranking and the percentage of ESL students in each of the 275 secondary schools. In other words, the higher the percentage of ESL students in a school, the worse its performance was on the provincial standardized examinations. When investigating the relationship between SES, percentage of ESL in each school and school ranking, his data reveals that ESL students of low socio-economic status attended schools that had a high enrolment of ESL students which in turn also had the worse school rankings.

Although highly controversial on the grounds that in many studies, the computation of school ranking has serious methodological problems with the collection of data (Kirk & Corcoran, 1995) and the interpretation of data (Gaskell & Vogel, 2000), Gunderson's study still brings to the forefront many queries that relate to the role of the educational institution in the academic performance of ethnic and linguistic minority adolescent students. For example; why is it that some schools rate closer to the top and some closer to the bottom? Who are the students who attend these schools and what are their individual/demographic characteristics? What are the institutional characteristics of the best and the worst schools?

Is there a relationship between academic achievement, successful educational outcomes and school ranking?

The results of Gunderson's (2004) pioneer study on the role of school ranking and LEP students' academic achievement are disturbing. Folk theory in immigrant settlement informs us that in general many newly arrived immigrants initially find housing in low income areas or in ghettos where other members of their community live. This in turn, means that higher numbers of ESL students will be registered in the schools in those areas. Gunderson's study has clearly found a relationship between school ranking, percentage of ESL students enrolled in each school, and SES. If ESL students attend schools with high rankings and with high percentages of ESL students, then what are the chances of these students' educational success? Although controversial, based on Gunderson's findings, this variable has been chosen for inclusion in this study.

2.6 Conclusion

Despite the variation found in the methods used to calculate dropout rates, in the United States, a slight decline in graduation rates has been reported (Miao & Haney, 2004). Whatever the percentage of decline, African American and Hispanic students' high school graduation rates are still substantially lower than those of the White majority adolescent student population (Miao & Haney, 2004). Considering the high numbers of both African American and Hispanic youth who do not graduate from high school, it is not difficult to understand why there exists an extensive amount of research, both historical and contemporary, in the area of adolescent high school non-graduation rates. This concern has become even more pronounced in the United States with the No Child Left Behind Act and the subsequent mandatory accountability measures required of public school systems.

However, the literature reviewed on some of the correlates of academic achievement and the educational outcomes of ethnic and linguistic minority students indicate disparate findings among the variables that have been so far identified as possible correlates for high school non-completion. These disparate findings are most likely related to methodological differences in defining and calculating dropout rates, and the operationalization of particular variables which include SES, rates of absenteeism, and school mobility. Furthermore, contradictory findings have been found for the variable, ethnicity. Some studies indicate that Asian, African-American and Hispanic high school students are more likely to attend college than White students while other studies indicate that ethnic and linguistic minority students worldwide under perform academically. While a few of the large American studies use ESL services as a variable (McCarthy, 2002), ESL services was not found to be significantly related to dropping out. Although the studies in this chapter do not represent the depth one might hope to include on the academic achievement and graduation rates of English language learners, they do provide credence for the variables included in this exploratory study.

The present study was undertaken to add to the body of knowledge variables that may pertain to adolescent ethnic and language minority students' educational pathways and outcomes. Specifically, the present study investigated five variables not yet seen in the few studies examined in the dropout literature that pertain to ESL learners: percentage of ESL students in the school population, school ranking, immigration class, language streaming and the length of time taking ESL support classes. Further, this study contributes to the knowledge base pertaining to ESL students and resilience. The information gained from this study may first, lead policy makers to review decisions on the length of time allocated to

ESL students for language support, and second, may provide ESL students with opportunities to acquire high school graduation diplomas that are the equivalent of those from mainstream high schools.

Chapter III

Methodology

3.1 Introduction

The purpose of this chapter is to present the research design and methodology used in this study. The hypotheses, questions and the type of data used for this investigation have guided both the design and the methodology. Based on the review of the literature in this area, two main hypotheses were formulated in order to understand the relationship between English language learners' individual, institutional and academic performance indicators and their educational pathways and outcomes. This chapter includes background information about the Vancouver School District, participant selection and source of data, sample description, the research design, the procedures and analysis.

3.2 Background

The present study was conducted in the Vancouver School District, Vancouver, Canada. A large number of students enrolled in this district are from varied cultural, ethnic and linguistic backgrounds. Of the 59,751 secondary students enrolled in the school district in 1996, English language learners (ELLs) comprised 40.2% of the student population (Vancouver School Board, 1996). In some of these schools, more than ten world languages were represented as first languages. However, no single language was found to be dominant (Clark, 1997). In the school year 1996/1997, newly arrived ethnic and linguistic minority students who had registered in the school district came from 106 countries with various levels of English speaking abilities. Furthermore, these students arrived in Canada under various immigration visa categories, that is, as refugee claimants, family class immigrants,

entrepreneurial immigrants, children of diplomats and other various immigration visa categories.

The Vancouver School District operates 18 secondary schools with student enrolment numbers varying from 500 to over 2000 pupils per school. In addition to various other programs, the school district also operates Adult Learning Centers (ADL) to accommodate students over the age of eighteen who wish either to complete their high school diploma through the traditional route of acquiring a high school Graduation Dogwood Certificate or by using the alternate route of the General Education Diploma (GED). In 1996, 5.8% of the total student population in the Vancouver School District was enrolled in Adult Basic Education.

With the exception of French/English bilingual schools, English is the medium of instruction in all schools in the Vancouver School District. All newly arrived ethnic and linguistic minority students wanting to attend school in this district are required to register at the Vancouver District Reception and Placement Center (DRPC), the ESL arm of the school board. The main role of the center is to facilitate the integration of children of newly arrived immigrant families into the school system. Until recently, the staff at the DRPC evaluated the students' academic levels (in English and Mathematics) prior to their entry into the school system, recommended ESL placement within the three phase model that the Vancouver school board operates, and provided school registration services. Newly arrived ethnic and linguistic minority students had to sit for standardized language proficiency and grade level criterion-based mathematical tests from which decisions and recommendations were made to the allocated school for placement into one of the three language support programs that the Vancouver School Board operates. Additionally, these students were

interviewed in their first language by the staff at the Center, multicultural Home School Workers, or professional translators. A structured, interview protocol was designed and used to obtain developmental, educational and family histories (Clarke, 1997).

Further, for each newcomer to the school system, the staff at the Vancouver District Reception and Placement center collected demographic information which included date of birth, gender, mother tongue, country of origin, and immigration visa status. If available, students' previous academic records were also obtained and sent to the neighbourhood schools the students had been enrolled in. Information on the number of countries that the family had lived prior to arriving to Canada was also obtained. To date, individual schools continuously update the school district database by recording the students' academic performance, rate of absenteeism, number of schools attended during their high school career if the changes occurred within the school district, number of credits required for school completion, number of course credits acquired, moves to other school districts or out of the province/country, graduation status, and any other pertinent information on the student.

3.2.1 Language Streaming

One of the British Columbia Ministry of Education's Language Policy objectives indicates that the Government of British Columbia expects all students to achieve proficiency in the English Language (British Columbia Ministry of Education, 1997). The Vancouver School Board's (VSB) ESL policy's main emphasis is "to achieve equity and equality for ESL learners" (McGivern & Eddy, 1999, p.30). These general policy statements are manifested through a three-phase language support model that the VSB has implemented throughout its secondary schools. In order to identify the English proficiency

levels of newly arrived ethnic and linguistic minority students, the students' results from the language instrument that the DRPC administers to newly arrived immigrant students is used to analyse students into three separate language support categories: Reception, Transition, and Integration. The Reception level is considered as an emerging or developing level of English language knowledge where ELLs are assigned several blocks of ESL support plus grade level courses. Between 50-75% of class time is based on ESL support. The Reception level, or beginning English language learners, translates into British Columbia's Ministry of Education (BCMOE) categories of levels 1 and 2; the Transition level is classified as an expanding level of English language knowledge where students are normally allocated two blocks (25-35% of class time) of ESL support, with a content focus on English, Social Studies and/or Science. This level of support is approximately equal to the BCMOE Level 3 standard; finally, the Integration level is for ELLs who are classified as being proficient in the English language. These students are assigned one block of ESL support with a focus on reading comprehension and writing. This level of support is equivalent to the BCMOE's level 4 standards. Based on these categories and individual school's resources, identified ELLs attend ESL instruction in either sheltered or transition ESL classes or are integrated into mainstream classrooms. Although this three-phase language support model adopted by the Vancouver School Board has been in use for the past number of years, the model is arbitrarily used, depending on the individual school's resources (McGivern & Eddy, 1993).

3.2.2 High School Graduation Requirements

Prior to 2004-05, all students attending high schools in British Columbia had to obtain 52 course credits in order to fulfill the requirements to graduate from high school. These credits were based on courses taken during the last two years of high school, that is,

Grade 11 and 12. Of the 52 course credits, 28 credits were needed from a category called Foundation Studies and 24 credits are from the Selected Studies category. Each high school student was required to take 4 credits in each of the following courses: Language Arts 11; Language Arts 12, Social Studies 11 or British Columbia First Nations Studies 12, Mathematics 11/12, Science 11/12. In addition, students were required to have two credits each for courses in Fine Arts 11, Applied Skills 11, Career and Personal Planning 11/12. From the Selected Studies category, students were further required to take a total of 10 credits from a selection of Provincial Grade 12 level courses, and an additional 14 credits from either the Grade 11 or 12 pool of courses. However, there existed some flexibility of choice for some of courses. For example, Accounting 11 and 12 could replace either Mathematics or Applied Skills; Financial Accounting 12 could replace Mathematics or Applied Skills; Information Technology 11 and 12 can be taken to replace Science or Applied Skills, and finally Computer Certification Courses 11 and 12 could satisfy the Science or Applied Skills Requirements.

Ethnic and linguistic minority students who are still in the process of learning English as an additional language are not only required to fulfill the above criteria for obtaining high school certification, but additionally they take ESL support classes, as needed. As stated previously the time spent on ESL support is dependent on the students' level of English proficiency.

3.3 Participant Selection and Source of Data

Using the District Reception and Placement Center's ESL database tracking screen (Student Identification System), baseline data were used to identify all adolescent ELLs and speakers of English as an additional language who had registered at the Vancouver School

Board in the school year 1996/1997. In order to qualify for inclusion in the study, students had to be thirteen years of age at the time of registration, enrolled at the age appropriate grade level (Grade 8), and registered for one of the three language support programs that the Vancouver School Board has in place.

From the Student Information System tracking screen, the sample's academic records for the years 1996-2001 were accessed in order to track students' academic achievements longitudinally over five years (Grades 8 to 12) in four examinable subjects; English, Math, Science, and Social Studies; non-academic; and ESL subjects. Additionally, occurrences of absenteeism, date of entry into the school system, date of birth, data on school mobility, gender, country of origin, immigration class upon entry in Canada, place of residence, names of schools attended, early school withdrawal, names and number of courses (academic, non-academic and ESL) were collected for all participants.

To track students who had either left school prior to graduation or who had stayed the five years but failed to graduate from their respective high schools, students were followed for an additional two years. Data was obtained directly from ADL centers operated by the VSB. Information gathered included course selection, grades achieved, early school withdrawal from ADL, high school graduation, number of academic and non-academic subjects taken, and absenteeism.

From the Vancouver School District's main record center, size of school and number of ESL students in each school were also obtained. The postal address for each school's location was obtained from the VSB's 1996 handbook. Finally, to obtain information on family socio-economic status, data for family median income and the value of household dwelling were obtained from the 1996 Canadian Census data.

3.4 Sample Description

The total number of students identified was 184, all of whom are included in this study. Participants were adolescent immigrants who arrived in the Vancouver School District in the 1996 school year. They were found to be enrolled in all of the 18 schools in the district. Of the total participants in this study, 91 (49.5%) were female and 93 (50.5%) were male. One hundred and eighty two participants (99 %) arrived in Canada from 23 countries. Two participants were not coded in the database for country of origin. The data indicated that the majority of the students (82%) arrived from China, Hong Kong, Taiwan, Korea, and the Philippines. The remaining 18% arrived from countries which include India, Japan, Korea, Pakistan, Vietnam, Venezuela, Romania, Sri Lanka, Czechoslovakia, Lithuania, Mexico, Russia, Ukraine, United States of America, Macao, and the United Arab Emirates. The immigration entry status of the sample ranged from refugee claimants, family class immigrants, entrepreneurial immigrants and caretaker classes. One hundred and eight of the participants (58.7%) arrived in Canada under the Entrepreneur class, 48 (26.1%) arrived as Family class, 12 (6.5%) arrived as Refugee claimants, and nine (4.9%) came under the Caretaker class. An unequal distribution of language proficiency was found among the 184 participants. Fifty (28%) were classified as Reception students, 112 (63%) were Transition students, and 17 (9%) were registered in the Integration program. For the purposes of this study, direct contact with the participants was not necessary.

3.5 Research Design and Data Analysis

The purpose of this exploratory study was twofold. One, to investigate some of the potential variables that would predict the educational outcomes of one cohort of ethnic and

linguistic minority adolescents who attended secondary schools and adult learning centers in the Vancouver School District during the period 1996-2003, and second, to investigate the educational pathways these students followed to achieve successful educational outcomes. Data for this study were collected from students' archival record sources in the District Reception and Placement Center's English as a Second Language database and the Vancouver School District's school database.

Following the University of British Columbia Behavioural Research Ethics Board and the Vancouver School Board's approval, archival data were gathered from the Vancouver School Board's English as a Second Language computer database. This database is used to maintain information for each student that registers for school within the Vancouver School District. Information collected from this database included academic records from Grades 8 to 12, occurrences of absenteeism, date of entry into the school system, date of birth, occurrences of school mobility within the school district, gender, country of origin, immigration class upon entry to Canada, percentage of ESL students registered at each of the participant's school, place of residence, names of schools attended, number of academic and non-academic subjects, early school withdrawal, and graduation requirements.

Preliminary analyses such as frequency distributions, cross tabulations and exploratory normality checks were performed to check the variables and their distribution in this study. The primary dependent variable was educational outcomes, which details the seven pathways that students followed during their high school career. The independent variables are comprised mainly of demographics (country of origin, gender, immigration status and socio-economic status [SES]); school administration details (i.e., number of

school changes [school mobility], school ranking, percentage of ESL students in the schools attended, the number of years of ESL support, absenteeism, and language streams) and the students' academic performance (i.e., grade point averages [GPA]).

The secondary analyses tested several hypotheses to examine significant relationships between the various independent demographic, school administrative descriptors and academic indicators with the dependent variable – educational pathways and outcomes. Specifically, chi-squares and analyses of variance were performed for each set of indicators and educational outcomes. These analyses served as preliminary cursors, determining which of these demographic indicators played significant roles in predicting the educational pathways of the students.

The last stage of analysis initially sought to answer two main hypotheses. The first identifies educational pathways as an important variable which is dependent on several individual demographic information, school administrative factors, and academic indicators. Thus, the primary and secondary analyses that preceded this stage of analysis was performed with a driven focus to identify, if any, the significant predictors of the student's chosen educational pathway. Specifically, *Hypothesis A* states that:

AHo: Individual and institutional factors cannot predict the educational pathways of adolescent ethnic and linguistic minority immigrant students.

AHI: Individual and institutional factors can predict the educational pathways of adolescent ethnic and linguistic minority immigrant students.

The second hypothesis collapses the seven educational pathways into two simple categories – graduate and dropout. This hypothesis is similar in research agenda as the first hypothesis, except that it seeks to identify a broader classification of the students.

Specifically, *Hypothesis B* states that:

BHo: Individual and institutional factors cannot predict whether adolescent ethnic and linguistic minority immigrant students dropout or graduate from high school.

BH1: Individual and institutional factors can predict whether adolescent ethnic and linguistic minority immigrant students dropout or graduate from high school.

3.6 Predictor Variables

Academic achievement, rate of absenteeism, percentage of ESL students registered in the school population, immigration class, school ranking, country of origin, language streaming, gender, length of time taking ESL courses, family socio-economic status, and school mobility are the independent variables selected for inclusion in this study. A large number of variables have been previously investigated in this area, some of which were found to be among those that were frequently cited. Immigration class, language streaming, school mobility, and school ranking have only recently been discussed in the literature.

Academic Achievement

This term is operationalized as the Grade Point Average (GPA) for each of the examinable and non-examinable courses for the full duration of ESL students' time of study. In the Vancouver School District, school grades are reported either using letter grades or numerical scores. To determine the GPA for each participant, where applicable, the letter grades were converted to numeric scores using the scoring system recommended by the British Columbia Ministry of Education. A numeric scoring system was created and a linear regression model was used to determine the reliability of the conversion from letter grade to GPA scores. Grades were recorded and GPAs calculated for the four examinable subjects

using the following conversion metric: A = 4.00, B = 3.0, C + = 2.4, C = 1.9, C- = 1.3, P (Pass) = 1.0, F = 0, I (Incomplete) = 0, SG (Standing Granted) = 0.5, where Standing Granted indicates that the student tried hard in class but did not actually pass the course.

Socio-Economic Status

The variable socio-economic status was constructed using data from the Canadian Census data (1996). Two measures were used to obtain the SES of each participant: family median income level and the cost of dwelling in the participants' neighbourhoods. This variable was computed to have three levels: low, medium, and high. These categories were given numerical scores of one (low SES), two (medium SES), and three (high SES).

Gender

Gender, a dichotomous variable was classified as male or female as indicated in the VSB data base. This variable was coded as zero (female) and one (male).

School Mobility

This refers to the number of times students changed schools in the Vancouver School District in their pursuance of a high school education. The scores ranged from one to four, which corresponded to the number of schools the students attended, including adult learning centers, if applicable. The numbers of changes were recorded as found in the Vancouver School Board database.

Rate of Absenteeism

This variable was computed as a ratio of the total number of classes missed per course to the total number of courses taken over a period of five years. If a participant was found attending an adult learning center, the absenteeism rate included the additional courses and the additional number of years. This is a numerical score which takes on a metric scale.

Immigration Class

These are the Canadian immigration categories that all immigrants are allocated on approval of entry visas. The immigration categories are based on a point system that identifies the types of immigrants arriving to Canada. For the purposes of this study, four broad immigration classes have been utilized, namely, entrepreneur, family, refugee and caretaker class. These four categories were given numerical scores of one, two, three, and four respectively.

Country of Origin

This refers to the participants' country of birth. Each individual country was assigned a distinct country code. The initial letters in each country's name were used to code the data.

Language Streaming

Language streaming refers to language placement level that the Vancouver School Board assigns to each ESL student who arrives to the school district. The placement is based on various language and mathematical standardized tests. The three language streams used in the VSB school district are reception, transition and integration, which were coded as one, two, and three respectively.

Length of Time Taking ESL Courses

This is the number of years students took either ESL courses or received ELC support. The range of values is from one to four. This corresponds to the number of years ESL support was provided.

School Ranking

The data for school ranking was obtained directly from the Fraser Institute's report entitled

“Report Card on British Columbia’s Secondary Schools: 2001 Edition.” The school ranks were recorded as found in the report.

Percentage of ESL Students

The percent of ESL students registered in each of the participant’s school was recorded as found in the Vancouver School Board’s database.

3.7 Criterion Variables

Two dependent variables were used in this study: educational pathways and educational outcomes. Like most other studies in the research literature, dropping out is seen as being a dichotomous variable. The model for educational pathways, on the other hand, has been designed keeping in consideration with what previous research has reported about the perceived value of dropouts, mainstream high school graduation, and graduation from adult learning centers.

Educational Pathways

This dependent variable is seen as the different routes that adolescent immigrant students take during their high school career. The coding for the various routes was ranked from the least desirable to the most desirable. The least desirable pathway is seen to be students dropping out of school and not pursuing further education, while the most desirable is seen to be a traditional mainstream high school diploma. The model for educational pathways is ranked from 1 (worst) to 7 (best) as follows:

- 1) permanent dropout;
- 2) participant stayed in school for five years (from Grade 8-12), did not acquire sufficient credits to graduate and did not attend an adult learning center;

- 3) participant dropped out of mainstream high school, attended an adult learning center but did not graduate by the end of this study;
- 4) participant studied in mainstream high school for five years, did not complete schooling, subsequently attended an adult learning center and still did not graduate by the end of this study;
- 5) participant dropped out of mainstream high school, attended an adult learning center and graduated;
- 6) participant stayed in mainstream high school for five years, did not graduate, attended an adult learning center and graduated;
- 7) participant stayed in mainstream high school for five years and graduated.

Educational Outcomes

This dichotomous variable represents two aspects of academic pursuance that of, high school graduation or dropping out of school. Educational outcomes were coded as zero (dropout) and one (graduation).

3.8 Conclusion

The design of the study has been presented in this chapter. The following chapter presents the findings of the study, including the results of various statistical analyses.

Chapter IV

Results

4.1 Introduction

The purpose of this study was to investigate the association between multiple variables and the educational outcomes of 184 ethnic and linguistic minority adolescent learners who attended secondary schools in the Vancouver School District during the years 1996-2001. Data were collected from student archival records at the District Reception and Placement Center, school records from each of the participant's school and from the adult learning centers.

Descriptive statistics, correlational analysis and regression techniques, accessed on SPSS, version 12.0.1, were used to investigate the variables included in this study. Variables investigated in this study included students' GPA scores, language streaming, occurrences of absenteeism, school mobility, gender, country of origin, immigration class upon entry to Canada, number of schools attended, socio-economic class, gender, percent of ESL student population in the schools attended by the participants, number of years of ESL support, and school ranking. All raw data are available upon request. Data preparation and data screening information conducted prior to the statistical analysis are presented next.

4.2 Data Preparation and Screening

All data were first entered as a Microsoft Excel file based on compiled information collected from the Vancouver School Board. These data were then coded for entry into SPSS, version 12.0.1. The data were first surveyed for inconsistencies of entry and missing values. Inconsistencies detected when frequency distributions were generated for each variable were corrected immediately with the source data (e.g., if a dropout was coded

incorrectly as a pathway seven student). The data were further surveyed for errors unrelated to data entry. Such identified errors were cross-validated and corrected against the original data source.

The frequency distributions generated also verified that there were consistent response and skip-question patterns among the 184 participants. After the data were verified, a profile of all the variables within the dataset was generated to compile a comprehensive 'codebook,' which was used to manage the entire analyses for continued reference and cross-validation. Finally, to complete the preliminary data screening and preparation stage, descriptive summary statistics of all the variables were generated to complement the codebook. These data are available upon request.

4.3 The Educational Pathway and Outcomes of Ethnic and Linguistic Minority Students

The educational outcomes distribution is presented graphically in Figure 4.1 and reported in Table 4.1. The frequency distribution of educational pathways (see Table 4.1) revealed that 26 of the students (14.1%) were permanent dropouts (*educational pathway 1*) in comparison to 74 (40.2%) who managed to graduate from mainstream high schools (*educational pathway 7*). Between the two extreme educational pathways, were students who neither graduated nor went to an adult learning center (ADL) (*educational pathway 2*); students who dropped out, attended an ADL centre but did not graduate (*educational pathway 3*); students who did not graduate from mainstream high schools or an ADL centre (*educational pathway 4*); students who dropped out and went to an ADL centre and graduated (*educational pathway 5*) and finally students who did not graduate from mainstream high schools but went to an ADL centre and graduated (*educational pathway 6*).

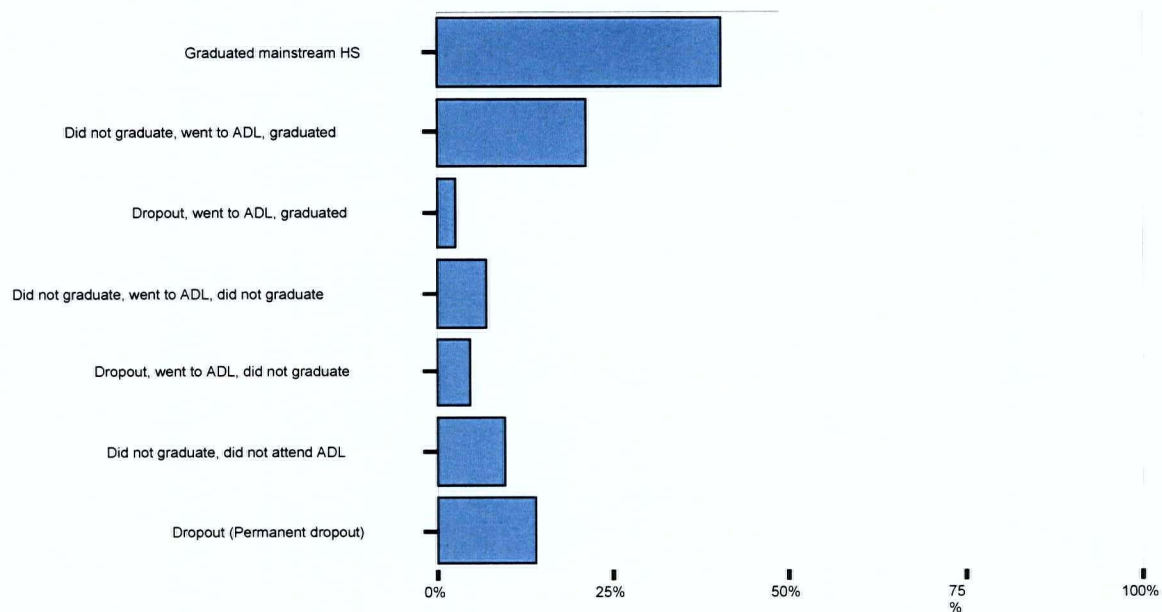


Figure 4.1 Total Number of Students and their Educational Pathways

On closer inspection of the seven respective pathways, dropping out of mainstream high schools is highly undesirable, as not many go back to eventually finish their course requirements. Furthermore, participants who stay in school for the five-year duration allocated for high school study (*educational pathways 2, 4 and 6*) are not always guaranteed to graduate. The data from this study indicated that 70 or 38.04 % of the students stayed on and took courses for five years in mainstream high schools but failed to graduate. Of these

Table 4.1 Frequency Distribution of Educational Pathways

Educational Outcomes	Frequency	Percent	Cumulative Percent
1 Dropout (Permanent dropout)	26	14.1	14.1
2 Did not graduate, did not attend ADL	18	9.8	23.9
3 Dropout, went to ADL, did not graduate	9	4.9	28.8
4 Did not graduate, went to ADL, did not graduate	13	7.1	35.9
5 Dropout, went to ADL, graduated	5	2.7	38.6
6 Did not graduate, went to ADL, graduated	39	21.2	59.8
7 Graduated mainstream HS	74	40.2	100.0
Total	184	100.0	

students, 9.8% (*educational pathway 2*) did not attempt to take further courses at an ADL centre, 7.1% (*educational pathway 4*) went to an ADL centre and by the end of the time allocated for this study had still not graduated; and 21.2% (*educational pathway 6*) of the sample stayed in mainstream high schools for the five-year duration, subsequently attended an ADL centre, and finally managed to graduate with a high school diploma.

In summary, these results paint an encouraging picture, one indicating that a higher percentage of students stayed in school, and did eventually graduate regardless of the pathway taken (*pathway 6* or *pathway 7*) in comparison to those who opted to drop out early.

4.4 Demographic Distribution

4.4.1 Country of Origin

The variable country of origin provides information on the geographical information of the participants' country of origin. Participants included in this study arrived in Canada from 23 countries, of which the majority of the students arrived from Hong Kong (39%) and Taiwan (21.2%), with the Philippines (9.2%), and China (8.7%) trailing behind. The rest of the countries contributed very few students to the sample (see Figure 4.2), consequently limiting the reliability for any conclusive comments.

Because the sample size for this study was not large enough to allow for an analysis of each group of participants who represented their individual countries, it was decided to pool the variances and conduct the descriptive analysis on the respective countries in the later analyses of data.

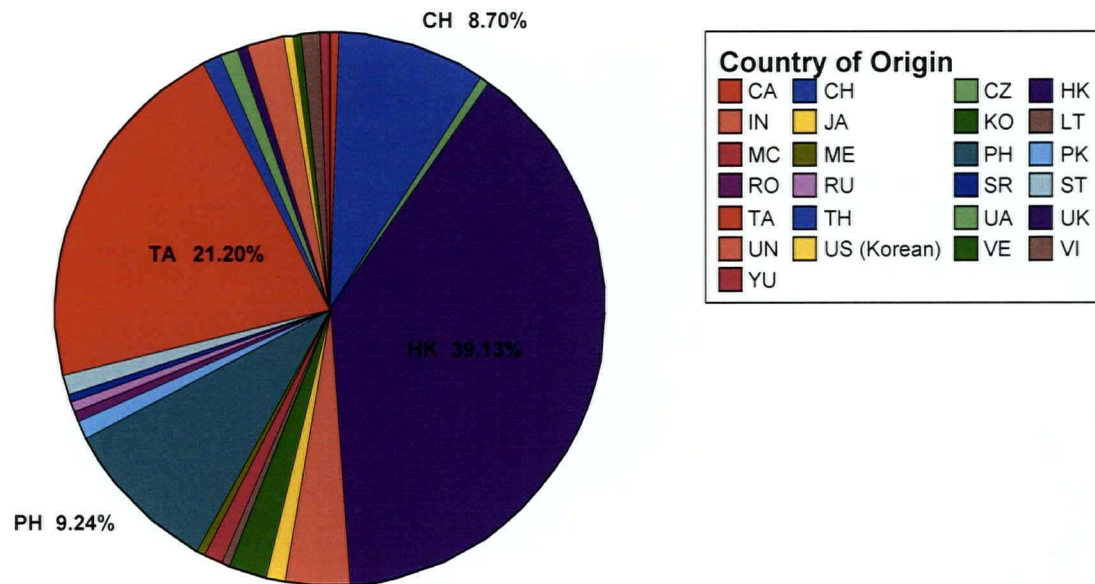


Figure 4.2 Total Number of Students and their Represented Country of Origin

4.4.2 Gender

The 184 participants were almost evenly represented across the gender categories. Females constituted 49.5% of the sample while males made up 50.5%. These figures were analyzed together with educational outcomes in a cross tabulation output (see Table 4.2) in order to get a detailed representation of the gender compositions across the seven pathways.

Interestingly, females were more likely to drop out of the system (57.7% against 42.3%) as well as to graduate from the mainstream high schools (59.5% against 40.5%) than their male counterparts. However a reverse response pattern is observed - the male students predominate across the other educational pathways. The table further indicates that 16.5% of females dropped out permanently from the Vancouver School Board mainstream high school system as compared to 11.8% for male students (*educational pathway 1*).

Table 4.2 Gender Composition across the 7 Educational Outcomes

Educational Outcomes		Gender		Total
		F	M	
1 Dropout (Permanent dropout)	Count	15	11	26
	% within Educational Outcomes	57.7%	42.3%	100.0%
	% within Gender	16.5%	11.8%	14.1%
2 Did not graduate, did not attend ADL	Count	8	10	18
	% within Educational Outcomes	44.4%	55.6%	100.0%
	% within Gender	8.8%	10.8%	9.8%
3 Dropout, went to ADL, did not graduate	Count	1	8	9
	% within Educational Outcomes	11.1%	88.9%	100.0%
	% within Gender	1.1%	8.6%	4.9%
4 Did not graduate, went to ADL, did not graduate	Count	4	9	13
	% within Educational Outcomes	30.8%	69.2%	100.0%
	% within Gender	4.4%	9.7%	7.1%
5 Dropout, went to ADL, graduated	Count	2	3	5
	% within Educational Outcomes	40.0%	60.0%	100.0%
	% within Gender	2.2%	3.2%	2.7%
6 Did not graduate, went to ADL, graduated	Count	17	22	39
	% within Educational Outcomes	43.6%	56.4%	100.0%
	% within Gender	18.7%	23.7%	21.2%
7 Graduated mainstream HS	Count	44	30	74
	% within Educational Outcomes	59.5%	40.5%	100.0%
	% within Gender	48.4%	32.3%	40.2%
Total	Count	91	93	184
	% within Educational Outcomes	49.5%	50.5%	100.0%
	% within Gender	100.0%	100.0%	100.0%

Of the other students who opted to drop out, only a small percentage (1.1% of the females and 8.6% of the male students) went on to adult learning centers and did not manage to graduate (*educational pathway 3*). On the same note, an even smaller percentage (females = 2.2%, males = 3.2%) went on to an ADL centre and managed to complete their high school education (*educational pathway 5*).

For those who chose to stay on, 9.8% of the students - 44.4% of which were females and 55.6% males - did not graduate from high school nor pursue their high school diploma further at adult learning centers (*educational pathway 2*). Those in pathway 4, who chose to stay in mainstream high school for five years and yet did not graduate, subsequently

attended ADL centre/s and still were not able to qualify for a high school diploma by the end of this study comprise 7.1% (females = 30.8%, males = 69.2%) as compared to the 21.2% (females = 43.6%, males = 56.4%) who went on to an ADL centre and managed to receive their high school graduation (*educational pathway 6*).

Only 74 students (females = 48.4%, males = 32.2%; 40.2% of the entire cohort) managed to achieve the most desired outcome of staying in mainstream high schools for the complete five years and achieving the requirements to acquire a high school diploma (*educational pathway 7*). Overall, the female participants in this study achieved high school diplomas at a higher rate than their male counterparts. Sixty three females (69.2%) graduated from high school (*educational pathway 5, 6, 7*) in contrast to 59.1% of the males. These results demonstrate that females in this study tend to persevere academically, or rather, demonstrate higher levels of academic resilience than their male counterparts. Chi-square tests of independence were performed in the later analyses to confirm these hypotheses.

4.4.3 Immigration Class

This variable was operationalized broadly to correspond with the Canadian Immigration categories allocated to immigrants arriving in Canada. The original 19 categories were recoded and collapsed into four categories: Entrepreneur class, Family class, Refugee class and Caretaker class. The re-distribution of all 184 participants across these four categories is detailed in Figure 4.3 and Table 4.3 below.

Seven of the participants (3.8%) could not be identified as belonging to any of the categories, since immigration class was not recorded in the Vancouver School Board DRPC computer database.

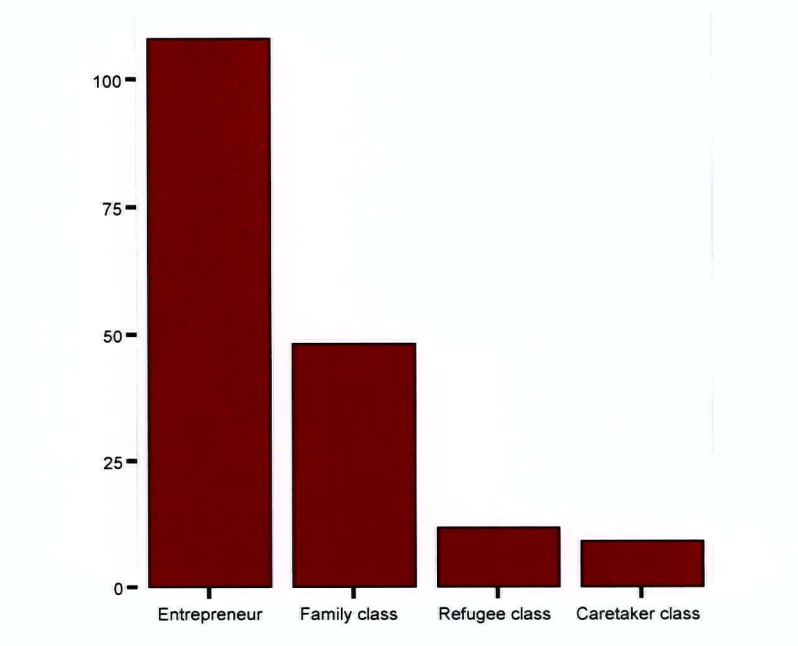


Figure 4.3 Total Number of Students and their Respective Immigration Class

Student contact was attempted, however, the phone numbers and addresses of some of these students were outdated. These students were thus reclassified under an Unknown Category and excluded from any further analysis investigating the relationship between educational pathways and immigration class.

Table 4.3 Canadian Immigration Categories Collapsed into Four Classes

Immigration Categories		Frequency	Percent	Valid Percent	Cumulative Percent
1	Entrepreneur	108	58.7	61.0	61.0
2	Family class	48	26.1	27.1	88.1
3	Refugee class	12	6.5	6.8	94.9
4	Caretaker class	9	4.9	5.1	100.0
Total		177	96.2	100.0	
Missing	0 Unknown category	7	3.8		
Total		184	100.0		

The frequency distribution clearly indicates that 58.7% of the participants (108 students) entered Canada under the Entrepreneurial class, and 26.1% arrived under the Family class category. Only 6.5% of the participants represented the Refugee class, and a

small percentage of students (4.9%) arrived into the country under the Caretaker class.

Another cross tabulation was generated to decipher the educational pathways of each of these immigration status categories (see Table 4.4).

In total, 46 of the students (42.6%) from the Entrepreneurial class received their diplomas from mainstream high schools in comparison to the 11.1% who chose to drop out permanently from the system (*educational pathway 1*), or the 8.33% who stayed in mainstream high schools for five years, did not manage to obtain sufficient course credits to graduate and did not pursue further education in the VSD (*educational pathway 2*). The other educational pathway with a meaningful percentage was pathway 6, where 23.2% of the students were recorded to have stayed in mainstream high schools for five years, subsequently attended ADL centre/s and graduated.

Of the 48 students arriving in Canada under the Family Class immigration category, slightly less than half (41.7%) obtained a high school diploma by taking the required credit courses through the traditional mainstream high school route (*educational pathway 7*). However, a closer inspection of the data indicates that the number of students who obtained a high school diploma (58.3%) is greater when taking into account students who took the alternative pathway of attending adult learning centers.

Six of the students (12.5%) dropped out of school (*educational pathway 1*) and seven participants (14.6%) stayed on in mainstream high school but did not obtain sufficient course credits to graduate (*educational pathway 2*). Similar to the students who were permanent dropouts, none of these students registered for courses at ADL centers in the VSD. Three of the Family class students (6.25%) opted for education pathway 3, initially dropping out of the mainstream high school system and taking the alternative pathway of

attending ADL centers to obtain further credits; however, by the end of this study, they had still not managed to obtain their high school diploma. Four of the students (8.33%) stayed on in mainstream high schools but did not manage to graduate, attended ADL centers but still did not manage to graduate (*educational pathway 4*) by the end of this study. Interestingly, none of the students in this profile followed educational pathway 5 (dropped out of mainstream high schools, went on to ADL centers and graduated during the time of this study).

Among the 12 students sampled from the Refugee class, 2 participants (16.7%) graduated from mainstream high schools (*educational pathway 7*), three (25%) stayed on in mainstream high schools, subsequently attended ADL centers and managed to graduate (*educational pathway 6*), and one student (8.3%) dropped out of school, went on to an ADL center and graduated (*educational pathway 4*). Thus in total, half of the students (6 students) in the refugee category managed to acquire a high school diploma. However, different pathways were taken to achieve this. Of the remaining 50% in this category, four (33%) dropped out of school permanently, and the rest attempted the alternative ADL route but failed to graduate.

Students in the Caretaker class followed a similar trend to the Refugee class. Of the nine students, two (22.2%) graduated from mainstream high schools (*educational pathway 7*), two (22.2%) stayed on in mainstream high schools but failed to graduate, and hence went to ADL centers and obtained their high school diplomas (*educational pathway 6*), and one student (11.1%) dropped out of school but went on to an ADL center and graduated (*educational pathway 5*). In total, five students (55.6%) from this immigration category graduated with a high school diploma.

Table 4.4 Canadian Immigration Categories across the Seven Educational Outcomes

Educational Outcomes		Immigration Categories				Total
		Entrepreneur	Family	Refugee	Caretaker	
1 Dropout (Permanent dropout)	Count	12	6	4	3	25
	% within Educational Outcomes	48.0%	24.0%	16.0%	12.0%	100.0%
	% within Immigration Categories	11.1%	12.5%	33.3%	33.3%	14.1%
2 Did not graduate, no ADL	Count	9	7	0	1	17
	% within Educational Outcomes	52.9%	41.2%	.0%	5.9%	100.0%
	% within Immigration Categories	8.3%	14.6%	.0%	11.1%	9.6%
3 Dropout, went to ADL, did not graduate	Count	6	3	0	0	9
	% within Educational Outcomes	66.7%	33.3%	.0%	.0%	100.0%
	% within Immigration Categories	5.6%	6.3%	.0%	.0%	5.1%
4 Did not graduate, went to ADL, did not graduate	Count	7	4	2	0	13
	% within Educational Outcomes	53.8%	30.8%	15.4%	.0%	100.0%
	% within Immigration Categories	6.5%	8.3%	16.7%	.0%	7.3%
5 Dropout, went to ADL, graduated	Count	3	0	1	1	5
	% within Educational Outcomes	60.0%	.0%	20.0%	20.0%	100.0%
	% within Immigration Categories	2.8%	.0%	8.3%	11.1%	2.8%
6 Did not graduate, went to ADL, graduated	Count	25	8	3	2	38
	% within Educational Outcomes	65.8%	21.1%	7.9%	5.3%	100.0%
	% within Immigration Categories	23.1%	16.7%	25.0%	22.2%	21.5%
7 Graduated mainstream HS	Count	46	20	2	2	70
	% within Educational Outcomes	65.7%	28.6%	2.9%	2.9%	100.0%
	% within Immigration Categories	42.6%	41.7%	16.7%	22.2%	39.5%
Total	Count	108	48	12	9	177
	% within Educational Outcomes	61.0%	27.1%	6.8%	5.1%	100.0%
	% within Immigration Categories	100.0%	100.0%	100.0%	100.0%	100.0%

The results clearly indicate that the highest percentage of participants (65.7%) who graduated from mainstream high schools were from the Entrepreneurial class followed by students from the Family class at 28.6%. Only 2.86% of the students from each, the Refugee class and the Caretaker class graduated from mainstream high schools (*educational pathway 7*). However, this small percentage actually represents a substantial 16.7% and 22.2% of each category respectively. Interestingly, participants from the Entrepreneurial and Family classes permanently dropped out of school at similar rates (11.1% and 12.5% respectively), while both Refugee and Caretaker classes had similar percentages of students (33.3%) who

permanently dropped out of school (*educational pathway 1*). These figures indicate that the highest percentage of dropouts were from the Caretaker and the Refugee classes.

4.4.4 Socio-Economic Status

The distribution of the 182 participants across the three main socio-economic status groups is reflected in Figure 4.4. Seventy three participants (40.1%) were identified as belonging to the low SES group, 23.6% (43 students) to the middle SES group, and 36.3% (66 students) in the high SES group (see Table 4.5).

Table 4.5 Socio-Economic Status (SES) of the Students

Socio-Economic Status	Frequency	Percent	Valid Percent	Cumulative Percent
1.00	73	39.7	40.1	40.1
2.00	43	23.4	23.6	63.7
3.00	66	35.9	36.3	100.0
Total	182	98.9	100.0	
Missing System	2	1.1		
Total	184	100.0		

Table 4.6 examines the educational outcomes across the 182 participants and their socio-economic statuses (see Table 4.6). The highest percentage of graduates from mainstream high schools were from two main groups, the low SES group (38.9%) and the high SES group (37.5%). Interestingly enough, the low SES group students were found in both the dropout and graduate groups. A common trend across all three groups is that relatively low percentages of students who dropped out, opted for education pathway 5, an alternative route to obtaining a high school diploma. This may be indicative of a trend where regardless of the socio-economic status of the students, if they choose to dropout and then further their education via an ADL center, they are more likely not to complete their education at the end of their courses. Only five of the total participants (2.7%) followed education pathway five.

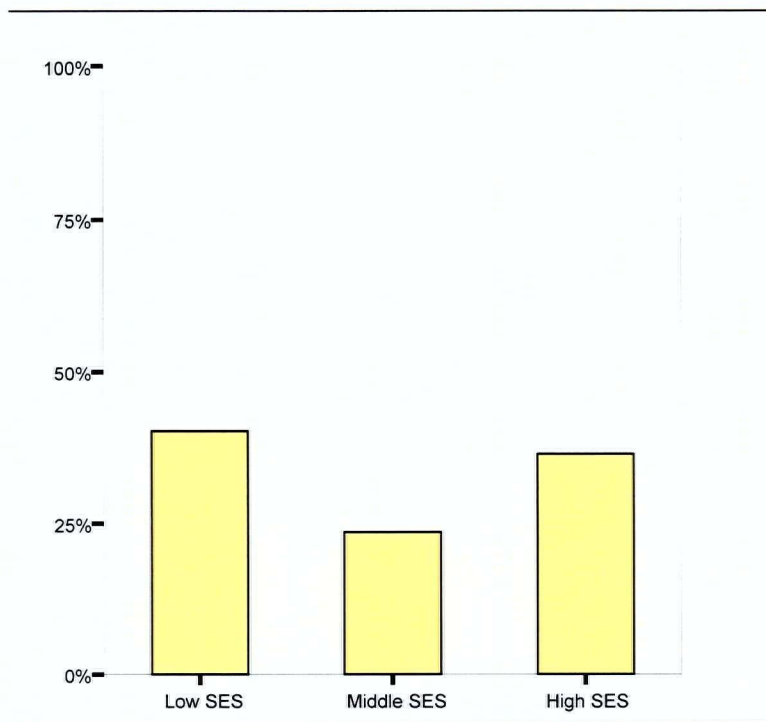


Figure 4.4 Total Number of Students and their Respective Socio-Economic Status Groups

That is, these students dropped out of school, attended ADL centers and achieved sufficient credits to acquire a high school diploma. Thirty nine of the total participants (21.4%) stayed on in mainstream high schools for five years, did not acquire sufficient course credits, subsequently attended ADL centers and graduated (*educational pathway 6*). Of this group, 16 or 41% were from the low SES group, eight (20.5%) from the middle SES group and 15 (38.5%) from the high SES group. Similar to the trend found in education pathway one and seven, the participants from the low SES group are in the majority. The highest percentage of participants (38.5%) from the low SES group were found in pathway four, where students stayed in mainstream high schools for five years, did not manage to acquire sufficient course credits, subsequently attended ADL centres and had still not managed to acquire sufficient course credits to graduate at the seven year mark of this study. Equal percentages of students respectively.

Table 4.6 SES of Participants across the Educational Outcomes

Educational Outcomes		SES			Total
		Low SES	Middle SES	High SES	
1 Dropout (Permanent dropout)	Count	12	7	7	26
	% within Educational Outcomes	46.2%	26.9%	26.9%	100%
	% within SES	16.4%	16.3%	10.6%	14.3%
2 Did not graduate, did not attend ADL	Count	4	5	9	18
	% within Educational Outcomes	22.2%	27.8%	50.0%	100%
	% within SES	5.5%	11.6%	13.6%	9.9%
3 Dropout, went to ADL, did not graduate	Count	5	1	3	9
	% within Educational Outcomes	55.6%	11.1%	33.3%	100%
	% within SES	6.8%	2.3%	4.5%	4.9%
4 Did not graduate, went to ADL, did not graduate	Count	5	4	4	13
	% within Educational Outcomes	38.5%	30.8%	30.8%	100%
	% within SES	6.8%	9.3%	6.1%	7.1%
5 Dropout, went to ADL, graduated	Count	3	1	1	5
	% within Educational Outcomes	60.0%	20.0%	20.0%	100%
	% within SES	4.1%	2.3%	1.5%	2.7%
6 Did not graduate, went to ADL, graduated	Count	16	8	15	39
	% within Educational Outcomes	41.0%	20.5%	38.5%	100%
	% within SES	21.9%	18.6%	22.7%	21.4%
7 Graduated mainstream HS	Count	28	17	27	72
	% within Educational Outcomes	38.9%	23.6%	37.5%	100%
	% within SES	38.4%	39.5%	40.9%	39.6%
Total	Count	73	43	66	182
	% within Educational Outcomes	40.1%	23.6%	36.3%	100%
	% within SES	100%	100%	100%	100%

The findings for SES suggest that if the students choose to dropout, most of them are more likely to fail to receive their high school diploma, as compared to those who choose to stay in the mainstream high school system. This seems to be the case regardless of whether these students later choose to attend ADL centers to obtain their diplomas or not. Further, participants who take courses in mainstream high schools for five years and do not earn sufficient course credits to graduate and subsequently, attend ADL centres have a greater success / graduation rate than those who dropout and subsequently attend ADL centres.

Thus, dropouts tend not to succeed at ADL centres whereas those who do not graduate from mainstream high schools do succeed.

4.5 The Relationship between Demographic Factors and Educational Outcomes

After a preliminary investigation of the descriptive profile of the sample demographic indicators, the second stage of analysis was conducted to determine the relationship between each independent demographic variable and the dependent variable of educational outcomes. Wherever assumptions permitted¹, chi-square measures were computed to understand the association between each pair of variables.

4.5.1 Country of Origin

Based on the countries that the students came from, the hypothesis proposes that there would be a significant relationship between country of origin and educational pathways, as opposed to educational outcomes being independent of countries. Thus the following hypothesis was investigated:

H₀: *There is no relationship between country of origin and educational outcomes*

H₁: *There is a relationship between country of origin and educational outcomes*

The initial proposed analysis was to perform a Chi-square test to establish if there was a significant relationship between the country of origin and educational outcomes. However, the final sample studied did not yield sufficient numbers evenly across all the different countries, which is reflected in the cross tabulation generated (see Table 4.7).

Based on a simple count, several countries (i.e., Canada, Lithuania, Mexico, Romania, Russia, Venezuela, Korea and UK) are severely under-represented with only one participant

¹ Robust and reliable Chi-square tests of independences can only be computed when the cross tabulation tables generated have cell sized of more then 5 counts, the total number of cells with less than 5 not exceeding 20%.

from each country. With such skewed distributions, parametric statistical tests could not be performed and substantive support for the proposed hypothesis could not be established.

However, further analysis of the cross tabulation reveals that even for countries like Hong Kong, Taiwan and the Philippines that were adequately represented in the sample, no apparent response pattern exists across their educational outcomes. As countries are considered nominal categorical variables in nature, they cannot be ranked objectively and thus one is unable to establish any directional patterns in the response patterns of all the participants. In other words, ranks cannot be applied to all the countries without prejudice and drawing inappropriate conclusions that as the countries increase or decrease in ranking, the educational pathways would change.

Table 4.7 Individual Students' Country of Origin and their Educational Outcomes

Country of Origin	Educational Outcomes							Total
	1 Dropout (Permanent dropout)	2 Did not graduate, no ADL	3 Dropout, went to ADL, did not graduate	4 Did not graduate, went to ADL, did not graduate	5 Dropout, went to ADL, graduated	6 Did not graduate, went to ADL, graduated	7 Graduated mainstream HS	
CA	0	0	0	0	0	1	0	1
CH	2	2	0	3	0	1	8	16
CZ	0	0	0	0	0	0	1	1
HK	6	6	3	8	2	18	29	72
IN	0	1	2	0	0	1	3	7
JA	0	0	0	0	0	1	1	2
KO	0	1	0	0	0	0	3	4
LT	0	0	0	0	0	0	1	1
MC	0	0	0	0	0	2	0	2
ME	0	0	0	0	1	0	0	1
PH	7	2	0	0	1	2	5	17
PK	0	0	0	0	0	0	2	2
RO	0	0	0	0	0	0	1	1
RU	0	0	0	0	0	0	1	1
SR	0	1	0	0	0	0	0	1
ST	0	0	0	0	0	0	2	2
TA	6	4	1	1	1	13	13	39
TH	2	0	0	0	0	0	0	2
UA	1	0	1	0	0	0	0	2
UK	1	0	0	0	0	0	0	1
UN	0	1	1	0	0	0	2	4
US (Korean)	1	0	0	0	0	0	0	1
VE	0	0	0	1	0	0	0	1
VI	0	0	1	0	0	0	1	2
YU	0	0	0	0	0	0	1	1
Total	26	18	9	13	5	39	74	184

4.5.2 Gender

The research objective set out was to investigate whether there were any discernable gender differences in relation to educational outcomes. In particular, the objective was to

understand if there were any interesting response patterns in the data that would associate educational pathways with gender. Specifically, the following hypothesis was investigated:

Ho: *There is no relationship/ no difference between gender and educational outcomes*

H1: *There is a relationship/ difference between gender and educational outcomes*

This research question was investigated via two parametric statistical tests: Chi-square and Univariate Analysis of Variance (ANOVA). As ANOVAs are considered relatively more reliable and robust for small sample descriptive statistics, the two tests were performed, with the ANOVA performed as robust complementing support for any differences between the genders established

Chi-square test for significant gender and educational outcome relationships

Although the generated cross tabulation table revealed several cells with a count of less than five, (see Table 4.2), a chi-square test was still computed to obtain an initial understanding of the possible underlying relationship between gender and educational outcomes. The results (Chi-Square = 11.67, $p > .05$) suggested that there was no significant relationship between gender and educational outcomes. In other words, the percentage differences observed in the table occurred purely by random chance and not because educational outcomes was related to gender. Such a conclusion is not surprising, since there are at least four cells with a count of less than 5. However before conceding and concluding definitely that there exists no relationship between gender and the dependent variable, an ANOVA was performed to support these primary findings.

Analysis of Variance (ANOVA) for gender differences

As previously mentioned, educational outcomes as a dependent variable can also be measured as a hierarchical interval variable. A cursory exploratory data analysis (see

Appendix A) was performed to check the normality and distribution of this variable.

Although the distribution was slightly skewed to the right (-.721), indicating higher than lower pathways chosen, and playtokurtic (-1.124) indicated, a loose distribution of the individuals across the seven education pathways, it may still be considered approximately normal and thus fulfilling the necessary assumptions of normality with an overall mean of 4.99 (s.d. = 2.293). In other words, the sample of 184 students has a central tendency towards education pathway 5, choosing mainly to stay in school for five years and subsequently attending ADL centers to obtain their high school diploma.

For the purpose of this study, education outcomes as a dependent variable was explored between the two gender groups, male and female (see Appendix B). After normality was checked and assumptions of homogeneity of variance and normality were verified, the univariate ANOVA was performed to examine the mean group differences. The table below (see Table 4.8) shows the educational outcome means for each gender group.

Table 4.8 Educational Outcome Means Across the Two Gender Groups

Educational Outcomes		Mean	N	Std. Deviation
Gender	Female	5.16	91	2.382
	Male	4.82	93	2.202
	Total	4.99	184	2.293

An ANOVA was performed to confirm and to assess how well gender as a predictor variable was able to explain the variance between the different educational pathways. The corrected one-way ANOVA model demonstrated an F score of 1.058 ($p > .05$), providing support for the notion that the male and female participants in this study were not significantly different in terms of their educational outcomes. These results reinforced the earlier findings from the chi-square and served as a vital precursory analysis for the regression models that were generated in the later analyses to determine significant predictors of educational outcomes.

4.5.3 Immigration Class

The following research question posits that there is a relationship between the immigration class of the student and the educational pathway taken. Specifically, the following hypothesis was investigated:

H₀: *There is no relationship between Immigration class and educational outcomes*

H₁: *There is a relationship between Immigration class and educational outcomes*

Again this hypothesis can be investigated via two parametric statistical tests: Chi-square and Univariate Analysis of Variance (ANOVA). Immigration class was collapsed into four meaningful categories and these categories were analyzed to determine if any differences between the classes and educational outcomes² could be established.

Chi-square test for significant immigration class and educational outcome relationships

The chi-square test was insignificant ($p > .05$), indicating that there may not be a relationship between immigration class and educational outcomes (see Appendix C). In order to avoid the possibility of committing a type II error, a one-way ANOVA was performed to investigate whether there was any significant difference between the four immigration classes.

Analysis of Variance (ANOVA) for immigration class differences

An exploratory data analysis (see Appendix D) was performed to check the normality and distribution of education outcomes across the four immigration classes. The first

² Before any tests were run, it was noted that small sample sizes were apparent in two of the categories and this may possess severe reliability issues for some of the test statistics. As the data were already collected to the best of the researcher's ability, a few measures and additional tests were run to account and moderate for these problems.

precaution taken note of was that of the relatively small number of students in the Refugee and Caretaker class in this sample. Since appropriate weights were not available to apply on the data, additional robust parametric tests were performed to substantiate the ANOVA test; both the Brown-Forsythe and Welch tests are able to accommodate distributions that deviate from the assumptions made. The means table presented below (see Table 4.9) shows the educational outcome means for each immigration class.

Table 4.9 Educational Outcome Means for the Four Immigration Classes

Educational Outcomes	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Entrepreneur	108	5.21	2.179	.210	4.80	5.63
Family class	48	4.85	2.361	.341	4.17	5.54
Refugee class	12	4.08	2.466	.712	2.52	5.65
Caretaker class	9	4.00	2.693	.898	1.93	6.07
Total	177	4.98	2.286	.172	4.64	5.32

Although the means for each group appear different, the ANOVA test ($F = 1.605$, $p > .05$) indicated that there were no significant differences across the groups. The two additional robust parametric tests performed also reiterated the results of insignificant differences (see Appendix E). To ensure this was a reliable conclusion, a non-parametric Kruskal-Wallis H test was performed. This test again confirmed that there were no significant differences between immigration class and education outcomes. It was initially hypothesized that there would be significant differences across the immigration classes. However, the results demonstrated the converse. This finding may have resulted from the uneven distribution of students across the four groups and the insufficient sample collected. Although the hypothesis of difference among the groups could not be confirmed, the decision

was to proceed using immigration class as a predictor of educational outcomes in the later analyses.

4.5.4 Socio-Economic Status

This study also investigated whether there were any significant relationships between SES and educational pathways. The following hypotheses were proposed:

Ho: *There is no relationship between SES and educational outcomes*

H1: *There is a relationship between SES and educational outcomes*

Similar to the issues faced with immigration class, SES figures were inadequate and ill-represented in several categories (namely for *educational pathways 3, 4 and 5*) and thus meaningful and reliable chi-square analyses could not be produced. As such, only ANOVA was performed for this demographic indicator. The following table presents the education outcome means for the three SES groups.

Table 4.10 Educational Outcome Means for Socio-Economic Status (SES) of the Students

Educational Pathways	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
1 Low SES	73	4.96	2.300	.269	4.42	5.50
2 Middle SES	43	4.84	2.390	.364	4.10	5.57
3 High SES	66	5.06	2.259	.278	4.51	5.62
Total	182	4.97	2.296	.170	4.63	5.30

Unlike the previous analyses, the three SES groups have sufficient students to represent each group. However, even without running the ANOVA, the data in the table suggests that the means do not appear to be significantly different. Running the actual univariate ANOVA ($F = .123, p > .05$) confirmed this observation (see Appendix F).

4.5.5 Conclusion

Based on all the chi-squares and ANOVA tests performed, a common trend consistently emerges: demographic indicators for the participants in this study, do not have any significant statistical relationship with the dependent variable education pathways. From the historical data recorded, no meaningful associations were identified between the participants' country of origin, gender, immigration class, or SES and their education outcomes.

This is a surprising finding, since demographic variables were hypothesized to have a significant relationships with the educational pathways taken, and that within each demographic indicator, the differences between the groups in their educational outcomes could be used as practical defining profiles from which to predict educational pathways (e.g., females can be predicted to graduate rather than dropout; students in the Refugees and Caretaker classes can be predicted to dropout rather than stay in mainstream high school; low SES students may be predicted to dropout more than higher SES students).

Although the demographic variables did not produce significant relationships with education pathways, it was still suspected that they might serve as meaningful predictor variables. Thus, a bivariate correlation matrix was produced to determine which of the demographic independent variables might qualify as a significant predictor (Table 4.11). The only demographic independent variable that was significantly correlated with the dependent variable was immigration class ($r = -.16$, $p < .05$). A relationship between immigration status and the educational pathway exists (**Hypothesis A**). This new information sheds new light on the relationship between immigration class and educational outcomes.

Table 4.11 Correlation Matrix of the Demographic Independent Variables with Educational Outcomes
(Dependent Variable)

		Country of Origin	Gender	Immigration Class	SES	Educational Outcomes
Country of Origin	Pearson Correlation	1.00	.00	-.03	.12	-.13
	Sig. (2-tailed)		.99	.65	.12	.07
	N	184.00	184.00	177.00	182.00	184.00
Gender	Pearson Correlation	.00	1.00	.13	-.02	-.08
	Sig. (2-tailed)	.99		.08	.81	.31
	N	184.00	184.00	177.00	182.00	184.00
Immigration Class	Pearson Correlation	-.03	.13	1.00	-.25**	-.16*
	Sig. (2-tailed)	.65	.08		.00	.03
	N	177.00	177.00	177.00	175.00	177.00
SES	Pearson Correlation	.12	-.02	-.25**	1.00	.02
	Sig. (2-tailed)	.12	.81	.00		.80
	N	182.00	182.00	175.00	182.00	182.00
Educational Outcomes	Pearson Correlation	-.13	-.08	-.16*	.02	1.00
	Sig. (2-tailed)	.07	.31	.03	.80	
	N	184.00	184.00	177.00	182.00	184.00

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

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

4.6 School Administrative Descriptors of Ethnic and Linguistic Minority Students

Apart from the demographic variables, school administrative variables such as school mobility, school ranking, percentage of ESL students in the schools attended, and the years of ESL support also reflect the composition and profile of the ESL students and their educational outcomes, and these variables are investigated in the next few sections.

4.6.1 School Mobility

School mobility refers to the number of times a student changed schools during the time of this investigation, including a move to an adult learning center, if a student was found to have attended one. The figure below details the frequency of schools changed as well as the percentage composition of students per number of change. The highest number of schools students changed turned out to be four and there were only three such instances recorded.

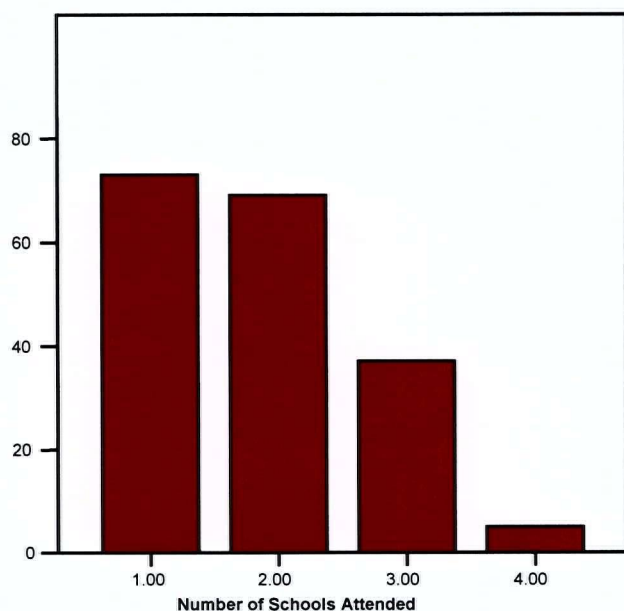


Figure 4.5 Total Number of Students and their School Mobility

These sample sizes are not big enough to generate any further reliable statistical tests, but a detailed description of the school mobility profile is informative. Of the 184 students, 39.7% (73 students) attended one school, 37.5% attended two and 22.8% changed schools more than twice. When analyzed together with educational pathways, several interesting trends appeared (see Table 4.12).

The highest number of high school graduates (60.6%) regardless of the pathways taken, are those students who attended one school. Two of the educational pathways where students either dropped out or did not graduate from mainstream high schools and who subsequently attended ADL centers and *still* did not manage to graduate (*educational pathways 3 and 4*) had higher percentages (20 %), occurring when school mobility was the highest (school mobility = four).

Table 4.12 School Mobility of Participants across the Seven Educational Outcomes

Educational Outcomes		Number of Schools Attended				
		1.00	2.00	3.00	4.00	Total
1 Dropout (Permanent Dropout)	Count	15	6	2	2	25
	% within Educational Outcomes	60.0%	24.0%	8.0%	8.0%	100.0%
	% within number of schools attended	20.5%	8.7%	5.4%	40.0%	13.6%
2 Did not graduate, did not attend ADL	Count	13	4	1	0	18
	% within Educational Outcomes	72.2%	22.2%	5.6%	.0%	100.0%
	% within number of schools attended	17.8%	5.8%	2.7%	.0%	9.8%
3 Dropout, went to ADL, did not graduate	Count	0	5	3	1	9
	% within Educational Outcomes	.0%	55.6%	33.3%	11.1%	100.0%
	% within number of schools attended	.0%	7.2%	8.1%	20.0%	4.9%
4 Did not graduate, went to ADL, did not graduate	Count	0	6	7	1	14
	% within Educational Outcomes	.0%	42.9%	50.0%	7.1%	100.0%
	% within number of schools attended	.0%	8.7%	18.9%	20.0%	7.6%
5 Dropout, went to ADL, graduated	Count	0	1	4	0	5
	% within Educational Outcomes	.0%	20.0%	80.0%	.0%	100.0%
	% within number of schools attended	.0%	1.4%	10.8%	.0%	2.7%
6 Did not graduate, went to ADL, graduated	Count	0	23	15	1	39
	% within Educational Outcomes	.0%	59.0%	38.5%	2.6%	100.0%
	% within number of schools attended	.0%	33.3%	40.5%	20.0%	21.2%
7 Graduated mainstream HS	Count	45	24	5	0	74
	% within Educational Outcomes	60.8%	32.4%	6.8%	.0%	100.0%
	% within number of schools attended	61.6%	34.8%	13.5%	.0%	40.2%
Total	Count	73	69	37	5	184
	% within Educational Outcomes	39.7%	37.5%	20.1%	2.7%	100.0%
	% within number of schools attended	100.0%	100.0%	100.0%	100.0%	100.0%

4.6.2 School Ranking

Information regarding each individual school's ranking was recorded, and in order to determine if educational outcomes had any association to the ranking of the school, a cross tabulation table was generated, the results of which are presented in Table 4.13 below.

Table 4.13 School Mobility of Participants across the Seven Educational Outcomes

School Ranking	Educational Pathways							Total
	1	2	3	4	5	6	7	
7.00	0	0	0	0	0	0	3	3
12.0	1	0	0	0	0	3	4	8
13.0	1	0	0	2	0	2	4	9
17.0	2	8	1	1	1	2	11	26
20.0	1	1	0	1	0	2	4	9
25.0	2	0	1	2	0	8	5	18
51.0	1	1	0	3	0	7	6	18
66.0	4	2	1	2	0	6	12	27
132	4	0	0	0	1	0	4	9
137	1	0	1	0	0	0	3	5
144	2	1	2	0	1	2	3	11
153	0	0	1	0	0	1	6	8
200	0	1	0	0	0	0	1	2
209	2	0	1	0	0	2	5	10
223	1	4	0	1	1	2	2	11
229	3	0	1	1	0	2	1	8
Total	25	18	9	13	4	39	74	182

There were several noteworthy findings when educational pathways were organized by school ranking. Although the numbers are too small to result in any significant statistical relationships, several points are of note. First, 100% of all the students who came from the school with a ranking of seven all graduated (*educational pathway 7*). The school with a ranking of 153 only fell short of that impressive figure by 25%. Schools with rankings of 13, 17, 25, 66 and 132 showed that only half of their students managed to achieve their diploma at the end of the five year term. The exception was the school that ranked 132: this school showed an equally high (n=5 or 50%) dropout rate. The other schools were evenly distributed

across the 7 pathways, indicating that these schools had a mix of ESL students in terms of the educational pathways taken.

4.6.3 Percent of ESL Students in the School

This school administrative variable measures the percentage of ESL students registered in the schools the participants attended. This variable is of particular interest as it was suspected that a school with a fairly high proportion of ESL students would have a higher percentage of dropouts or students that fail to graduate. In addition, it was also hypothesized that the ranking of these schools would be significantly related to the percentage of ESL students registered in the school. Thus this independent variable served not only as a variable on its own, determining the composition of each school, but it also served as a control variable. It was hypothesized that educational outcomes and school ranking were related to the percentage of ESL students in each school.

A cross tabulation revealed a relationship between school ranking and the percentage of ESL students (see Table 4.14). In total there were 28 schools that had 39.4% of ESL students. The highest percentage of ESL students found registered in a school was 80.89%. There were four such schools with a school ranking of 229. These results appear to support the above hypothesis. Alternatively, there were three schools with the lowest percentage of ESL students (10.4%). Four schools with a fairly low school ranking of four, had 16.98% of ESL students and two schools with a school ranking of seven, had 26.55% of ESL students.

Table 4.14 Cross Tabulation of the Percentage of ESL Students Registered in the School Population and their School Ranking

% of Students taking ESL	School Ranking																Total
	7	12	13	17	20	25	51	66	132	137	144	153	200	209	223	229	
10.40	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	3
16.98	0	4	0	1	0	0	2	1	0	0	0	0	0	0	0	0	8
26.17	0	1	1	4	2	5	1	0	0	0	0	0	0	1	0	0	15
26.55	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3
27.19	0	0	1	0	0	2	7	2	1	0	2	0	0	1	1	1	18
28.83	0	1	1	0	0	0	0	0	0	0	6	1	0	0	1	0	10
32.14	0	0	1	1	3	1	0	1	1	0	0	0	0	0	0	1	9
33.20	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
33.87	0	0	0	1	0	0	0	3	0	0	0	0	0	1	5	0	10
35.35	0	1	0	12	1	0	3	2	1	0	0	1	0	0	0	2	23
35.48	0	0	1	0	0	1	1	0	0	0	0	4	1	0	1	0	9
39.44	1	0	0	3	0	2	1	13	0	3	0	1	1	3	0	0	28
42.54	0	0	4	2	1	1	0	1	0	0	0	1	0	0	0	0	10
45.87	0	0	0	1	0	2	0	1	0	0	0	0	0	4	1	0	9
62.34	0	0	0	0	1	0	1	0	0	2	0	0	0	0	0	0	4
65.99	0	0	0	0	0	1	0	1	6	0	1	0	0	0	0	0	9
67.51	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2
80.89	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	4	7
Total	3	8	9	26	9	18	17	27	9	5	11	8	2	10	10	8	180

A three-way cross tabulation (Appendix G) revealed a relationship between the percentage of ESL students enrolled in each of the schools and their school ranking across the seven individual educational pathways (control variable). For the permanent dropouts (*educational pathway 1*), there seems to be an even distribution of ESL students across all the ranks with no outstanding relationship between any of the school rankings or percentage of ESL students. A similar trend occurred for the other extreme as well (*educational pathway 7*). Students who managed to graduate from mainstream high schools, came from various schools with both differing percentages of ESL students enrolled in the school and school rankings.

4.6.4 Years of ESL Support

At the time that this sample was recorded, the British Columbia Ministry of Education allocated financial support for up to five years for language support programs. The results indicate that 29 (15.8%) and 4 (2.2%) of the participants received four and five years of ESL

support respectively (see Figure 4.6). However, there were also students who had not received any language support: 10.9 % of the sample received no ESL support over their five high school academic years. Overall, the majority of students received between one to three years of ESL support, the highest percentage (29.3%) receiving two years of support.

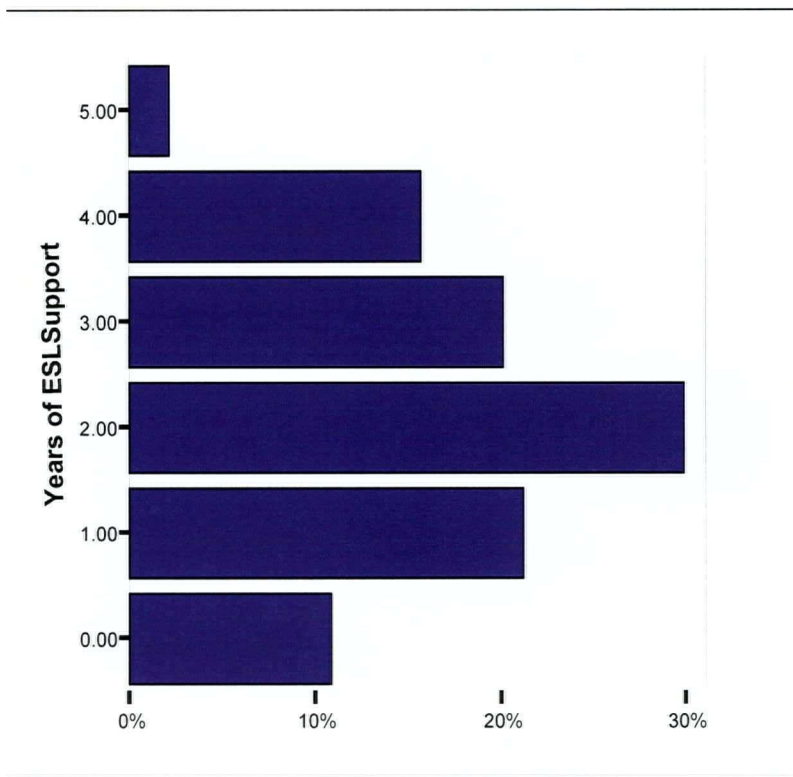


Figure 4.6 Number of Years of ESL Support

When the number of years of ESL support provided against the educational pathways (Table 4.15) was investigated, it was possible to determine more precisely if the number of years of support was insufficient (students did not graduate) or put to good use (students obtained a diploma eventually).

Table 4.15 Cross Tabulation of the Years of ESL Support and Educational Outcomes

Educational Outcomes			Years of ESL Support					
			0	1	2	3	4	5
1 Dropout (Permanent dropout)	Count		4	11	6	2	3	0
	% within EducationalOutcomes		15.4%	42.3%	23.1%	7.7%	12%	.0%
	% within years of support		20.0%	28.2%	11%	5.4%	10%	.0%
2 Did not graduate, did not attend ADL	Count		4	1	4	4	3	2
	% within EducationalOutcomes		22.2%	5.6%	22.2%	22.2%	17%	11%
	% within years of support		20.0%	2.6%	7.3%	10.8%	10%	50%
3 Dropout, went to ADL, did not graduate	Count		2	1	1	1	4	0
	% within EducationalOutcomes		22.2%	11.1%	11%	11.1%	44.4%	.0%
	% within years of support		10.0%	2.6%	1.8%	2.7%	14%	.0%
4 Did not graduate, went to ADL, did not graduate	Count		0	2	2	4	4	1
	% within EducationalOutcomes		.0%	15.4%	15.4%	30.8%	30.8%	7.7%
	% within years of support		.0%	5.1%	3.6%	10.8%	14%	25%
5 Dropout, went to ADL, graduated	Count		1	1	1	2	0	0
	% within EducationalOutcomes		20.0%	20.0%	20.0%	40.0%	.0%	.0%
	% within years of support		5.0%	2.6%	1.8%	5.4%	.0%	.0%
6 Did not graduate, went to ADL, graduated	Count		0	7	13	10	8	1
	% within EducationalOutcomes		.0%	17.9%	33.3%	25.6%	20.5%	2.6%
	% within years of support		.0%	17.9%	24%	27.0%	28%	25%
7 Graduated mainstream HS	Count		9	16	28	14	7	0
	% within EducationalOutcomes		12.2%	21.6%	37.8%	18.9%	9.5%	.0%
	% within years of support		45.0%	41.0%	51%	37.8%	24%	.0%

For students who graduated, (*educational pathways 5, 6 and 7*) the ESL support provided appears to be well spent. Only 51.7% of the ESL support provided in the 4th year was given to students who eventually graduated as compared to 48.3% allocated to students who eventually dropped out or failed to graduate. Among those who permanently dropped out (*educational pathway 1*), 42.3% of participants only received support in the first year. This is obvious, since a number of the students had already dropped out and thus did not require any more language support from their individual schools. However, among those who stayed on but did not graduate, 44.4% received two to three years of support (*educational pathway 2*). However none of these participants were found at any of the ADL centres in the VSD during the period of this investigation. Four of the participants (44.4%) who stayed in

school for five years but did not graduate, subsequently attended ADL centers but still failed to graduate (*educational pathway 4*) had support up to the fourth year. These students were still taking courses at ADL centres at the end of this study. Overall very few (four) students were identified as having received five years of language support.

The findings from this investigation seem to indicate that students who receive one to three years of support achieve desirable outcomes in terms of graduating from high school. The educational outcomes for students who received four years or more did not necessarily improve. Rather, a drop in the percentage of graduates from 50% (one year of support) to 20.7% (four years of language support) was found. This suggests also that overall English achievement is related to success.

4.6.5 Absenteeism

Absenteeism was measured as a yearly index, detailing the number of classes individual students were absent per grade year. Taking the mean absences of all the students, a total of six absenteeism indices were obtained, one per year and an overall total, in order to analyze and gauge the rate of absenteeism across the seven pathways. The following table (Table 4.16) summarizes the mean number of classes students were absent from school per grade year.

Table 4.16 Absenteeism (No. of Classes) Across the Five Respective Grades

	Mean	Valid N	Minimum	Maximum
Absenteeism rate in grade 8	3.90	115	0	30
Absenteeism rate in grade 9	8.73	160	0	80
Absenteeism rate in grade 10	14.06	164	0	136
Absenteeism rate in grade 11	20.78	159	0	118
Absenteeism rate in grade 12	15.34	134	0	75
Absenteeism in total	52.84	180	.00	220.00

The absenteeism rate in Grade 8 is the lowest, with a mean of 3.90 (s.d. = 5.01). The average number of classes students were absent from in Grade 9 increased to 8.73 (s.d. = 11.37). Following that, absenteeism increased every year, with the highest absenteeism rate reported at 20.78 (s.d. = 21.98) in Grade 11, one year before high school graduation. Although that grade year saw the highest rate of absenteeism, the overall maximum number of classes students were absent was 136 and this was similarly observed for the students in Grade 10. The absenteeism rate was calculated for the seven educational outcome profiles (see Table 4.17).

Table 4.17 Absenteeism and Educational Outcomes

	Educational Pathways							Total
	1 Dropout (Permanent dropout)	2 Did not graduate, did not attend ADL	3 Dropout, went to ADL, did not graduate	4 Did not graduate, went to ADL, did not graduate	5 Dropout, went to ADL, graduated	6 Did not graduate, went to ADL, graduated	7 Graduated mainstream HS	
Absenteeism rate in grade 8	7.63	2.45	4.33	4.86	2.67	2.20	3.65	3.90
Absenteeism rate in grade 9	15.88	7.50	14.33	5.55	9.50	7.30	8.00	8.73
Absenteeism rate in grade 10	23.34	17.78	42.63	18.58	2.00	11.10	10.59	14.06
Absenteeism rate in grade 11	34.31	30.67	63.00	25.65	2.00	15.03	17.85	20.78
Absenteeism rate in grade 12	.50	22.14		16.60	9.00	13.03	15.99	15.34

The absenteeism rate in Grade 8 was comparably low, with educational pathway 6 having a reported low mean of 2.20 and educational pathway 1 having the highest reported mean of 7.63. Apart from pathway 1, 3 and 4, the rest of the pathways had relatively low absenteeism rates compared to the overall mean of 3.90. This pattern quickly changes in Grade 9 where most of the educational pathways except for educational pathway 2, 4 and 6 reflected a much higher rate of absenteeism than the comparable overall mean of 8.73. For Grade 10, the absenteeism rates in educational pathways 1, 2, 3 and 4 increased significantly with a rate as high as 42.63 for educational pathway 3. Although the rate of absenteeism also

increased for the remaining three educational pathways (*educational pathways 5, 6 and 7*), the rate remained fairly consistent below the overall mean of 14.06. This trend continues for Grade 11 but changes again for Grade 12. In the final year, educational pathways that document students that dropped out either have low absenteeism rates (*educational pathway 5 - 9.00*) or no available rates at all (*educational pathway 1- .50, educational pathway 3- 0*). For the other pathways, absenteeism was already starting to taper, to reflect a tendency towards the overall mean of 15.34.

4.6.6 Relationship between Administrative Descriptors & Educational Outcomes

After the preliminary investigation of the cohort's school administrative details, the second stage of analysis determined whether there were any significant relationships between each independent variable and the dependent variable of educational pathways and outcomes investigated in this study. However, the cross tabulation tables produced in the earlier stages of analysis revealed cells with inadequate representation for appropriate statistical analyses. As such, relationships between these independent variables and educational outcomes could not be established. However, a correlation matrix (Table 4.18) was produced to determine if there were any significant correlations between any of the variables with the dependent variable. Two correlations appear significant: the correlation between the percentage of ESL students registered in the school population and the dependent variable ($r = -.16, p < .05$), and the correlation between two independent variables – school ranking and the percentage of students registered in individual schools ($r = .22, p < .01$). However, from the magnitude of both correlations, it is evident that the linear associations detected were not very robust.

Table 4.18 Correlation Matrix of the School Administrative Descriptors (Independent Variables) with Educational Outcomes (Dependent Variable)

	Rank of School	Number of Schools Attended	Years of ESL Support	ESL Students Registered	Educational Outcomes
Rank of School	1.00	.10	.02	.22**	-.14
Pearson Correlation		.17	.81	.00	.06
Sig. (2-tailed)	182.00	182.00	182.00	180.00	182.00
N					
Number of Schools Attended	.10	1.00	-.02	.04	.02
Pearson Correlation	.17		.78	.63	.82
Sig. (2-tailed)	182.00	184.00	184.00	182.00	184.00
N					
Years of ESL Support	.02	-.02	1.00	.09	.02
Pearson Correlation	.81	.78		.22	.76
Sig. (2-tailed)	182.00	184.00	182.00	182.00	184.00
N					
ESL Students Registered	.22**	.04	.09	1.00	-.16*
Pearson Correlation	.00	.63	.22		.04
Sig. (2-tailed)	180.00	182.00	182.00	182.00	182.00
N					
Educational Outcomes	-.14	.02	.02	-.16*	1.00
Pearson Correlation	.06	.82	.76	.04	
Sig. (2-tailed)	182.00	184.00	184.00	182.00	184.00
N					

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

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

4.6.7 Relationship between Absenteeism & Educational Outcomes

Due to the limited scope of this study, only the overall index of rate of absenteeism was focused on instead of separate measures of each grade year. The histogram depicted below plots the absenteeism rate for the sample and contrasts it to the standard normal distribution. The distribution for the participants in this study clearly deviates from normality. The positively skewed distribution (1.23, s.e. = .181) suggests that the number of classes the

participants were absent from was less than would be expected in a perfectly symmetrical distribution. Even though the assumption of normality was violated, it was considered that the violation was necessary for the data to reflect the true population situation, and then the next step of analysis was undertaken.

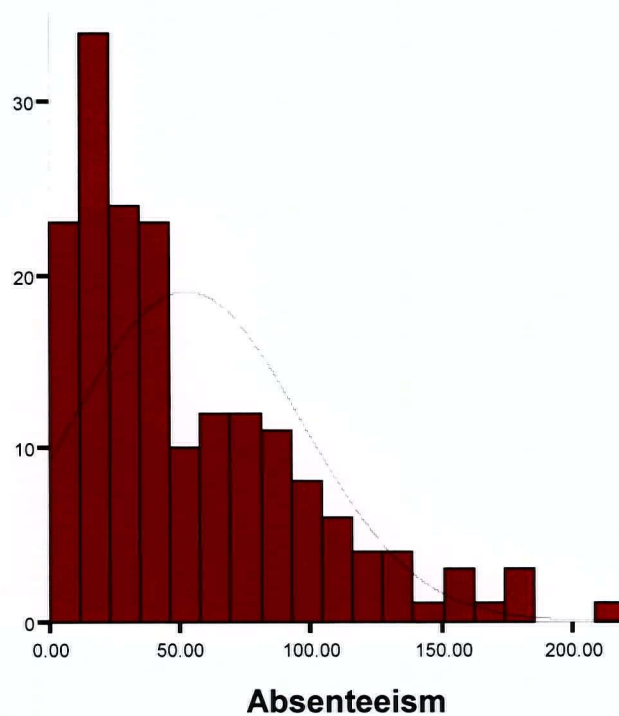


Figure 4.7 Absenteeism Index for the Total Duration of Five Years

Exploratory Data Analysis of the Independent Variable

Absenteeism was further examined across the seven educational pathways. Two issues need to be addressed after investigating the derived box plots below (see Figure 4.8). First, the sizes of each group were found to be unequal and, in particular, education pathways 3 and 5 were inadequately represented, with sample sizes of eight and four, respectively. As such, it was decided that any parametric tests performed would not be robust or reliable.

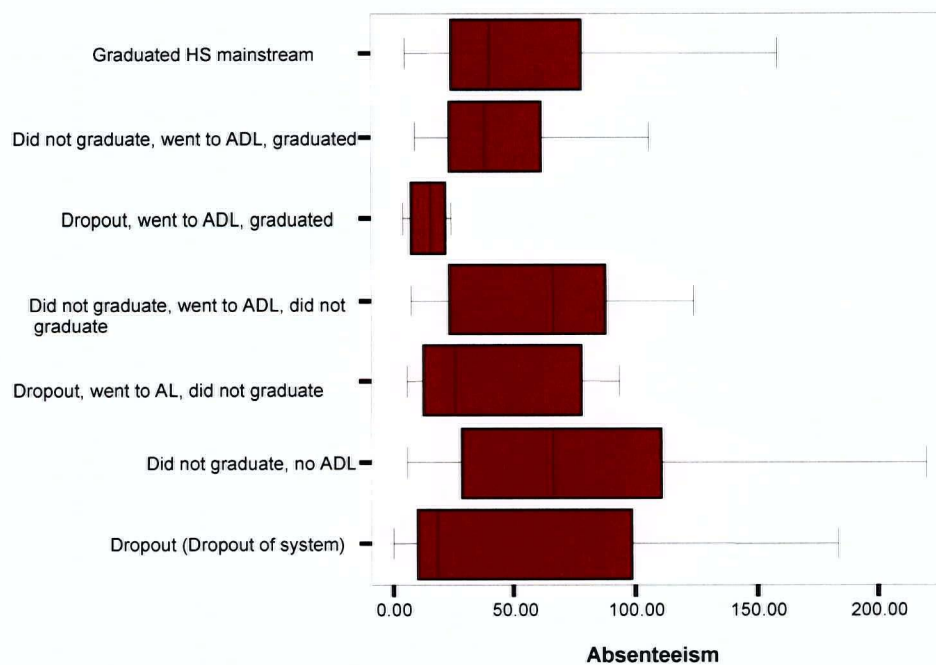


Figure 4.8 Box-and-Whisker Plots of Absenteeism across the Seven Different Pathways

Second, it was also observed that the second assumption of homogeneity of variance was violated. With these two important considerations in mind, the Brown-Forsythe and Welch tests were performed to supplement any conclusions drawn from the ANOVA. In addition, the non-parametric Kruskal-Wallis test was also performed.

Differences across the seven pathways for absenteeism

The research question for this section of the study postulated that there would be significant differences in the participants' mean absenteeism rates across the seven educational pathways. Specifically:

Ho: There is no difference in the participants' absenteeism rate across the educational pathways.

H1: There is a difference in the participants' absenteeism rate across the educational pathways.

An ANOVA ($F = 1.580$, $p > .05$) was used to test whether there were difference in absenteeism. Results suggested that there was no significant difference in the absenteeism rate across the seven educational outcomes. These findings suggest that absenteeism for this particular sample is not related to graduation or dropout rates. Further, the rate of absenteeism was not indicative of the educational pathways the participants followed. Robust asymptotically F distributed tests were also performed and the Brown-Forsythe test supported the ANOVA test. However, the Welch test concluded that there was a significant difference between groups. Finally, the non-parametric test supported the findings of the Brown-Forsythe and ANOVA tests.

In addition, contrast comparisons were also performed and linear relationships ($F = 2.389$) were also found to be insignificant as well at a $p < .05$ level. In other words, there was also no positive or negative linear relationship between absenteeism and educational pathways.

4.6.8 Conclusion

After analyzing the sample's demographic information and school administrative details for a comprehensive profile of the participants, each independent variable was subsequently explored for significant relationships between the variables in question and the dependent variable of this study – educational pathways. Since many relationships were not significant correlation matrices were computed to identify underlying relationships between the independent variables and educational pathways. *The percentage of ESL students* registered in each of the participant's schools from the school administrative details, together with *immigration class* from the demographic indicators, were compared. These two

predictors were investigated in later analyses to build regression models to identify significant predictors for educational pathways (**Hypothesis A**).

4.7 Academic Indicators of Ethnic and Linguistic Minority Students

In addition to the available demographic and school administrative profile of the ESL students, academic indicators (i.e., grade point averages [GPA] and language streaming) were also recorded, and these indicators were analyzed for significant relationships and trends. Before any statistical tests were performed, the distribution of these indicators were explored and checked to satisfy normality and homogeneity of variance assumptions.

4.7.1 Grade Point Average (GPA)

Although data were obtained for all the courses that each participant took over the seven year span of this study, only the scores of four examinable courses (English, Mathematics, Science and Social Studies) were included. The decision to include these courses as measures of success has already been justified in Chapter Three. GPA's were initially computed for all courses taken over the period of five years of high school. Thus, there were a total of five GPA scores, one for each year of high school education.

An index GPA score was computed based on the mean of all five GPA scores. Table 4.19 displays the descriptive summary of the overall GPA scores for this sample of students. The minimum and maximum GPA scores recorded were .51 and 3.92 respectively, suggesting that the lowest score achieved in this cohort was SG (Standing Granted), and the highest was a high B+. The mean is 2.48 (s.d. = .750), indicating the majority of the students scored between C+ and B. The skewness and kurtosis statistics are fairly small, indicative of a distribution that can be assumed to be fairly normal. The plotted histogram displays the distribution of the sample (see Figure 4.9).

Table 4.19 Descriptive Statistics for the Overall GPA Score of All Respondents

N	Valid	184
	Missing	0
Mean		2.4789
Std. Deviation		.75003
Skewness		-.306
Std. Error of Skewness		.179
Kurtosis		-.523
Std. Error of Kurtosis		.356
Minimum		.51
Maximum		3.92

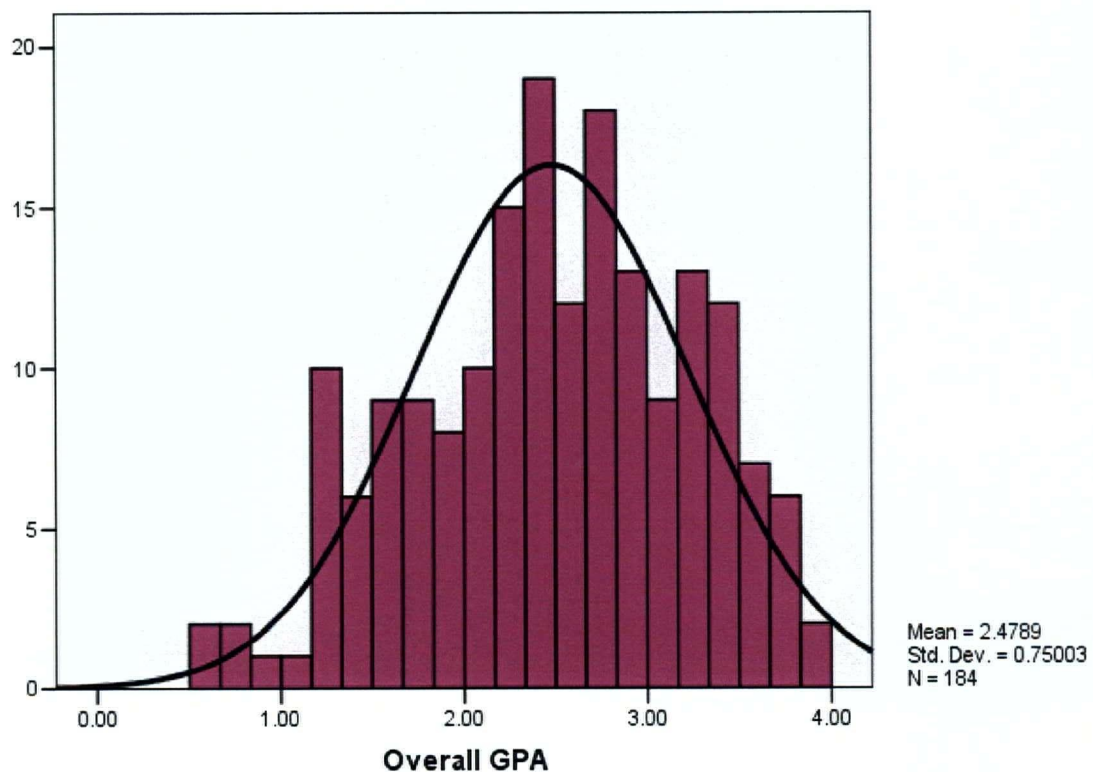


Figure 4.9 Histogram for the Overall GPA Score of all Respondents

The overall GPA was then used as an indicator of successful educational outcomes. A table displaying all the means for each educational pathway (Table 4.20) was generated to reveal the distribution of the overall GPA score across the seven educational outcomes. The groups

with the lowest GPA were those who opted to drop out of the system (*educational pathway 1*) and those who dropped out, went on to ADL centers but did not graduate (*educational pathway 3*), averaging a GPA between C and C-. Those who did graduate from the mainstream high schools, had an overall GPA of 2.91, a very high B, and this was not much higher than those who stayed for five years, went on to ADL centers and eventually graduated (mean = 2.57, s.d. =.481).

Table 4.20 Means Distribution of the Total GPA Scores across Educational Outcomes

Educational Outcomes	Mean	N	Std. Deviation
1 Dropout (Permanent dropout)	1.8851	26	.67169
2 Did not graduate, no ADL	2.3670	18	.79504
3 Dropout, went to ADL, did not graduate	1.3549	9	.70428
4 Did not graduate, went to ADL, did not graduate	2.0311	13	.60192
5 Dropout, went to ADL, graduated	2.1127	5	.49768
6 Did not graduate, went to ADL, graduated	2.5678	39	.48094
7 Graduated mainstream HS	2.9081	74	.58338
Total	2.4789	184	.75003

Overall findings are that the higher the mean GPA score, the better the chances are of achieving successful educational outcomes. The educational pathways taken may be different, but successful outcomes remain. Further, students who did drop out, and subsequently attended adult learning centers still managed to graduate with a mean GPA score of at least 2.1.

The five different GPA components (GPA for Grade 8, 9, 10, 11 and 12) were examined separately. In total, there were 20 GPA scores for which further analyses of group differences were performed.

4.7.2 Language Streaming

The association between initial language support placement (language proficiency) and academic achievement was investigated via the distribution of all 184 participants across three specific language support programs: reception, transition, and integration. The frequency distribution is presented in the pie chart and bar graph below (see Figures 4.10 and 4.11).

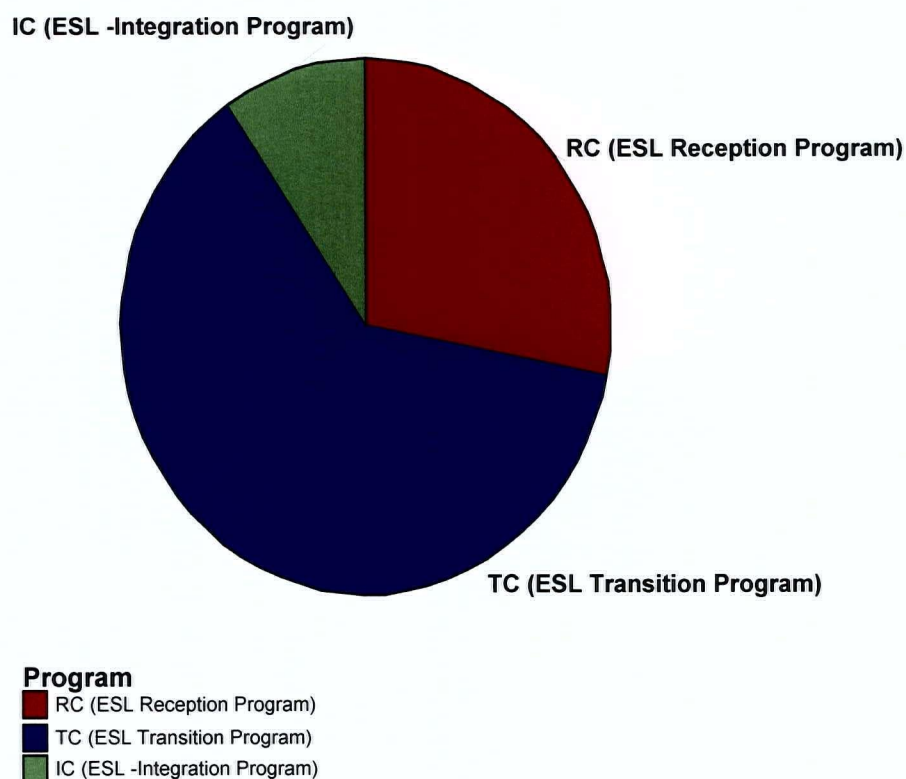


Figure 4.10 Total Numbers of Students and their Respective Allocated Language Support Programs

It can be seen that most students were enrolled in the Transition program. The bar graph details this proportion to be 63% of the participants. Fifty participants (28%) were enrolled in the Reception program and 9% in the Integration program.

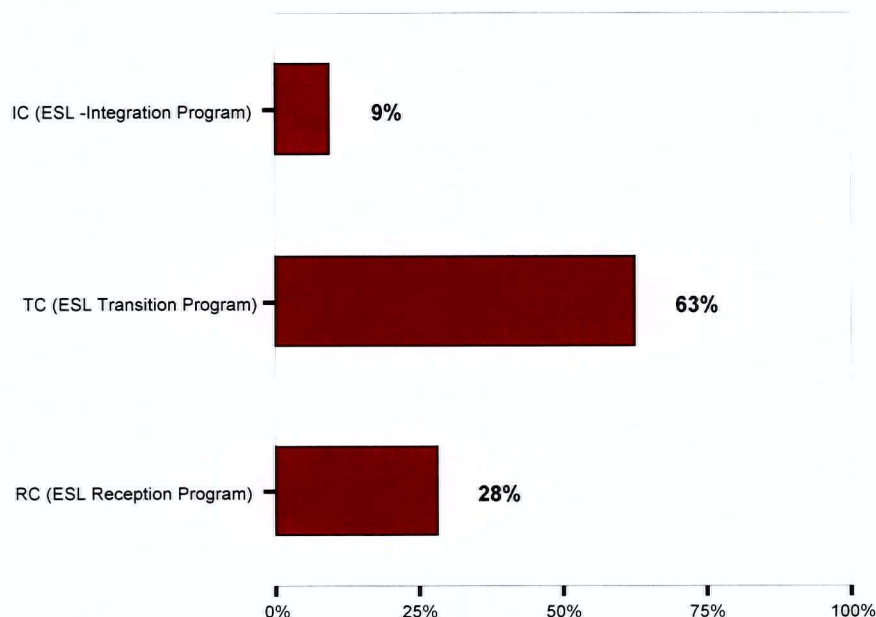


Figure 4.11 Percentage of Students and their Respective Allocated Support Programs

The mean scores for educational pathways were then obtained for each of the programs. A closer inspection reveals certain interesting trends, as detailed in Table 4.21 below.

Table 4.21 Educational Outcome Means Across the Three Language Support Programs

	Educational Outcome Means	N	Std. Deviation
1 RC (ESL Reception Program)	4.02	50	2.218
2 TC (ESL Transition Program)	5.46	112	2.130
3 IC (ESL -Integration Program)	5.65	17	2.422

Students enrolled in the Reception program had a mean educational outcome score of 4.02 (s.d. = 2.22). This implies that the 50 students enrolled in this program had a central tendency to fall into education pathway 4 where they stayed in school for five years but did not graduate, went on to ADL centers and still had not managed to graduate by the end of this study. These results suggest that students who were enrolled in the Reception program did not graduate. The students enrolled in the Transition program fared better, with a mean score of 5.46 (s.d. = 2.130), indicating a tendency to choose between education pathways 5 or 6. This

suggests that the majority of the 112 students who were enrolled in this program attended high school, dropped out, but proceeded to attend ADL centers and graduated with a high school diploma. Students enrolled in the Integration program had a higher mean score of 5.65 as compared to those in the Transition program. These students were more likely to have attended mainstream high school but failed to graduate, then proceeded to attend ADL centers and graduated with a high school diploma.

The apparent trend is that when students enrol in a language support program one level higher (i.e., Transition instead of Reception), they are generally likely to perform better and eventually to graduate. This positive ordinal trend is plotted in the following bar graph.

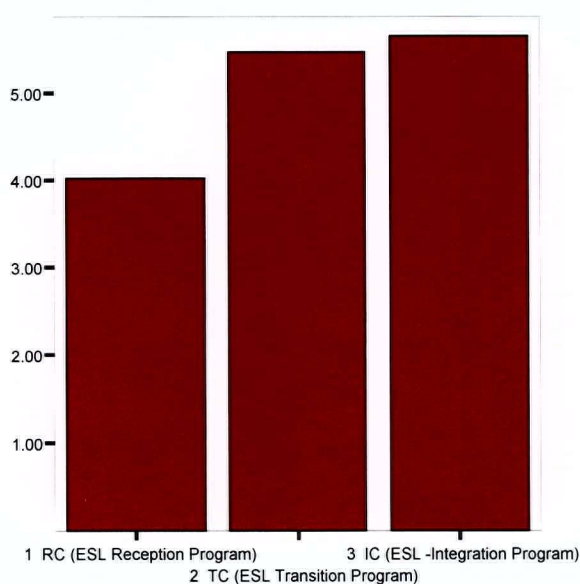


Figure 4.12 Means of Students within the Respective Allocated Language Support Programs

Language Streaming and Educational Pathways

To understand the distribution of the participants across the seven educational pathways in relation to their levels of language proficiency (language streaming), a cross-tabulation was computed (See Table 4.22).

Table 4.22 Allocated Language Support Programs across Educational Pathways

Educational Outcomes	Language Support Programs			Total
	Reception Program	Transition Program	Integration Program	
1. Dropout (Permanent Dropout)	10 20.0%	13 11.6%	3 17.6%	26 14.1%
2. Did not graduate, did not attend ADL	6 12.0%	7 6.3%	0 .0%	18 9.8%
3. Dropout, went to ADL, did not graduate	7 14.0%	1 .9%	1 5.9%	9 4.9%
4. Did not graduate, went to ADL, did not graduate	5 10.0%	8 7.1%	0 .0%	13 7.1%
5. Dropout, went to ADL, graduated	1 2.0%	4 3.6%	0 .0%	5 2.7%
6. Did not graduate, went to ADL, graduated	14 28.0%	24 21.4%	1 5.9%	39 21.2%
7. Graduated mainstream HS	7 14.0%	55 49.1%	12 70.6%	74 40.2%
Total	50 100%	112 100%	17 100%	184 100%

The findings show that students (28%) registered in the Reception level (beginning English level at time of registration) were not able to acquire sufficient course credits to graduate from mainstream high schools within the five year allocated time frame. Instead, most in this language proficient category subsequently completed their high school course requirements at adult learning centres (*educational pathway 6*). The highest number of permanent dropouts also came from this category of language proficiency: ten participants (20%) from the Reception program were permanent dropouts in comparison to 17.6% from the Integration and 11.6% from the Transition program. This shows that participants who started their high school career with beginning levels of English proficiency tended not to do well since they either permanently dropped out (20%) or eventually attend ADL centres. More than 50% of the students (n=27) from this language support category took courses at ADL centres. At the end of this study, 12 students were still taking courses at ADL centres.

Participants registered in the Transition program fared much better than those registered in the Reception program. Fifty five participants (49.1%) managed to graduate. Although 25% either dropped out or failed to graduate, they proceeded to adult learning

centres and eventually obtained their high school diplomas, bringing the total number of graduates from this language support program to approximately 74%.

Finally, participants in the Integration program were more successful in acquiring their diploma via the mainstream educational route (70.6%). However, 17.6% of the participants registered in this program permanently dropped out of school and did not attempt to graduate via adult learning centres.

The educational pathways taken by the participants revealed certain trends. Findings suggest that 13 year old adolescents beginning their high school career with beginning English language proficiency are less likely to achieve a high school diploma than those who arrive with some English language proficiency (students in the Transition program) or those who were considered to be proficient in English (students in the Integration program) to be mainstreamed in regular classrooms. The high school graduation rate for students in the Reception program was 44% while 74% graduated from the Transition program. The highest percentage of students who acquired high school diplomas were from the Integration program. Of the total participants registered in the Integration program, 76.5% graduated from high school.

Language Streaming and Academic Achievement

An initial approach to understanding the educational outcomes of the participants was to investigate the effects of language streaming on the academic achievement of these participants. The data collected included grade point averages (GPA) spread across the grades, together with the respective language support programs that they were placed in. The nature of the data and hypothesized research question allows for the appropriate application of an analysis of variance (One Way ANOVA). The One-Way ANOVA procedure produced

a one-way analysis of variance for a quantitative dependent variable (grade point averages) by a single factor (independent) variable, namely the initial language support program type that the student was placed under.

Exploratory Data Analysis

The following are initial grade point mean summaries split by the various language support programs for a preliminary understanding of the distribution. Based on a preliminary overview of the results below, it is evident that students from different language support programs have differing academic achievement.

Table 4.23 Means Distribution of the GPA Scores across the Language Support Programs for Grade 8

		ESL Program			
		Reception	Transition	Integration	Total
GPA for academic courses in grade 8	Mean	2.31	2.74	3.07	2.71
	Valid N	20	79	15	114
GPA for non-academic courses in grade 8	Mean	2.49	2.77	3.07	2.74
	Valid N	33	90	18	141
GPA for ESL courses in grade 8	Mean	2.32	2.45	2.45	2.42
	Valid N	35	88	7	130
GPA for all courses in grade 8	Mean	2.25	2.60	2.91	2.53
	Valid N	50	113	16	179

Table 4.24 Means Distribution of the GPA Scores across the Language Support Programs for Grade 9

		ESL Program			
		Reception	Transition	Integration	Total
GPA for academic courses in grade 9	Mean	1.98	2.67	2.61	2.49
	Valid N	40	101	19	160
GPA for non academic courses in grade 9	Mean	2.41	2.69	2.94	2.65
	Valid N	44	104	19	167
GPA for ESL courses in grade 9	Mean	2.15	2.46	2.49	2.37
	Valid N	35	77	6	118
GPA for all courses in grade 9	Mean	2.19	2.60	2.78	2.51
	Valid N	49	109	19	177

Table 4.25 Means Distribution of the GPA Scores across the Language Support Programs for Grade 10

		ESL Program			
		Reception	Transition	Integration	Total
GPA for academic courses in grade 10	Mean	1.80	2.46	2.98	2.35
	Valid N	43	102	19	164
GPA for non-academic courses in grade 10	Mean	2.45	2.88	3.20	2.80
	Valid N	48	106	20	174
GPA for ESL courses in grade 10	Mean	2.13	2.37	2.40	2.29
	Valid N	33	58	1	92
GPA for all courses in grade 10	Mean	2.06	2.65	3.05	2.53
	Valid N	49	107	20	176

Table 4.26 Means Distribution of the GPA Scores across the Language Support Programs for Grade 11

		ESL Program			
		Reception	Transition	Integration	Total
GPA for academic courses in grade 11	Mean	1.63	2.46	2.71	2.28
	Valid N	39	102	18	159
GPA for non-academic courses in grade 11	Mean	2.39	2.89	2.94	2.83
	Valid N	19	103	19	141
GPA for ESL courses in grade 11	Mean	1.64	2.21	.	1.83
	Valid N	31	16	0	47
GPA for all courses in grade 11	Mean	1.68	2.68	2.76	2.41
	Valid N	46	103	19	168

Table 4.27 Means Distribution of the GPA Scores across the Language Support Programs for Grade 12

		ESL Program			
		Reception	Transition	Integration	Total
GPA for academic courses in grade 12	Mean	2.12	2.45	3.08	2.45
	Valid N	27	92	15	134
GPA for non academic courses in grade 12	Mean	2.69	3.21	3.26	3.10
	Valid N	34	96	18	148
GPA for ESL courses in grade 12	Mean	2.00	.	.	2.00
	Valid N	8	0	0	8
GPA for all courses in grade 12	Mean	2.39	2.55	3.10	2.58
	Valid N	35	112	18	165

The observed trend points to better grade point averages being associated with higher levels of language support groups. Based on the overall mean of all courses, the highest GPA averages at all levels are all associated with students from the Integration program. The

highest scores for each course type by grade level are highlighted in blue, with the lowest being highlighted in red. Univariate ANOVAs were used to validate whether real differences in academic achievement occurred between students from different language support groups.

Several data assumptions and considerations had to be met, that is, assumption of normality and homogeneity of variance. The data were explored by generating distribution statistics for the different language support groups at the various grades/levels of education received (see Table 4.28). Normality can be tested by looking at the skewness statistic, which shows how much the distribution varies from a main distribution. In general, a value greater than the absolute value of plus minus one indicates a distribution that differs significantly from a main distribution.

The skewness statistics highlighted in blue are below the absolute value of 1 and indicate a conformance to a main distribution, while the statistics in red indicate a non-compliance to normality. Since a large part of the distribution breakdown conforms to a main distribution, the assumption of normality can be assumed to be satisfied.

For the data consideration of homogeneity of variance required for One Way ANOVA tests, the variability of the data distribution is assumed to be of a similar variance between the groups in question. Table 4.29 shows the results.

Table 4.28 Table Summary of the Descriptive Statistics for all GPA Scores

			ESL Program					
			Reception		Transition		Integration	
			Statistic	Std. Error	Statistic	Std. Error	Statistic	Std. Error
GPA for academic courses in grade 8	Mean		2.3133	0.20669	2.7407	0.10710	3.0650	0.21683
	95% Confidence Interval for Mean	Lower Bound	1.8807		2.5275		2.5999	
		Upper Bound	2.7459		2.9539		3.5301	
	Skewness		-0.069	0.512	-0.474	0.271	-0.607	0.580
	Kurtosis		-0.751	0.992	0.142	0.535	-0.263	1.121
GPA for non academic courses in grade 8	Mean		2.4908	0.11664	2.7710	0.07227	3.0670	0.13041
	95% Confidence Interval for Mean	Lower Bound	2.2532		2.6274		2.7918	
		Upper Bound	2.7284		2.9146		3.3421	
	Skewness		-0.029	0.409	-0.414	0.254	-0.387	0.536
	Kurtosis		-0.292	0.798	0.205	0.503	-0.894	1.038
GPA for ESL courses in grade 8	Mean		2.3234	0.13555	2.4541	0.08149	2.4524	0.18981
	95% Confidence Interval for Mean	Lower Bound	2.0480		2.2921		1.9879	
		Upper Bound	2.5989		2.6160		2.9168	
	Skewness		-0.017	0.398	-0.297	0.257	0.452	0.794
	Kurtosis		-0.672	0.778	0.061	0.508	-1.404	1.587
GPA for all courses in grade 8	Mean		2.2479	0.09898	2.6015	0.05466	2.9083	0.13365
	95% Confidence Interval for Mean	Lower Bound	2.0490		2.4932		2.6234	
		Upper Bound	2.4468		2.7098		3.1931	
	Skewness		-0.049	0.337	-0.453	0.227	-0.382	0.564
	Kurtosis		-0.894	0.662	0.594	0.451	-0.921	1.091
GPA for academic courses in grade 9	Mean		1.9829	0.16523	2.6690	0.09070	2.6133	0.21642
	95% Confidence Interval for Mean	Lower Bound	1.6487		2.4890		2.1587	
		Upper Bound	2.3171		2.8489		3.0680	
	Skewness		0.118	0.374	-0.663	0.240	-0.379	0.524
	Kurtosis		-0.464	0.733	0.010	0.476	-0.542	1.014
GPA for non academic courses in grade 9	Mean		2.4095	0.12238	2.6909	0.06508	2.9441	0.16210
	95% Confidence Interval for Mean	Lower Bound	2.1627		2.5618		2.6036	
		Upper Bound	2.6563		2.8199		3.2847	
	Skewness		-1.044	0.357	-0.518	0.237	-0.004	0.524
	Kurtosis		2.340	0.702	-0.057	0.469	-1.369	1.014
GPA for ESL courses in grade 9	Mean		2.1515	0.17161	2.4557	0.09362	2.4903	0.35775
	95% Confidence Interval for Mean	Lower Bound	1.8028		2.2692		1.5707	
		Upper Bound	2.5003		2.6422		3.4099	
	Skewness		-0.633	0.398	-0.495	0.274	1.191	0.845
	Kurtosis		-0.565	0.778	0.388	0.541	0.771	1.741
GPA for all courses in grade 9	Mean		2.1917	0.11211	2.6011	0.06930	2.7759	0.18114
	95% Confidence Interval for Mean	Lower Bound	1.9663		2.4637		2.3954	
		Upper Bound	2.4171		2.7385		3.1565	
	Skewness		-0.741	0.340	-0.396	0.231	-0.158	0.524
	Kurtosis		0.320	0.668	-0.405	0.459	-1.166	1.014

Table 4.28 (Continued) Table Summary of the Descriptive Statistics for all GPA Scores

			ESL Program					
			Reception		Transition		Integration	
			Statistic	Std. Error	Statistic	Std. Error	Statistic	Std. Error
GPA for academic courses in grade 10	Mean		1.8028	0.14729	2.4564	0.09017	2.9758	0.21101
	95% Confidence Interval for Mean	Lower Bound	1.5055		2.2776		2.5325	
		Upper Bound	2.1000		2.6353		3.4191	
	Skewness		0.062	0.361	-0.582	0.239	-0.473	0.524
	Kurtosis		-0.224	0.709	0.100	0.474	-1.574	1.014
GPA for non academic courses in grade 10	Mean		2.4527	0.13433	2.8842	0.06016	3.1959	0.14919
	95% Confidence Interval for Mean	Lower Bound	2.1825		2.7649		2.8837	
		Upper Bound	2.7230		3.0034		3.5082	
	Skewness		-0.764	0.343	-0.364	0.235	-0.648	0.512
	Kurtosis		0.508	0.674	-0.706	0.465	-1.022	0.992
GPA for ESL courses in grade 10	Mean		2.1347	0.14638	2.3724	0.10158		
	95% Confidence Interval for Mean	Lower Bound	1.8365		2.1690			
		Upper Bound	2.4328		2.5758			
	Skewness		-0.519	0.409	-0.602	0.314		
	Kurtosis		0.418	0.798	0.640	0.618		
GPA for all courses in grade 10	Mean		2.0639	0.11259	2.6530	0.06730	3.0495	0.17106
	95% Confidence Interval for Mean	Lower Bound	1.8375		2.5196		2.6914	
		Upper Bound	2.2903		2.7865		3.4075	
	Skewness		-0.617	0.340	-0.425	0.234	-0.438	0.512
	Kurtosis		0.533	0.668	-0.128	0.463	-1.543	0.992
GPA for academic courses in grade 11	Mean		1.6348	0.18729	2.4569	0.09508	2.7065	0.27461
	95% Confidence Interval for Mean	Lower Bound	1.2557		2.2683		2.1271	
		Upper Bound	2.0140		2.6455		3.2859	
	Skewness		0.010	0.378	-0.504	0.239	-0.763	0.536
	Kurtosis		-1.297	0.741	-0.249	0.474	-0.535	1.038
GPA for non academic courses in grade 11	Mean		2.3895	0.29179	2.8873	0.08618	2.9423	0.22562
	95% Confidence Interval for Mean	Lower Bound	1.7765		2.7164		2.4683	
		Upper Bound	3.0025		3.0582		3.4163	
	Skewness		-0.401	0.524	-1.102	0.238	-1.840	0.524
	Kurtosis		-0.636	1.014	1.132	0.472	3.696	1.014
GPA for ESL courses in grade 11	Mean		1.6402	0.20218	2.2083	0.25290		
	95% Confidence Interval for Mean	Lower Bound	1.2273		1.6693			
		Upper Bound	2.0531		2.7474			
	Skewness		0.237	0.421	-0.482	0.564		
	Kurtosis		-0.898	0.821	0.126	1.091		
GPA for all courses in grade 11	Mean		1.6782	0.15811	2.6798	0.08508	2.7604	0.25034
	95% Confidence Interval for Mean	Lower Bound	1.3598		2.5110		2.2345	
		Upper Bound	1.9967		2.8485		3.2864	
	Skewness		0.073	0.350	-0.846	0.238	-1.123	0.524
	Kurtosis		-1.115	0.688	0.495	0.472	0.785	1.014

Table 4.28 (Continued) Table Summary of the Descriptive Statistics for all GPA Scores

			ESL Program					
			Reception		Transition		Integration	
			Statistic	Std. Error	Statistic	Std. Error	Statistic	Std. Error
GPA for academic courses in grade 12	Mean		2.1181	0.16988	2.4471	0.11436	3.0824	0.21192
	95% Confidence Interval for Mean	Lower Bound	1.7689		2.2199		2.6279	
		Upper Bound	2.4673		2.6743		3.5370	
	Skewness		0.021	0.448	-0.543	0.251	-1.124	0.580
	Kurtosis		-0.509	0.872	-0.599	0.498	0.709	1.121
GPA for non academic courses in grade 12	Mean		2.6929	0.15616	3.2121	0.07597	3.2649	0.21294
	95% Confidence Interval for Mean	Lower Bound	2.3752		3.0613		2.8157	
		Upper Bound	3.0106		3.3629		3.7142	
	Skewness		-1.212	0.403	-0.978	0.246	-1.118	0.536
	Kurtosis		2.038	0.788	0.241	0.488	0.238	1.038
GPA for ESL courses in grade 12	Mean		2.0021	0.34079				
	95% Confidence Interval for Mean	Lower Bound	1.1963					
		Upper Bound	2.8079					
	Skewness		-0.140	0.752				
	Kurtosis		-1.970	1.481				
GPA for all courses in grade 12	Mean		2.3929	0.14552	2.5496	0.11627	3.0969	0.19518
	95% Confidence Interval for Mean	Lower Bound	2.0972		2.3192		2.6852	
		Upper Bound	2.6887		2.7800		3.5087	
	Skewness		-0.962	0.398	-0.994	0.228	-1.158	0.536
	Kurtosis		0.973	0.778	-0.114	0.453	0.499	1.038

a. GPA for ESL courses in grade 10 is constant when ESL Program = Integration. It has been omitted.

b. There are no valid cases for GPA for ESL courses in grade 11 when ESL Program = 3.000. Statistics cannot be computed for this level.

c. There are no valid cases for GPA for ESL courses in grade 12 when ESL Program = 2.000. Statistics cannot be computed for this level.

If the significance value (Sig. column) exceeds 0.05, the variances are assumed to be equal and the assumption is justified. Values highlighted in blue indicate that the assumption for homogeneity of variance was met, and since most values exceed 0.05, it is assumed that the data largely satisfies the assumption of variance homogeneity.

Hypothesis testing

To apply ANOVA to the research question, the hypotheses were stated as:

H₀: GPA scores are equal across the different language support programs (Reception, Transition, Integration).

H1: GPA scores are different across the different language support programs

(Reception, Transition, and Integration).

Table 4.29 Individual Tests of Homogeneity of Variances for all GPA Scores

GPA Scores	Levene Statistic	df1	df2	Sig.
GPA for academic courses in grade 8	.286	2	111	.752
GPA for non-academic courses in grade 8	.333	2	138	.717
GPA for ESL courses in grade 8	1.084	2	127	.342
GPA for all courses in grade 8	2.793	2	176	.064
GPA for academic courses in grade 9	.402	2	157	.670
GPA for non-academic courses in grade 9	.335	2	164	.716
GPA for ESL courses in grade 9	2.007	2	115	.139
GPA for all courses in grade 9	.253	2	174	.776
GPA for academic courses in grade 10	.424	2	161	.655
GPA for non-academic courses in grade 10	3.702	2	171	.027
GPA for ESL courses in grade 10	.343 ^a	1	89	.559
GPA for all courses in grade 10	1.062	2	173	.348
GPA for academic courses in grade 11	3.318	2	156	.039
GPA for non-academic courses in grade 11	3.129	2	138	.047
GPA for ESL courses in grade 11	.654	1	45	.423
GPA for all courses in grade 11	3.426	2	165	.035
GPA for academic courses in grade 12	2.725	2	131	.069
GPA for non-academic courses in grade 12	.753	2	145	.473
GPA for all courses in grade 12	3.939	2	162	.021

^a. Groups with only one case are ignored in computing the test of homogeneity of variance for GPA for ESL courses in grade 10.

Since there are four sets of GPA scores (academic, non-academic, ESL, and all courses) for each of the five grade levels in a high school program, 20 individual null hypotheses were tested. The summarized ANOVA table (see Table 4.30) provides evidence to support the stated hypotheses.

Table 4.30 Individual Univariate ANOVA tests for all GPA Scores across Language Support Groups

		Sum of Squares	df	Mean Square	F	Sig.
GPA for academic courses in grade 8	Between Groups	6.116	4	1.529	1.740	.146
	Within Groups	95.783	109	.879		
	Total	101.899	113			
GPA for non-academic courses in grade 8	Between Groups	6.402	4	1.600	3.685	.007
	Within Groups	59.068	136	.434		
	Total	65.470	140			
GPA for ESL courses in grade 8	Between Groups	.579	3	.193	.328	.805
	Within Groups	74.070	126	.588		
	Total	74.649	129			
GPA for all courses in grade 8	Between Groups	6.969	3	2.323	6.162	.001
	Within Groups	65.974	175	.377		
	Total	72.943	178			
GPA for academic courses in grade 9	Between Groups	16.532	4	4.133	4.609	.002
	Within Groups	138.977	155	.897		
	Total	155.508	159			
GPA for non-academic courses in grade 9	Between Groups	5.137	4	1.284	2.540	.042
	Within Groups	81.909	162	.506		
	Total	87.045	166			
GPA for ESL courses in grade 9	Between Groups	2.601	3	.867	1.099	.353
	Within Groups	89.898	114	.789		
	Total	92.498	117			
GPA for all courses in grade 9	Between Groups	8.162	4	2.041	3.642	.007
	Within Groups	96.374	172	.560		
	Total	104.536	176			
GPA for academic courses in grade 10	Between Groups	23.174	4	5.793	6.750	.000
	Within Groups	136.466	159	.858		
	Total	159.640	163			
GPA for non-academic courses in grade 10	Between Groups	11.280	4	2.820	5.425	.000
	Within Groups	87.841	169	.520		
	Total	99.121	173			
GPA for ESL courses in grade 10	Between Groups	1.202	2	.601	.942	.394
	Within Groups	56.739	89	.638		
	Total	57.941	91			
GPA for all courses in grade 10	Between Groups	19.394	4	4.849	9.153	.000
	Within Groups	90.577	171	.530		
	Total	109.971	175			
GPA for academic courses in grade 11	Between Groups	26.248	4	6.562	6.137	.000
	Within Groups	164.650	154	1.069		
	Total	190.898	158			
GPA for non-academic courses in grade 11	Between Groups	5.952	4	1.488	1.647	.166
	Within Groups	122.868	136	.903		
	Total	128.820	140			
GPA for ESL courses in grade 11	Between Groups	3.407	1	3.407	2.873	.097
	Within Groups	53.366	45	1.186		
	Total	56.773	46			
GPA for all courses in grade 11	Between Groups	37.438	4	9.359	10.431	.000
	Within Groups	146.258	163	.897		
	Total	183.696	167			
GPA for academic courses in grade 12	Between Groups	10.414	4	2.603	2.438	.050
	Within Groups	137.749	129	1.068		
	Total	148.163	133			
GPA for non-academic courses in grade 12	Between Groups	8.518	4	2.130	3.286	.013
	Within Groups	92.677	143	.648		
	Total	101.196	147			
GPA for all courses in grade 12	Between Groups	7.402	4	1.850	1.454	.219
	Within Groups	203.658	160	1.273		
	Total	211.059	164			

To draw conclusions from the ANOVA tests, the null hypothesis that grade point average (GPA) scores are equal across language support programs is rejected for

significance values $p < .05$, and the obtained test values are flagged in blue. In other words, the GPA scores are different across language support programs. The opposing logic applies for significance values $p \geq .05$, and these test values are flagged in red. For these tests, the null hypotheses are accepted instead, translating to a conclusion that the GPA scores in these tests are equal across language support groups. The following table (see Table 4.31) summarizes the conclusions drawn for the scores of different test types by the different grade levels, that is, Academic/Non-academic/ESL/All Course types versus Grade 8 to Grade 12.

Table 4.31 Summary Table for all Accepted and Rejected Hypotheses for all GPA Scores

		F	Sig	
GPA for academic courses in grade 8	Between Groups	1.740	0.146	Significant value of the F tests ≥ 0.05 . Thus, do not reject the hypothesis that grade point average scores are equal across language support groups
GPA for non-academic courses in grade 8	Between Groups	3.685	0.007	Significant value of the F tests ≥ 0.05 . Thus, reject the hypothesis that grade point average scores are equal across language support groups
GPA for ESL courses in grade 8	Between Groups	0.328	0.805	Significant value of the F tests ≥ 0.05 . Thus, do not reject the hypothesis that grade point average scores are equal across language support groups
GPA for all courses in grade 8	Between Groups	6.162	0.001	Significant value of the F tests ≥ 0.05 . Thus, reject the hypothesis that grade point average scores are equal across language support groups
GPA for academic courses in grade 9	Between Groups	4.609	0.002	Significant value of the F tests ≥ 0.05 . Thus, reject the hypothesis that grade point average scores are equal across language support groups
GPA for non-academic courses in grade 9	Between Groups	2.540	0.042	Significant value of the F tests ≥ 0.05 . Thus, reject the hypothesis that grade point average scores are equal across language support groups
GPA for ESL courses in grade 9	Between Groups	1.099	0.353	Significant value of the F tests ≥ 0.05 . Thus, do not reject the hypothesis that grade point average scores are equal across language support groups
GPA for all courses in grade 9	Between Groups	3.642	0.007	Significant value of the F tests ≥ 0.05 . Thus, reject the hypothesis that grade point average scores are equal across language support groups
GPA for academic courses in grade 10	Between Groups	6.750	0.000	Significant value of the F tests ≥ 0.05 . Thus, reject the hypothesis that grade point average scores are equal across language support groups
GPA for non-academic courses in grade 10	Between Groups	5.425	0.000	Significant value of the F tests ≥ 0.05 . Thus, reject the hypothesis that grade point average scores are equal across language support groups
GPA for ESL courses in grade 10	Between Groups	0.942	0.394	Significant value of the F tests ≥ 0.05 . Thus, do not reject the hypothesis that grade point average scores are equal across language support groups
GPA for all courses in grade 10	Between Groups	9.153	0.000	Significant value of the F tests ≥ 0.05 . Thus, reject the hypothesis that grade point average scores are equal across language support groups
GPA for academic courses in grade 11	Between Groups	6.137	0.000	Significant value of the F tests ≥ 0.05 . Thus, reject the hypothesis that grade point average scores are equal across language support groups
GPA for non-academic courses in grade 11	Between Groups	1.647	0.166	Significant value of the F tests ≥ 0.05 . Thus, do not reject the hypothesis that grade point average scores are equal across language support groups
GPA for ESL courses in grade 11	Between Groups	2.873	0.097	Significant value of the F tests ≥ 0.05 . Thus, do not reject the hypothesis that grade point average scores are equal across language support groups
GPA for all courses in grade 11	Between Groups	10.431	0.000	Significant value of the F tests ≥ 0.05 . Thus, reject the hypothesis that grade point average scores are equal across language support groups
GPA for academic courses in grade 12	Between Groups	2.438	0.050	Significant value of the F tests ≥ 0.05 . Thus, reject the hypothesis that grade point average scores are equal across language support groups
courses in grade 12	Between Groups	3.286	0.013	point average scores are equal across language support groups
GPA for ESL courses in grade 12	Between Groups	NA*	NA*	Fewer than two groups for GPA for ESL courses in grade 12. No statistics are computed.
GPA for all courses in grade 12	Between Groups	1.454	0.219	Significant value of the F tests ≥ 0.05 . Thus, do not reject the hypothesis that grade point average scores are equal across language support groups

In summary, for Grade 8 courses, the GPA for non-academic courses and overall courses differ significantly for the different language support programs. The same observation goes for the academic, non-academic and overall courses for Grade 9 and Grade 10 courses. For Grade 11 courses, the academic and overall course GPAs also differs significantly. The GPA for Grade 12 academic, non-academic, and ESL courses is similarly observed.

Since the results from the ANOVA indicated that the groups differed in some way, the structure of the differences was further investigated. The means plots³ are demonstrated in Figure 4.13.

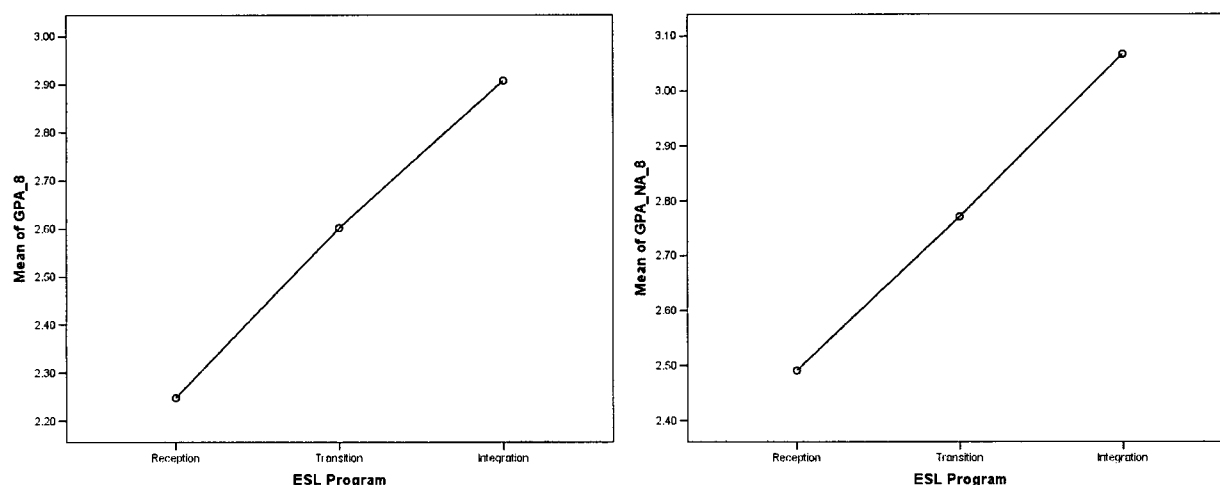


Figure 4.13 Means Plots for (i) Total GPA and (ii) Non-Academic GPA for all Grade 8 Students

Evident from the graphs above, the higher the level of language support program students belonged to, the higher the GPA scores for Grade 8 non-academic and overall courses, that is the students in the Transition language support program achieved higher GPA scores than those in the Reception program, and students in the Integration program performed better than those in the Transition program. For Grade 9 courses overall, and non-academic courses, the same applies: the higher the level of language support program students

³ Means plots were generated only for ANOVA tests that returned a significant p-value of <.05.

belonged to, the higher their GPA scores (see Figure 4.14). However, for ESL courses, the pattern observed is slightly different. Though students in the Transition group had higher scores than those from the Reception program, it was not progressively true, that is, students from the Integration program did not perform better than those in the Transition program, as shown below (see Figure 4.14).

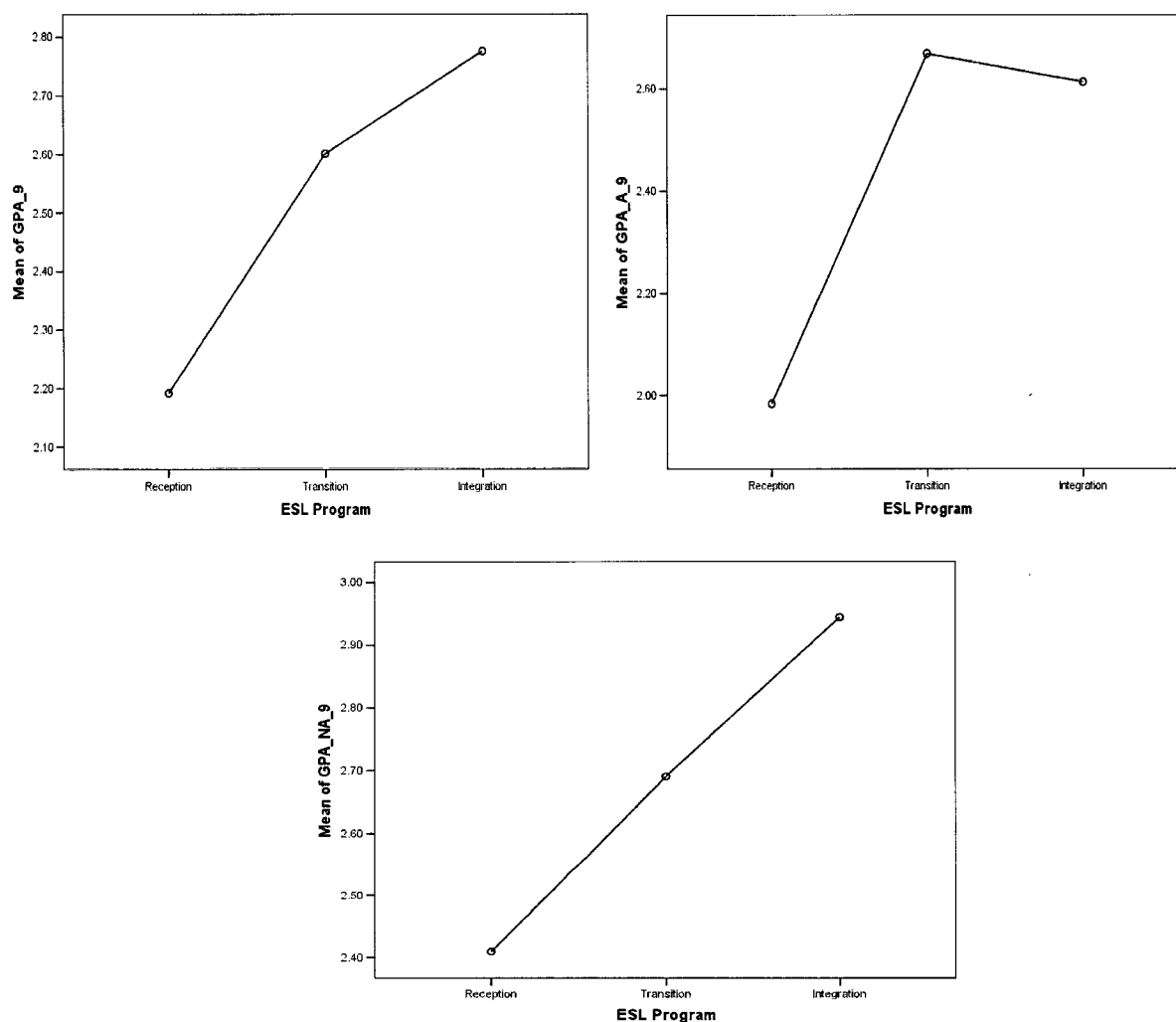


Figure 4.14 Means Plots for (i) Total GPA, (ii) Academic GPA and (iii) Non-Academic GPA for Grade 9 Students

For Grade 10 Academic, Non-academic, and Overall Course GPAs, the trend continues to be upward sloping, in that the higher the level of the language support groups the students belonged to, the higher the GPA scores.

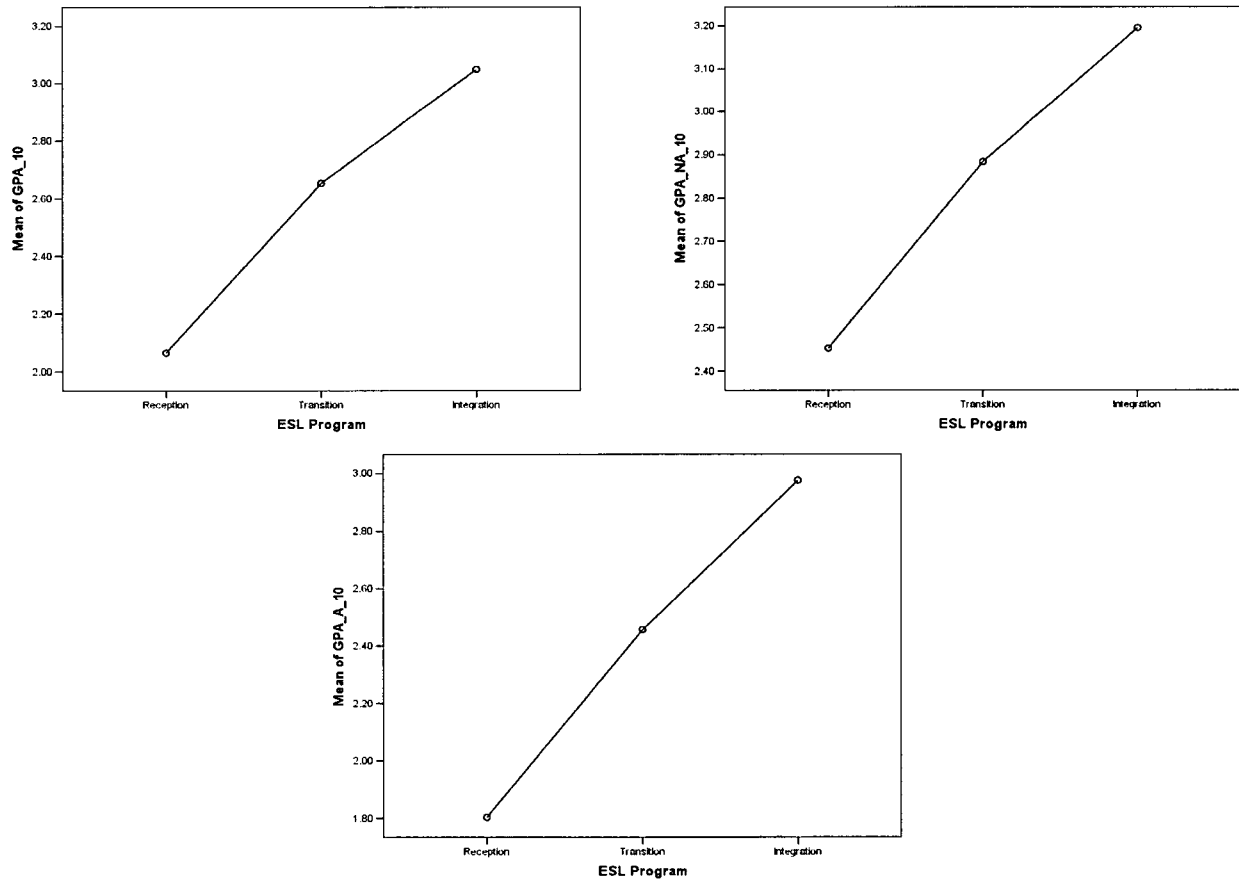


Figure 4.15 Means Plots for (i) Total GPA (ii) Academic GPA & (iii) Non-Academic GPA for Grade 10 Students

The same trend can also be observed for Academic and Overall course GPAs for Grade 11 courses (Figure 4.16).

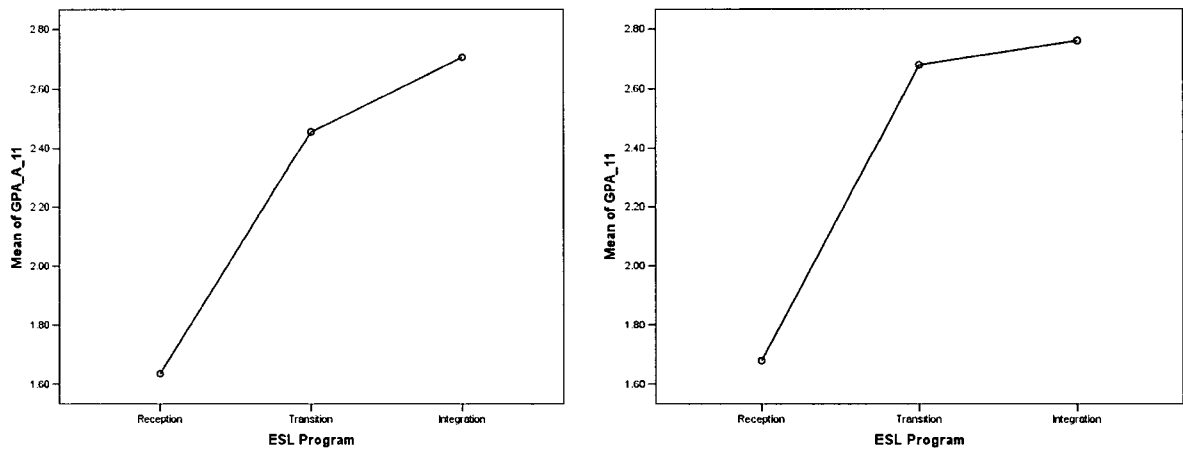


Figure 4.16 Means Plots for (i) Academic GPA and (ii) Total GPA for Grade 11 Students

Finally, for Grade 12 Academic and Non-Academic courses, though they are upward sloping, the rate of upward change in scores for Non-Academic courses are not

differentiated between students from the Transition Group and the Integration group, as reflected by the smoother gradient for the GPA scores between these 2 groups.

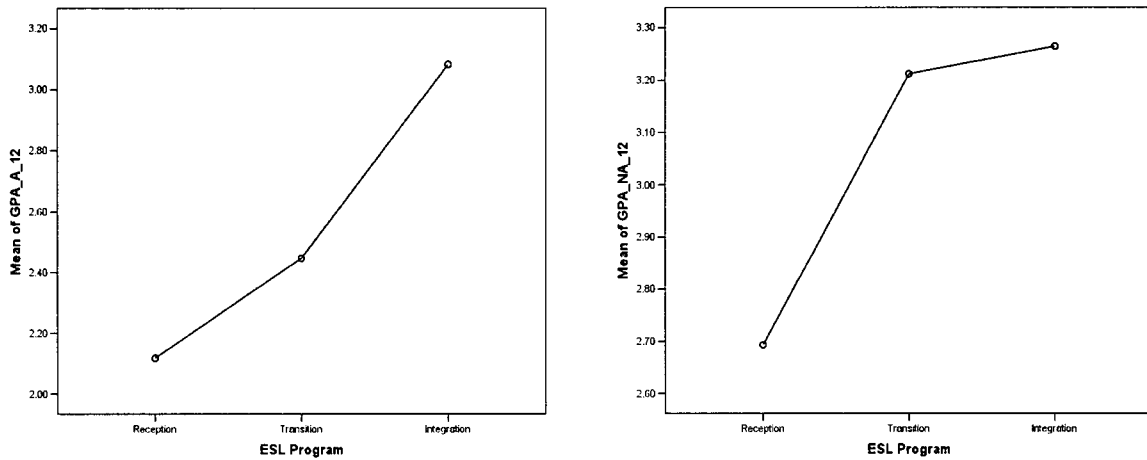


Figure 4.17 Means Plots for (i) Academic GPA and (ii) Total GPA for Grade 12 Students

4.7.3 Conclusion for Language Streaming and GPA

Participants in the different language support placement programs do perform significantly differently. Among all the significant relationships observed (with the exception of Grade 9 Academic courses), the trend indicates that students from the higher level language support programs perform better than those from the lower level, indicating that language proficiency is crucial to academic achievement.

4.7.4 Regression Analyses

The last stage of analysis was used to generate predictive regression models for educational pathways and outcomes based on any identified significant predictors from the demographic, school administrative or academic variables. However, all independent variables, except for immigration class from the demographic indicators and the percentage of ESL students registered in each of the participant's school from the school administrative profile, were not significantly related to the dependent variable.

Before any regression models were generated, scatterplots (see Figure 4.18 and Figure 4.19 respectively) were constructed for the two variables to gain a better understanding of the relationship, and to determine what types of classification and prediction models would be the most appropriate and optimum to choose.

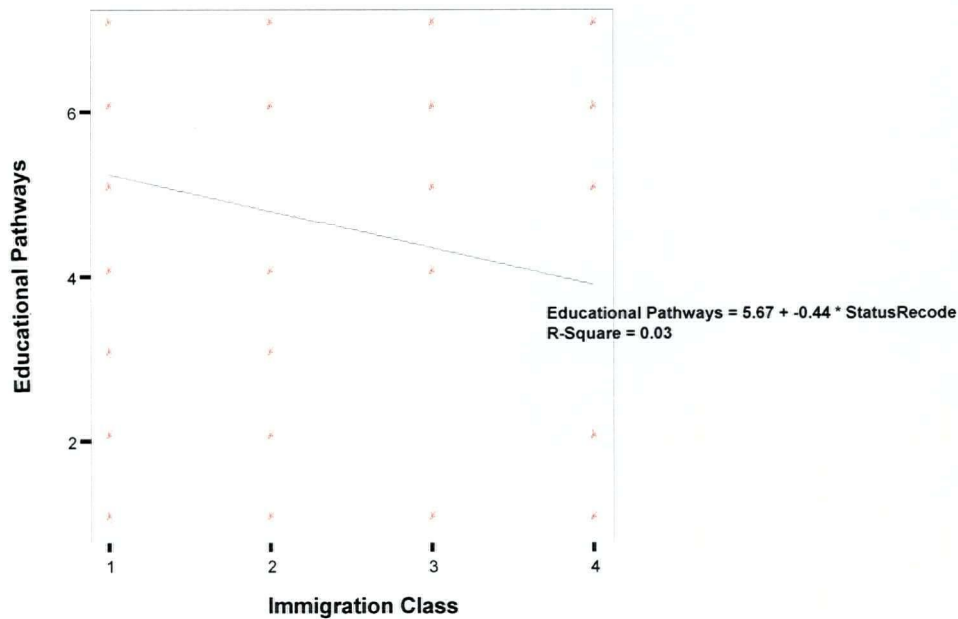


Figure 4.18 Scatterplot for Immigration class (Independent Demographic Variable) and Educational Outcomes (Dependent Variable)

The first scatterplot clearly indicated that a linear regression model was not an optimum model to adopt, which was also evident from the poor R-square statistic of 0.03 ($p < .05$). Quadratic and cubic models were no better, with R-square statistics of 0.026 ($p < .05$) and 0.027 ($p < .05$), respectively. Nonlinear regression was not considered for model generation since no appropriate predefined equations to predict educational pathways from immigration class were available. The scatterplot for the percentage of ESL students registered in each of the participant's school fared just as poorly, with an R-square statistic of 0.02 ($p < .05$). Quadratic and cubic fits were just as inadequate.

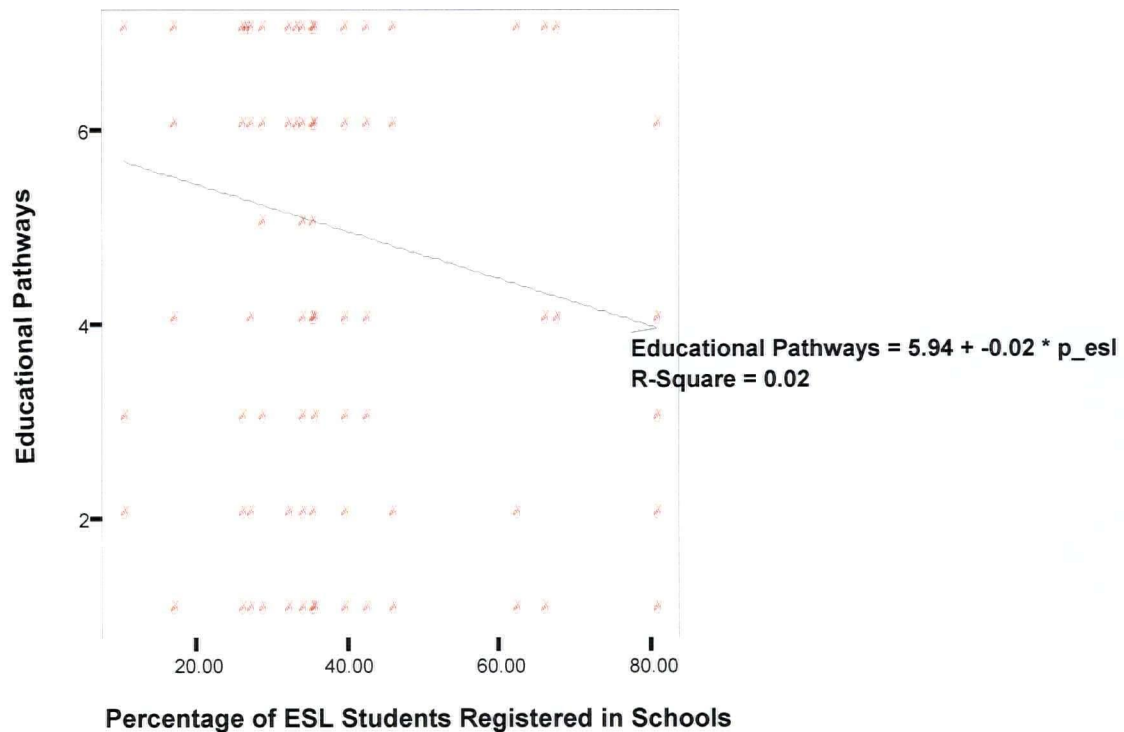


Figure 4.19 Scatterplot for Percentage of ESL Students (Independent Demographic Variable) and Educational Outcomes (Dependent Variable)

One reason which may account for such results was the presence of a dependent variable that had too many outcome categories. Educational pathways had seven predicted categories, thus requiring multi-nominal regression to develop an adequate model. However, there were insufficient predictor variables to generate a reliable and robust model that would have satisfactory predictive power. Even when educational pathways were collapsed into two categories (graduate/dropout), the model generated was still not adequate.

The second limitation was with regards to sample size. While examining the relationships between the various independent variables and educational pathways, it was established that several subgroup profiles had only one or two students representing them. This issue was compounded when statistical tests could not be computed to establish

significant relationships between variables due to the small sample sizes. Thus significant predictors could not be confirmed.

Another important consideration is that the dependent variable (education pathways and outcomes) was measured at a categorical level, but the main assumption of linear regression is a continuous dependent variable. Thus, it was not surprising that the regression model generated did not produce desirable results. As a supplementary analysis to validate the decision to abandon the regression analysis, an attempt was made to generate a classification tree: a different type of predictive model. Algorithms such as CHAID (chi-square automatic and integrated detection) rather than regression were adopted to generate different rules to determine which predictors to use. CHAID is a heuristic, tree-based statistical method that examines the relationships between many categorical predictor variables and a categorical target variable. It creates a tree diagram that identifies the predictor categories that most significantly predicts the desired target variable. CHAID first examines the cross tabulation tables between each of the predictor variables and the outcome and tests for significance using a chi-square independence test. If more than one of these relations is statistically significant, CHAID will select the predictor that is most significant (smallest p value). If a predictor has more than two categories (as region does), CHAID compares them and collapses together those categories that show no differences in the outcome. It does this by successively joining the pair of categories showing the least significant difference. This category merging process stops when all remaining categories differ at the specified testing level. The measurement level of the predictor variable determines which pairs of categories are candidates for merging. For nominal predictors,

any categories can be merged; for ordinal predictors, only contiguous categories can be merged.

This alternative form of modeling was attempted. However, the model developed was not satisfactory. Both educational pathways (hypothesis A) and educational outcomes (hypothesis B) were tested, and the resulting classification tree was unsatisfactory.

4.8 Concluding Remarks

Preliminary investigations of each demographic indicator were performed to obtain descriptive profiles. Subsequently, chi-square and ANOVA analyses were conducted to determine the relationship between each independent demographic variable and the dependent variable of educational outcomes.

No significant differences were observed between the demographic indicators and educational pathways. However, these indicators were assumed to serve as meaningful predictor variables. Generated correlation matrices revealed that only immigration class was significantly related to educational pathways. Similar meta-analyses were also conducted for the school administrative descriptors. However, the results revealed inadequate representation for appropriate statistical analyses. Therefore, relationships between these independent variables and educational outcomes could not be established. However, a correlation matrix was still produced to determine if there were any significant correlations between any of the variables with the dependent variable. Two correlations were significant: the correlation between the percentage of ESL students registered in the school population and the dependent variable and the correlation between two independent variables – school ranking and the percentage of ESL students registered in individual schools. Many relationships were possibly not significant due to insufficient sample sizes. Thus,

dependence was placed on correlation matrices to extract underlying correlations between the independent variables and educational pathways. This first part of the analyses ascertained immigration class and the percentage of ESL students in a school as independent indicators having significant relationships with educational outcomes. These two predictors were investigated in the later analyses to build regression models to identify significant predictors for educational pathways (Hypothesis A).

Analyses to examine the GPA scores for the entire sample were computed. Overall findings indicate that the higher the mean GPA score of the ESL student, the better the chances of achieving successful educational outcomes. The participants' GPA scores were further analysed across their allocated respective language support programs. The highest GPA averages at all levels were associated with students in the Integration program. Univariate ANOVAs were performed to validate whether real differences in academic achievement did occur between students from different language support programs. Specifically, the GPA for Grade 8 non-academic and overall courses differed significantly for participants in the different language support programs. The same observation applied for the academic, non-academic and overall courses for Grade 9 and Grade 10. For Grade 11, the academic and overall course GPAs also differed significantly and lastly, the GPA for Grade 12 academic, non-academic and ESL courses were similarly observed. Thus, participants in the different language support placement programs did perform significantly differently.

Finally, the last section of the results focused on generating predictive regression models from the two identified independent indicators related to educational outcomes. However, the results obtained were less than satisfactory. Even when educational pathways

were collapsed into two categories (graduate/ dropout), the models generated were still not adequate. Several possible reasons and limitations were explored to understand the trends observed.

The following chapter explores the overall findings of the study and proposes some implications for further research.

Chapter V

Discussion

5.1 Introduction

The purpose of this study was to investigate the educational pathways and outcomes of adolescent ethnic and linguistic minority students who attended high schools in the Vancouver School District. In addition, the study was designed to explore potential variables that may affect educational pathways and, further, to investigate potential predictors of dropping out by adolescent ethnic and linguistic minority students. The two major research questions investigated were: 1) what is the relationship between individual and institutional variables and the educational outcomes of adolescent ethnic and linguistic minority students, and 2) what is the relationship between individual and institutional variables and the educational pathways of ethnic and linguistic minority adolescent students. This chapter presents an overview of the study including the background of the study, the problem, findings, hypotheses, limitations of the study, and implications for further research.

5.2 Background of the Study

In North America, the academic achievement and educational outcomes for ethnic and linguistic minority students have been found to be seriously lagging behind national norms (Gunderson, 2004; Ogbu, 1992; Woolfolk, 1998). Research findings from the United States indicate that gross discrepancies exist among the dropout rates for various racial groups (Phillips, Crouse and Ralph, 1998; Sue and Ozakaki, 1990). In particular, the prevalent predicament of the underachievement of both the African American and Hispanic student population, and the resultant consequences, which may include financial, health, social, emotional and behavioural difficulties, have led researchers, policy makers, and

educators to investigate the possible correlates of underachievement. Few Canadian investigations have focused on the educational outcomes of immigrant students (Derwing, DeCorby, Ichikawa & Jamieson, 1999; Gunderson, 2004; Radwanski, 1987; Sefa Dei, 1997; Watt & Roessingh, 2001). Results from these studies indicate that linguistic minority students drop out or disappear from high school at a rate that is more than double that of the national norm.

5.3 Problem

Much of the research on the academic achievement and educational outcomes of ethnic and linguistic minority students in the United States and Canada focuses on *low academic achievement* and *dropout rates*. Most often, failure is the focus of such studies, whose purpose was to explore factors associated with *underachievement*. Little research has been conducted to identify factors related to successful ethnic minority high school graduates (Padilla, 2004). Those that explore success often contrast the performance of Asian Pacific students with the academic performance and graduation rates of African Americans, Native Americans, and Mexican Americans (Olneck, 2004). Almost no research exists detailing the educational pathways ESL learners take and the length of time they need to graduate from high school. This study was designed to explore these issues.

5.4 Methodology

The purpose of this study was to investigate variables that predict the educational outcomes and pathways of adolescent ethnic and linguistic minority students studying in high schools in the Vancouver school district during the period 1996-2003. Archival records were retrieved from the District Reception and Placement Center's ESL database and the Vancouver School Board's database. Data collected included students' GPA scores,

language streaming, occurrences of absenteeism, occurrences of school mobility, gender, country of origin, immigration class upon entry to Canada, number of schools attended, socio-economic class, gender, percent of ESL student population in the schools attended by the participants, number of years of ESL support, and school ranking. The resulting sample consisted of 184 students.

Based on initial findings, an educational outcomes model was developed. This model includes the seven pathways that the participants in this study followed. These pathways are: (1) student permanently dropped out; (2) student stayed in mainstream high school for five years, did not acquire sufficient course credits to graduate, and subsequently did not register for any additional courses that could have been taken at adult learning centers in the Vancouver School District during the time frame of this investigation (seven years); (3) student dropped out in mainstream high school, registered for courses at an ADL center, and by the end of this study had still not managed to acquire sufficient course credits to graduate; (4) student took courses for five years at a mainstream high school, did not acquire sufficient course credits to graduate, subsequently attended an ADL center, and by the end of this study had still not managed to acquire sufficient courses to graduate; (5) student dropped out of mainstream high school, subsequently took courses at an ADL center, and graduated within the seven-year period of this study; (6) student took courses at a mainstream high school for five years, did not acquire sufficient course credits to graduate, subsequently attended ADL, and graduated; and (7) student graduated from mainstream high school. Based on a review of related research findings, educational pathways were hierarchically ranked from one to seven with a score of one the worst possible outcome (permanent dropout) and seven representing main stream high school graduation.

The analyses of data were conducted in three stages using SPSS, version 12.0.1. The first stage included conducting frequency distributions, cross tabulations and exploratory normality checks to verify the variables and distributions. The second stage consisted of performing non-parametric tests (chi-squares) and analyses of variance to determine if any significant relationships existed between the various independent demographic, school administrative descriptors and academic indicators with the dependent variable, educational pathways and outcomes. The third stage of the analysis sought to answer the two research questions by using regression techniques.

5.5 Findings and Discussion

The educational pathways and outcomes model was able to distinguish not only the graduation and dropout rates but also was able to differentiate the two pathways one can take to acquire a high school diploma: by attending mainstream high schools and/or adult learning centers. Furthermore, the model was able to distinguish permanent dropouts from temporary dropouts. Results from this model indicate that the percentage of students who graduated from high school, regardless of the pathway followed and the length of time taken to achieve a high school diploma, equalled 64.1%. Seventy students (38.1 %) were not able to acquire their high school diploma within the five year time frame provided associated with high school graduation.

Findings from this study lend support to previous suppositions that LEP adolescents who have not been exposed to the English language prior to being immersed in English language schools are disadvantaged on the grounds that they may lose two to three years of time to complete high school course requirements (Collier, 1987). Interestingly, the findings also show that students at all levels of English language proficiency needed the extra time to

complete their high school courses. Students from all three language streams (Reception, Transition, and Integration) were found taking courses at ADL centers. Of the seventy students who were not able to graduate within five years, 9.8% did not take any additional high school courses at ADL in the two years after leaving school. At the end of the seven-year period of this investigation, 7.1% were found at ADL centers *still* taking high school courses, indicating that some students require more than seven years to complete their high school courses to qualify for a high school diploma.

Forty-four participants (23.9%) from this cohort received their high school diploma by taking courses at ADL centers. Twenty six students (14.1%) were considered as permanent dropouts. These students were classified as permanent dropouts because although they continued to reside in the Vancouver district, they did not register for courses at any of the high schools or ADL centers in the school district during the period of this investigation. This dropout rate is not consistent with previously reviewed Canadian investigations of adolescent ethnic and linguistic minority students (Gunderson, 2004; Radwanski, 1987; Statistics Canada, 1993; Watt & Roessingh, 2001). Possible explanations for the discrepancy in the dropout rate may be a result of the refinement in the terminology of dropout in the educational pathways and outcomes model. Furthermore, more than 75% of the students in this cohort were from Asia Pacific countries. Both Zhang (1997) and Gibson (1987) observe that for Asians, education is seen as a pragmatic means to an eventual economic payoff; thus, education is of great importance. This view of education and the potential for gaining cultural and economic capital may explain the resilience of these students. It is also important to note that 57.8% of the students in the present study were from families who had entered Canada under the "entrepreneurial" immigration category. These families are in a

socio-economic group that is at the highest end of the immigration spectrum. Their financial status may have a relationship with educational opportunity that does not exist in lower socio-economic groups.

5.6 Hypotheses

The first hypothesis proposed that country of origin was associated with educational outcomes. Four countries contributed the highest number of students in this cohort: China, Taiwan, Hong Kong, and the Philippines. Almost equal percentages of high school graduates were from Taiwan (69.2%) and Hong Kong (68.1%), followed by 56.3% of graduates from China. This was not the case with the participants from the Philippines, where equal numbers (47.1%) dropped out and graduated from high school. Although not generalizable, two possible explanations may exist for this group's results. One, the data from the demographic information obtained indicates that the Filipino participants belonged to both the caretaker immigration class and low SES group. Generally, the children of caretakers working in British Columbia will most likely have been separated from their parent (mother) for at least two years. Although the Canadian Caregiver Immigration program permits caregivers to sponsor some members of their family, they can only do so after they have received permanent resident status. To receive permanent resident status, one needs to have lived in Canada for at least two years (New Solutions Canada, 2004). Thus, the Filipino students most likely had been separated from their mother for at least two years. Second, a role reversal occurs when females leave their families to work abroad. The woman generally ends up being the primary source of family income and decision making (Huang, Yeoh, & Asis, 2003). While the money that the caregivers send back to the Philippines may be much more in value in the Philippines, in Canada, these workers'

monthly wages range from \$870 to \$1009. In other words, these families live under difficult circumstances. The Filipino students from the caretaker class are thus not only dealing with possible language and cultural adjustments, but also have to cope with issues of identity, social integration, emotional trauma, and financial concerns. These issues may lead the Filipino adolescent to fall in either category - dropouts or graduates. The immediacy of leaving school to supplement the family's earning may be more important than the long term benefits acquired by an education or, they may view education as a necessary path to success and thus continue on at school regardless of the hardships they face. In his profile of Filipino students, Gunderson (2001) writes that this ethnic community highly values education. Although the sample size was small for this group of participants, and thus the results cannot be generalized, students in the caretaker immigration class could be seen as at-risk students. Further investigation on the resilient students' availability of cultural capital may provide educational establishments clues on how to meet the needs of those Filipino students most likely to drop out of high school.

The second educational outcomes hypothesis states that there is no difference between gender and educational outcomes. The results of both the Chi square test (Chi-Square = 11.67, $p > .05$) and the corrected one-way ANOVA model (F score = 1.058, $p > .05$) indicated that gender was not significantly related to educational outcomes. Based on these findings, it appears that for this sample, gender has no effect in either dropping out or graduating from high school. These results are not consistent with the literature, which indicate that not only do males drop out in higher numbers than females (McCarthy, 2002), but also they tend to drop out twice as often as females (Curley, Griffin, Sawyer, & Savitsky, 1971). Zhang (1997) writes that for students from the Asia Pacific region,

education is culturally valued as a means to success. If such is the case, then regardless of gender, students from Asia Pacific will strive equally for educational success.

Socio-economic status was investigated to determine whether there was a significant relationship between it and educational outcomes. Due to an inadequate sample number in several of the pathway categories (*educational pathways 3, 4, and 5*), a meaningful Chi-square could not be produced. However, results from the ANOVA ($F = .123, p > .05$) indicated that no meaningful relationship could be established since the means of each of the groups (low, medium and high) were similar. Published research strongly supports the notion that that SES is associated with dropping out of school (Bryk & Thum, 1989; Ekstrom, Goertz, Pollack, and Rock, 1987; Rumberger, 1983, 1985; Rumberger and Larson, 1998b). Steinberg, Blinde and Chan (1984) found that SES was a powerful predictor of dropping out. Interestingly, a study conducted by Bachman et al (1971) found that SES was not a significant factor in predicting dropouts and completers at the high school level but that SES was an important factor in predicting college attendance. The results for SES from the present study do not lend support to the research in this area. Two possible explanations may exist for this difference; one, the operationalization of the SES variable may have been unreliable and second, the country of origin and thus the cultural model of the majority of the students in the sample. As family income was not available on the Vancouver School Board's database, for the purposes of this study, using Census Canada data, SES was operationalized to include the median family income and the value of the dwelling in the area that the participant resided. However, using Census data can be problematic for the correspondence of the data to the individual participant may not reflect the true situation. It could be, for example, that a participant from a high SES background may live in a low SES

neighbourhood, or vice versa. If such is the case, the reliability of the data is questionable. On the other hand, for this particular group of students (Asian Pacific), SES may simply not have been a factor in their educational endeavours, since almost equal numbers of students from the low SES and high SES group graduated from main stream high school. A similar trend appears for high school graduation from adult learning centers. Again, the cultural values of the Asian Pacific students with regard to education and economic success and their investment towards this goal may provide explanations for these results.

The third educational outcomes hypothesis states that there is a relationship between immigration class and educational outcomes. The results of a bivariate correlation matrix indicated that immigration class was significantly correlated with educational outcomes ($r = -.16, p < 0.05$). These findings first, indicate that differentiating and refining the definition of the general term 'immigrant' to include the four categories of entrepreneur, family, refugee and caretaker immigration classes included in this study, may make it possible, with larger samples, to find between and within group differences for the educational outcomes of various immigrant groups.

Additionally, this finding puts into question Ogbu's (1974) typology of minority groups. To explain the variation in the school performance of various ethnic and linguistic groups in the United States, Ogbu (1974) using a cultural discontinuity approach, hypothesized that socio-political and historical experiences are influencing factors for the differences in academic achievement. Thus, his model classifies ethnic and linguistic minority students into two broad groups; voluntary and involuntary minorities, where voluntary minorities are those who immigrated to the United States voluntarily to better their life opportunities, while involuntary or caste-like minorities are those who entered the

United States through slavery, colonialization and conquest. For Ogbu, these distinctions in the experiences of the two types of minority groups provides the impetus for academic performance: students from voluntary minority groups supposedly experience cultural and linguistic difficulties initially however, they eventually overcome these difficulties and succeed in performing well academically. Yet, the way these students deal with their difficulties may be different. On the other hand, students from involuntary minority groups tend to take an oppositional stance to the majority population and resist successful educational performance on the grounds that it equates them to the majority population. With the exception of the participants who entered Canada as refugees, the sample in this study could be considered as belonging to the voluntary minority classification, indicating that the participants would, regardless of their difficulties they encounter, perform well academically. The findings from this study partially support Ogbu's (1974) secondary cultural ecological theory of school performance since the data suggests that students in this sample, mostly adolescents from Asia Pacific families who voluntarily immigrated to Canada, graduated at higher rates than those observed by other Canadian researchers whose samples were not ethnically classified (Gunderson, 2001; Watt & Roessingh, 2001) and additionally, regardless of the hardships encountered, many participants demonstrated, a great amount of resilience – attending high school for seven or more years requires not only a lot of incentive but also a high degree of investment to future goals (Norton Peirce, 1995). Yet, this study found between-group differences for the various immigration classes indicating that Ogbu's concept of voluntary minority groups as a broad indicator to explain the differential in academic performance has limitations in its ability to explain the variance in the educational outcomes of voluntary minority immigrant groups. Perhaps, a

combination of both Ogbu's (1974) concept of voluntary minority groups' socio-historical and cultural experiences, together with Norton's (1995) concept of investment may provide a better explanation for the disparities found in the academic performance of various ethnic and linguistic immigrant minority groups.

The relationship between absenteeism and educational outcomes was investigated. Results from the ANOVA ($F = 1.580$, $p > .05$) indicated that there was no significant difference in the rate of absenteeism and the seven educational pathways. Thus, absenteeism was found not to have an effect on both the educational outcomes and the educational pathways of this sample. However, results from a cross tabulation indicate that as the participants progressed to the higher grade levels, so did the mean number of absences increase with the lowest number (3.90) occurring in their first year of high school (Grade 8) and highest (mean 20.8) occurring at Grade 11 possibly indicating disengagement. A possible explanation for this disengagement may be that the course work at Grade 11 begins to become more difficult as students start to prepare for the provincial exams at this grade. ESL students with inadequate language skills may have trouble coping with the content and language skills required to be successful resulting in the participants' cutting classes as an avoidance technique. Participants who followed pathways 1, 2, 3, (permanent dropouts, non completers, and temporary dropouts), all exhibited higher mean absences (34.3, 30.7, and 63 respectively) than their counterparts, that is, the graduates (2, 15, and 18 respectively). These descriptive findings are in keeping with the research literature. Both Bachman, Green and Wirtanen (1971) and Whelage and Rutter (1986) found that high absenteeism rates are associated with leaving school early.

School mobility was next investigated for its relationship to educational outcomes. Although an inadequate number of participants in the various sub-groups limited rigorous statistical testing, results from the cross-tabulation demonstrate some interesting findings. Most of the participants (77.2%) in this study attended two schools or less with 20.1% attending three and a very small percentage (4%) attending four schools. Interestingly, almost equal percentages of participants who either dropped out permanently or graduated attended one school. The pathways where students did not graduate had the highest school mobility rates.

Following Gunderson's (2004) findings of ESL students in the Vancouver School District, the variable "percentage of ESL students registered in a school" was investigated for its relationship to educational pathways and outcomes. Similar to Gunderson's work, it was also hypothesized that school ranking would be significantly related to the percentage of ESL students registered in a school. Results suggested that the participants in this sample attended schools with various rankings from low to high, and that graduates and permanent dropouts came from any one of these schools. Graduates, both from mainstream high schools and ADL centers were found across all schools, regardless of their school ranking. There has been much debate about the importance attached to school ranking in British Columbia. Various scholars and educators (Gaskell & Vogel, 2000) have argued against its use based on methodological difficulties and the potential misinterpretation of the ranking by parents. Due to a lack of a large enough sample, this study was not only unable to find any relationship between school ranking and educational outcomes but also could not substantiate Gunderson's (2004) findings.

The relationship between the number of years a participant received ESL support and educational outcomes was investigated. Results indicated that students received from zero to five years of language support, with the majority receiving two to three years. This finding is consistent with the literature (Gunderson, 2004). The participants who graduated from pathway 6 and 7 received ESL support from one to five years with most of the participants receiving between two and three years of support, while the highest percentage of participants who dropped out permanently from the school system had received one year of language support. This figure is not surprising, for the number of students decreased at each grade level for this pathway (*educational pathway 1*). Students found at ADL centers had received up to four years of language support, possibly indicating that the time these participants spent taking ESL language support took away time for taking core subjects. Students who received one to three years of support were more likely to achieve desirable outcomes than those who received more years of language support. Although some students may need more than three years of ESL support, the results from this study imply that two to three years of ESL support is optimal for successful educational outcomes. These findings support previous research (Gunderson, 2004).

The next issue explored was the relationship between GPA and educational outcomes. The GPA for four examinable subjects were investigated: English, Mathematics, Social Studies and Science. The minimum GPA found was 0.51 (Standing Granted) with the maximum at 3.92 (high B+). These results suggest that the participants in this study had a wide range of abilities in the four subjects. The mean was found at 2.48 (s.d. = 0.750), indicating the majority of the students scored between C+ and B. Gunderson's (2004) study of 5,000 Canadian-born students' academic achievement found that these students received

slightly better grades than a C average in English, Mathematics, Social Studies and Science. His findings indicate that the participants in this present study outperformed Canadian-born students. These results are also consistent with Gunderson's (2004) study of ESL students' academic achievement in the Vancouver School District. Furthermore, the findings from the educational pathways and outcomes model demonstrate some trends for GPA. Permanent and temporary dropouts had the lowest mean GPA score, while those who graduated from high schools and ADL centers achieved an overall GPA score of 2.91 (high B) and 2.57 (s.d. = 0.481). One can therefore surmise that GPA is related to educational outcomes.

The initial language support placement in the three programs (Reception, Transition, and Integration) was investigated for its relationship to educational outcomes. The majority of the students (63%) were enrolled in the Transition program, followed by 28% in the Reception program and the lowest number of participants (9%) was found to be proficient enough in English to be placed in the Integration program.

Students in the Reception program had a mean score of 4.02 (s.d. = 2.22) on the educational outcomes model, indicating a tendency towards pathway 4. In other words, the students with the least amount of language proficiency were most likely not to achieve successful educational outcomes. With a mean of 5.46 (s.d. = 2.30), students enrolled in the Transition program had a tendency to follow pathway 5 or 6. Students in the Integration program scored a slightly higher mean of 5.65 indicating a tendency towards pathway 6. These findings imply that successful educational outcomes are dependent on language proficiency.

However, the results show that newly arrived 13 year old adolescent students with beginning English language proficiency (Reception program) graduated at a lower rate than

those in the Transition and Integration programs. Findings indicate that 44% of the participants in the Reception program acquired high school diplomas. Participants registered in the Transition and Integration programs fared much better than those in the Reception program. The graduation rate for students in the Transition program equalled 74% while the students in the Integration had the highest graduation rate of 76.5%. Findings also showed that the highest percentage of permanent dropouts (20%) and temporary dropouts (16%) were from the Reception program.

Additionally, the effects of language streaming (language proficiency) on academic achievement (GPA) were investigated. ANOVA revealed that the GPA scores for non-academic and overall courses for Grade 8 differed significantly for all the three levels of English proficiency. Similar results were obtained for academic, non-academic and overall courses for Grades 9 and 10. The academic and overall course GPAs also differed significantly for Grade 11 and the GPAs for Grade 12 academic and ESL courses was similarly observed. These findings clearly indicate that language proficiency is associated with both academic achievement and educational outcomes.

Nearly all of the demographic variables were not significantly related to educational outcomes. These findings are probably related to the small sample size. However, it was hypothesized that the examined variables could serve as meaningful predictor variables. Thus, the third stage of analysis consisted of producing bivariate correlation matrices for both sets of variables in order to determine which of these independent variables would qualify as a significant predictor. Only two variables, immigration class (demographic variable) and the percentage of ESL students registered (school administrative measurement) resulted in significant correlations with the educational outcomes.

Unfortunately, the correlations observed, although significant, were not strong in magnitude, resulting in relatively weak linear, quadratic, and cubic regression models. These results were likely due to the presence of a dependent variable that had too many outcome categories. Another limitation was the sample size.

5.7 Implications

The results of this study contribute to the body of knowledge regarding adolescent ethnic and linguistic minority students' educational pathways and outcomes in Canada. There is a vast amount of dropout research that emanates from the United States. Furthermore, because of the demographic composition in the United States and the concern for the educational outcomes of Hispanic and African American students, a large number of these studies focus on students from these backgrounds. Comparisons of the findings can be made; however, it is important to remember that the lived experiences of the various ethnic and linguistic minority groups in the United States may be different from those who live in Canada. It is hoped that the results of this study will provide educators, researchers and policy makers with some Canadian-based research literature and findings.

Much of the research on ethnic and linguistic minority students focuses on their academic underachievement. Few studies have investigated the characteristics of ESL students who are academically successful. The educational pathways and outcomes model and the time frame allocated to this investigation was able to differentiate between the various types of graduates, dropouts, and non-completers. Researchers may find the results from this model useful in identifying the characteristics of both high school graduates and non-graduates.

This researcher did not start out with the intention of investigating ESL students in ADL centers. However, the data clearly indicated that a sizeable number of participants were registered at adult learning centers trying to acquire core high school course credits required for a high school diploma. It seems clear that the findings show that adolescent ESL students need more time to complete their high school courses. At the present time, students who turn 19 before June 30 of any given year are directed to an adult learning centre in Vancouver for their continuing education (C. L. Eddy, personal communication, May 9, 2005). While this may have held some value in the past, and recognizing that any institution must have a cut-off date at some point, the findings from this study suggest it is time to raise questions about the relevance of Ministry of Education age-related stipulations within a vastly changed educational environment. This issue is not so much a question of financial resources as it is about the appropriateness of learning environments for students who do not have the levels of maturity to deal with independent learning situations and who need a more nurturing learning environment, such as that which can be provided by a secondary school, this may be particularly important for students who do not have English as their first language and are struggling with a multiplicity of language acquisition and cultural integration issues simultaneously. These are aspects of schooling beyond the purview of many learners. Here, two questions need to be addressed. One, what accommodations need to be made to enable these learners to have appropriate levels of opportunities to begin to meet their potential? Two, what are the 'best practices' environments to support the development of these potentials? These questions must be raised and debated within a larger societal context, which also involves the British Columbia Ministry of Education.

The descriptive findings demonstrate clearly that language proficiency is related to both academic achievement and educational outcomes. In particular, the results indicate that students who were identified as beginning English students (Reception students) at the start of their high school career in Canada are disadvantaged in the mainstream high school system. Participants in the Reception program had both the highest permanent dropout rate (20%) and the lowest high school graduation rate (44%). Furthermore, of all the participants that attended adult learning centers, the highest percentage to attend ADL centers were students from the Reception program. Of the 27 students from this language support program who attended adult learning centers, 44.4% had still not acquired sufficient course credits to graduate at the seven year mark of their high school career. Although one could argue that these students are catching up on course credits, there is still a fundamental problem that needs to be addressed. Why are students from the Reception program dropping out of school permanently or dropping out of mainstream high schools only to attend ADL centres? What is it that ADL centers provide that mainstream high schools do not? Is it possible that mainstream high schools are not providing sufficient language support? In a recent newspaper report, O'Brien (2005) reports the findings of a research study conducted by researchers at the Simon Fraser University in Vancouver. The findings from this study indicate that from among all the provinces in Canada, British Columbia ranks last in its delivery of immigrant language services. Furthermore, results also indicate that ESL students are withdrawn from ESL support programs once they reach a rudimentary level of English. A possible explanation may be that although ESL funding is provided by the BCMOE for ESL support, school administrators have the flexibility of channelling these resources for other projects within the school district (C.L. Eddy, personal communication,

June 18, 2003). Whether ESL students are receiving sufficient English language support in order to successfully complete their high school courses is questionable.

Additionally, the disturbing observations made by these researchers put into play a host of ideological questions. If one truly believes that immigration benefits both the host country and the immigrant, in a democratic society, equitable educational opportunities would be provided. If this is not so, it puts into question a set of issues that need to be investigated. For example, does the present British Columbia government resent using tax dollars to provide special education for non-native English language learners? Are there problems with the education system itself not only from a funding perspective but also from a lack of flexibility? Are ESL learners not valued for their potential to contribute to the country? Does it serve Canada's best interest not to provide adequate and well programmed language learning opportunities and support to encourage immigrants to succeed? These questions are just a few of the ideological issues that surface at the political level of the education system in British Columbia. The findings from this study indicate that further investigation is needed to determine both the amount of ESL support provided by the schools and the type of ESL instruction provided to these students.

In addition, are the findings of various researchers as reported by Rumberger (2001), which indicate that mainstream high school diplomas hold more cultural capital than those acquired from adult learning centers, in particular, GEDs. These results bring to mind the following questions; what opportunities are raised or lowered for ESL learners because of this differentiation, even though, they themselves, have sought to achieve their highest levels? What are the implications for our ESL youth when we permit their entry to British Columbia and then deny them equal access to opportunities to become productive citizens

within our economy? Are we short changing them, ourselves, our economy, and our future?

The information gained from this model may provide educators, researchers, and policy makers to make more informed decisions about the type of institutional services that ESL students may require.

5.8 Limitations

This study has investigated and identified some of the possible individual, school administrative and academic indicators that are associated with high school completion and non-completion, but did not attempt to deal with ESL adolescent students' personal reasons for leaving school prematurely. The inevitable constraint of time and cost has meant a loss of interviewing students for their perspective. However, this study could be seen as a precursor to further investigations into the reasons ESL drop out of school.

The sample used for this study was drawn from the Vancouver School District. The administration, distribution of financial resources, and the educational needs of the population residing within a school district dictate how financial resources are used. Thus, the findings of this study can only be generalized to the population of students within this school district.

This study included the variable, socio-economic status, and used Census Canada data to obtain family median income and the value of the dwellings in the participants' postal code area. In order to obtain both these figures, each participant's residential postal code was needed. Although this method of obtaining SES figures is legitimate, the figures collected by Census Canada are averages within a specified residential area. Thus, it may be possible that the information collected was not specific enough to each of the participants in this study.

This study investigated one cohort of 184 adolescent ethnic and linguistic minority students. Thus, it is possible that the obtained results were a chance occurrence. Ideally, the investigation should be repeated with a larger number of participants and, if possible, with different cohorts. Statistically, the sample size was large enough; however, for some of the sub-groups investigated, the sample size was too small, thus limiting the external validity.

5.9 Future Research

The variable, SES, was operationalized based on the availability and the type of information available in Census data. However, the accuracy of the information obtained is questionable. Since Canadian immigration categories are based on numerous indicators including socio-economic and educational indicators, a replication of this study using both the Census data and immigration categories to indicate SES may provide better accuracy of results.

The majority of the students in this study arrived in Canada from the Asia Pacific region. Thus, the results from this study are generalizable only to this particular sample. Future studies may consider a more varied sample to provide a better reflection of the student population in the school district.

Data for 184 students were examined, however in many instances there was an inadequate representation of the sample. Designers of future studies should consider using larger samples with the educational pathways and outcomes model.

The time frame used for this study was seven years (1996-2003). However, at the end of this investigation there were still some students taking courses at adult learning centers. Increasing the duration of investigation may provide for researchers a possibility to

examine the relationship between language proficiency at the time of secondary school entrance and the length of time taken to graduate from high school.

The educational pathways and outcomes model differentiates several of the pathways that the participants followed. None of the participants in this study dropped out of adult learning centers. However, this may be particular to the sample under investigation. Researchers may consider refining the model to include an additional pathway that will identify students who drop out of adult learning centers.

The allocated time frame for achieving a high school diploma has been set at five years. However, many of the participants in this sample stayed in school for more than five years, indicating that ‘something’ is driving these at-risk students to succeed. A comparative study in the area of investment (Norton, 1995) and resilience may provide a further insight into the reasons for ESL students’ successful outcomes.

The variable, immigration class, was found to be significantly related to educational outcomes. However, the number of participants was inadequate to measure possible difference for those who arrived as children of caretakers. Nonetheless, the descriptive results for this group of participants, although not generalizable, indicate that almost fifty percent did not graduate from high school. Since newly arrived immigrant children of caretakers have emotional, financial, language, and cultural adjustments that may affect their educational outcomes, future research with this group of students may provide an insight in how to better the chances for educational success.

5.10 Conclusion

This study investigated the educational pathways and outcomes of 184 limited English proficient students in the Vancouver School District. Participants in this sample

followed seven pathways to either successful or unsuccessful educational outcomes. The high school graduation rate for these participants was found to be 64.1%, of which 40.2% graduated from mainstream high schools, while 23.9% graduated from adult learning centers. This study conclusively determined that some LEP students need more than five years to graduate from high school. Additionally, the dropout rate was determined to be 14.1%, which is 42.7% lower than the national average.

Several individual, school administrative, and academic variables were investigated for their relationship to educational outcomes and predictive models were attempted. The findings indicate that immigration class and the percentage of English as second language registered in each of participants schools were significantly related to educational outcomes. Furthermore, significant group differences were found between language proficiency (language streaming) and various Grade Point Averages (GPA). Educational pathways and outcomes could not be successfully predicted from any of the independent variables.

Although limited, findings of the present study have practical and theoretical significance for researchers and policy makers. The bottom-line appears to be that the whole notion of ESL support should be re-examined, especially as it relates to the amount of time immigrant students need to succeed in high school.

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Appendix A

Normality Check and Descriptive Statistics for the Main Dependent Variable (Educational Outcomes)

Table A1 **Case Processing Summary**

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Educational Outcomes	184	100.0%	0	.0%	184	100.0%

Table A2 **Descriptive Statistics and Normality Exploration**

Educational Outcomes	Mean	4.99	.169
	95% Confidence Interval for Mean	4.66	
	Lower Bound	5.32	
	Upper Bound		
	5% Trimmed Mean	5.10	
	Median	6.00	
	Variance	5.257	
	Std. Deviation	2.293	
	Minimum	1	
	Maximum	7	
	Range	6	
	Interquartile Range	4	
	Skewness	-.721	.179
	Kurtosis	-1.124	.356

Figure A1 Distribution of Educational Outcomes with Superimposed Normal Curve

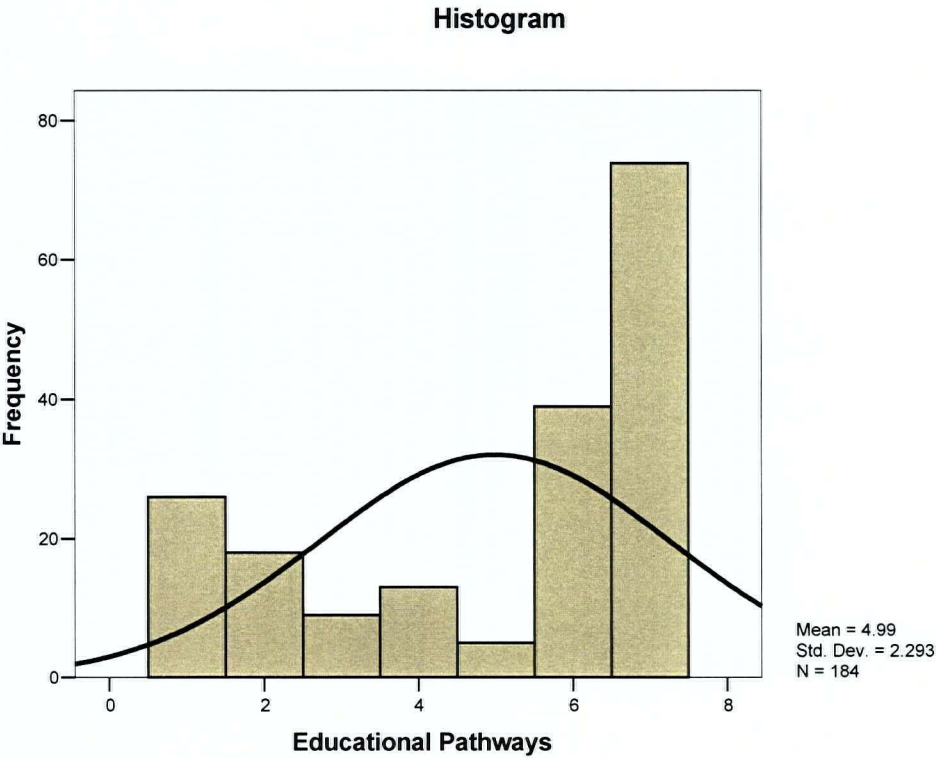
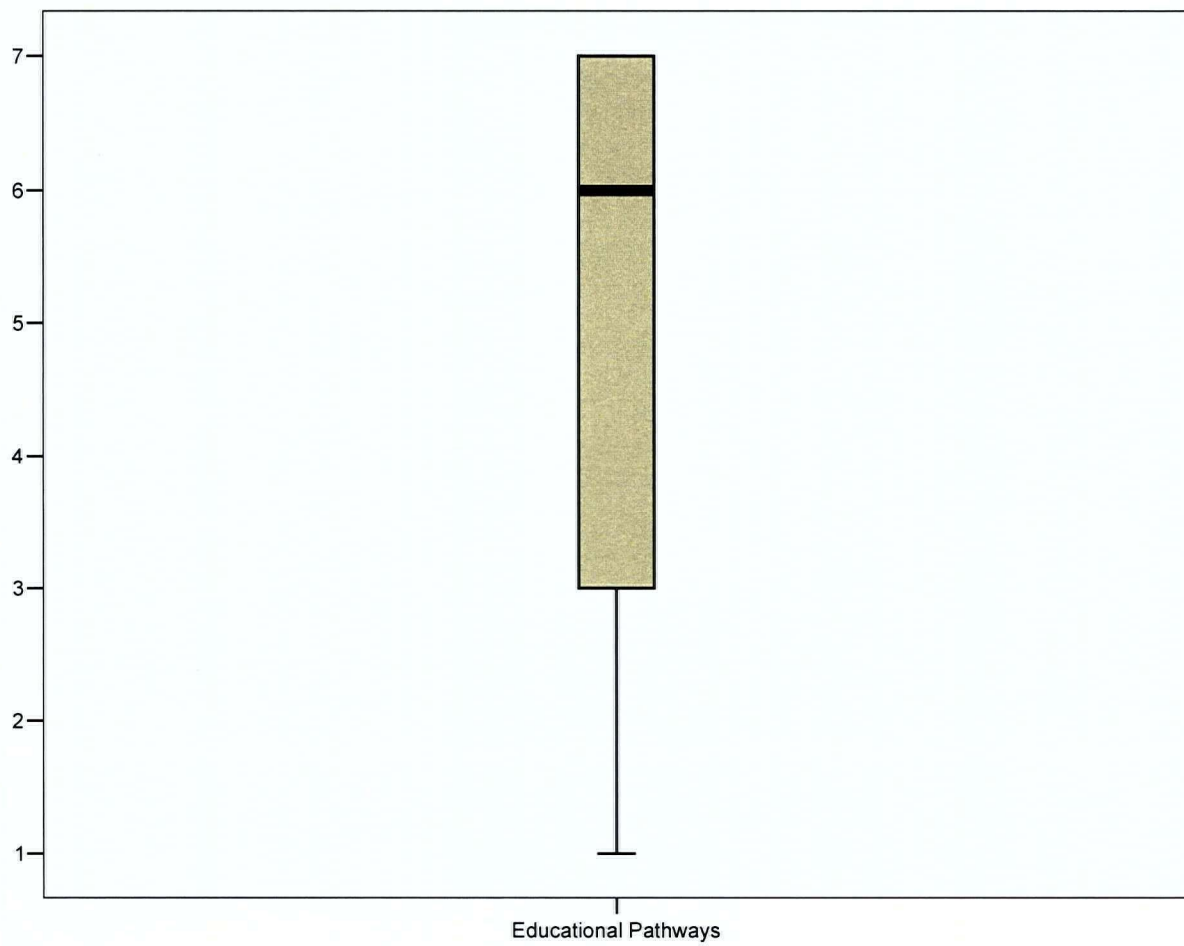


Figure A2 Educational Pathways Stem-and-Leaf Plot

Frequency	Stem &	Leaf
26.00	1 .	00000000000000
.00	1 .	
18.00	2 .	000000000
.00	2 .	
9.00	3 .	0000
.00	3 .	
13.00	4 .	000000
.00	4 .	
5.00	5 .	00
.00	5 .	
39.00	6 .	000000000000000000
.00	6 .	
74.00	7 .	000

Stem width: 1
Each leaf: 2 case(s)



Appendix B

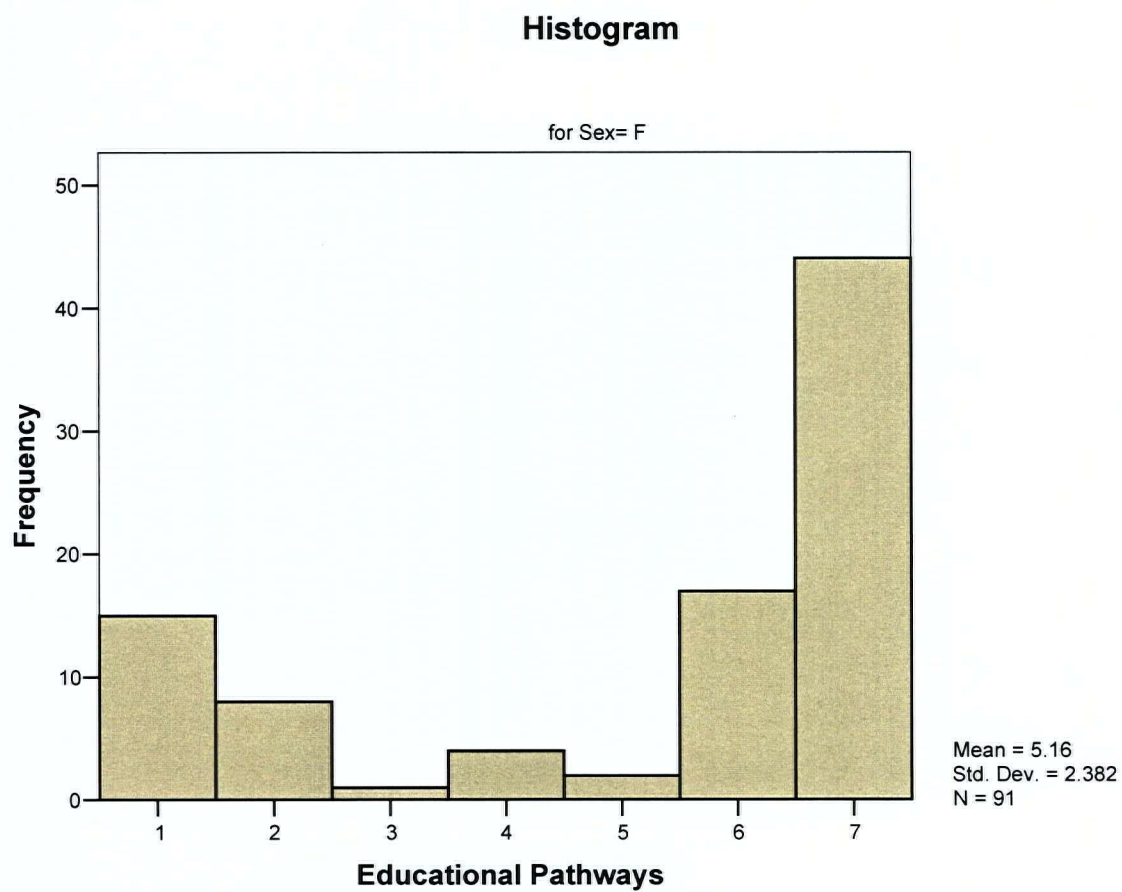
Normality Check and Descriptive Statistics for the Main Dependent Variable (Educational Outcomes) Across Gender Groups

Table B1

Descriptives

Educational Outcomes	Gender				
	F	Mean		5.16	.250
		95% Confidence Interval for Mean	Lower Bound	4.67	
			Upper Bound	5.66	
		5% Trimmed Mean		5.29	
		Median		6.00	
		Variance		5.673	
		Std. Deviation		2.382	
		Minimum		1	
		Maximum		7	
		Range		6	
		Interquartile Range		5	
		Skewness		-.901	.253
		Kurtosis		-.942	.500
	M	Mean		4.82	.228
		95% Confidence Interval for Mean	Lower Bound	4.36	
			Upper Bound	5.27	
		5% Trimmed Mean		4.91	
		Median		6.00	
		Variance		4.847	
		Std. Deviation		2.202	
		Minimum		1	
		Maximum		7	
		Range		6	
		Interquartile Range		4	
		Skewness		-.562	.250
		Kurtosis		-1.233	.495

Figure B1 Educational Pathways across the Two Gender Groups



Histogram

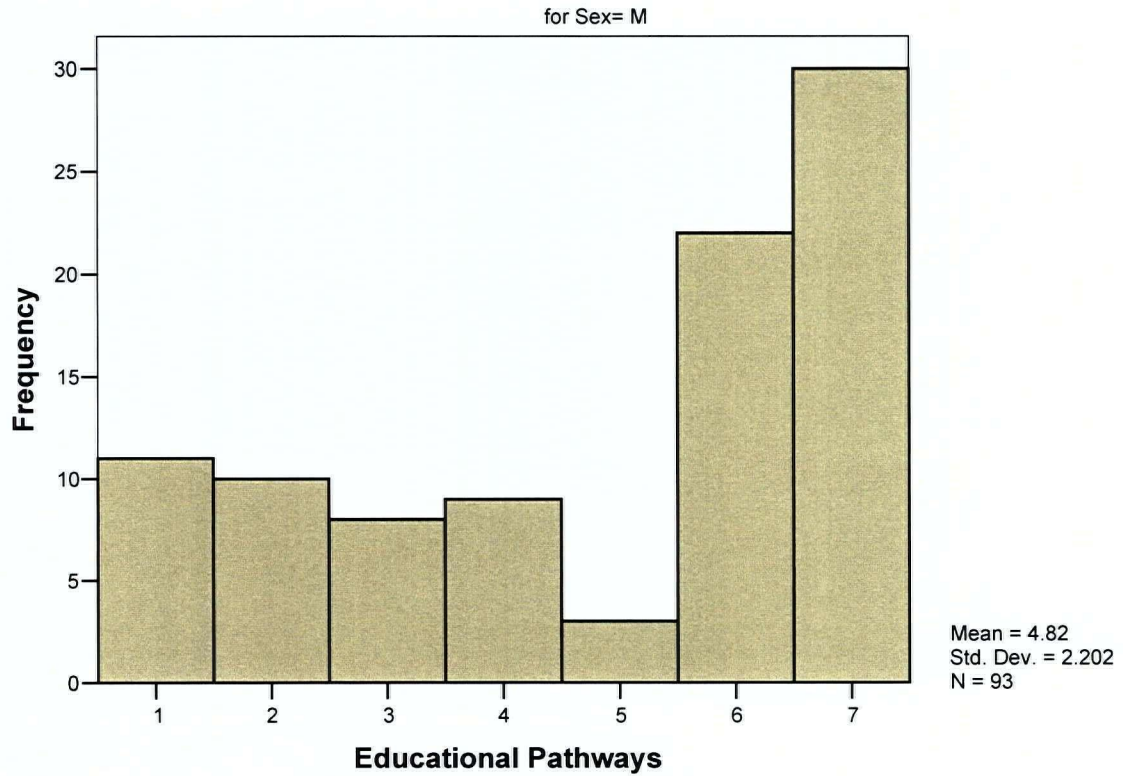


Figure B2 Educational Pathways Stem-and-Leaf Plot for Sex= F

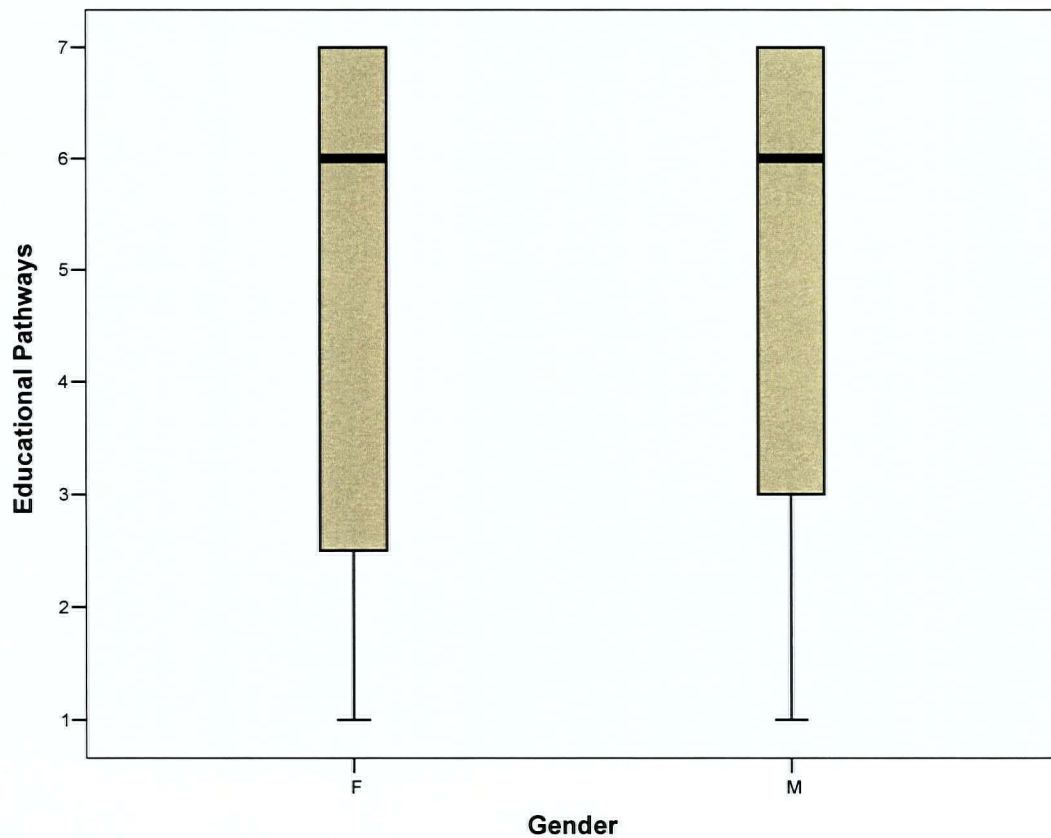
[illegible]

Stem width: 1
Each leaf: 1 case(s)

Figure B3 Educational Pathways Stem-and-Leaf Plot for
Sex= M

Frequency	Stem &	Leaf
11.00	1 .	00000000000
10.00	2 .	0000000000
8.00	3 .	00000000
9.00	4 .	00000000
3.00	5 .	000
22.00	6 .	00000000000000000000
30.00	7 .	000000000000000000000000000000

Stem width: 1
Each leaf: 1 case(s)



Appendix C

Chi-square Test of Independence for Immigration Class and Educational Outcomes ($p < 0.05$)

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.504(a)	18	.305
Likelihood Ratio	21.934	18	.235
Linear-by-Linear Association	4.547	1	.033
N of Valid Cases	177		

a 19 cells (67.9%) have expected count less than 5. The minimum expected count is .25.

Appendix D

Normality Check and Descriptive Statistics for the Main Dependent Variable (Educational Outcomes) Across Immigration Class

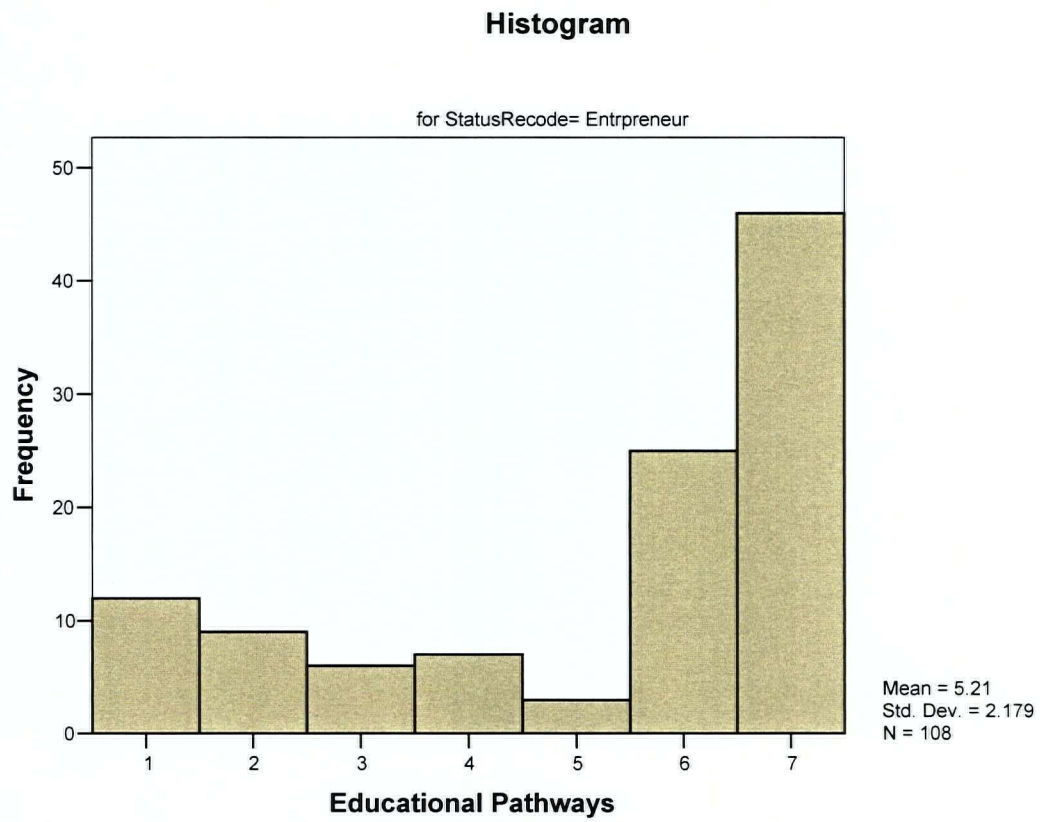
Immigration Class collapsed into 4 Broader Categories

Descriptives

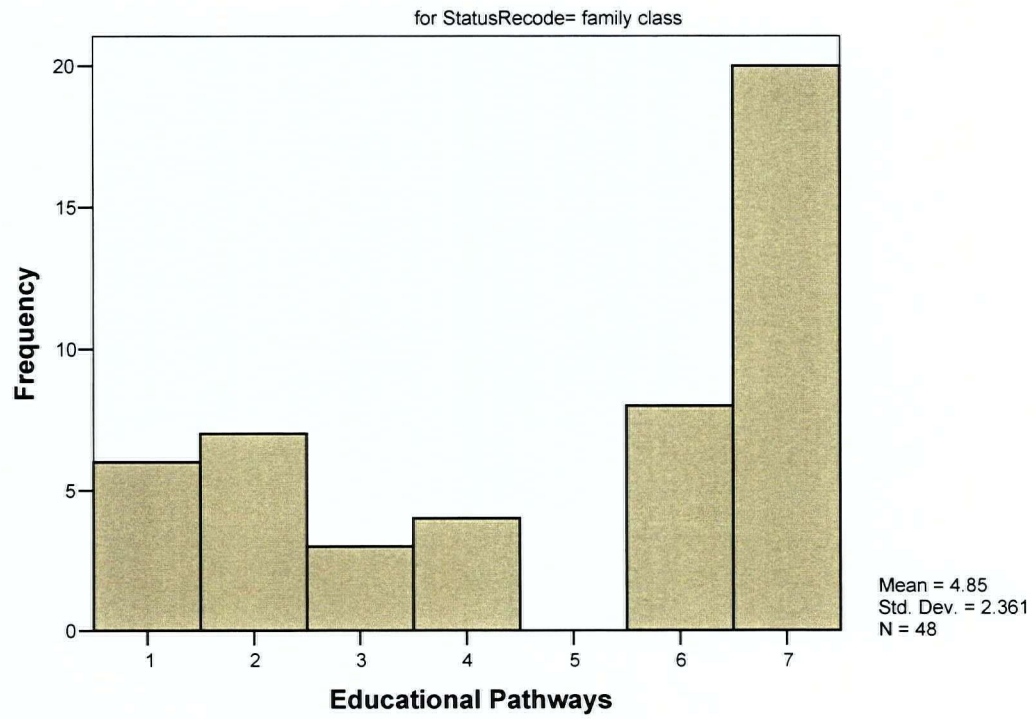
Status Recode Collapse				Statistic	Std. Error
Educational Outcomes Educational Pathways	1 Entrepreneur	Mean		5.21	.210
		95% Confidence Interval for Mean	Lower Bound	4.80	
			Upper Bound	5.63	
		5% Trimmed Mean		5.35	
		Median		6.00	
		Variance		4.749	
		Std. Deviation		2.179	
		Minimum		1	
		Maximum		7	
		Range		6	
		Interquartile Range		4	
		Skewness		-.919	.233
		Kurtosis		-.729	.461
	2 Family class	Mean		4.85	.341
		95% Confidence Interval for Mean	Lower Bound	4.17	
			Upper Bound	5.54	
		5% Trimmed Mean		4.95	
		Median		6.00	
		Variance		5.574	
		Std. Deviation		2.361	
		Minimum		1	
		Maximum		7	
		Range		6	
		Interquartile Range		5	
		Skewness		-.537	.343
		Kurtosis		-1.440	.674
	3 Refugee class	Mean		4.08	.712
		95% Confidence Interval for Mean	Lower Bound	2.52	
			Upper Bound	5.65	
		5% Trimmed Mean		4.09	
		Median		4.50	
		Variance		6.083	

Status Recode Collapse			Statistic	Std. Error
4 Caretaker class	Std. Deviation		2.466	
	Minimum		1	
	Maximum		7	
	Range		6	
	Interquartile Range		5	
	Skewness		-.333	.637
	Kurtosis		-1.702	1.232
	Mean		4.00	.898
	95% Confidence Interval for Mean	Lower Bound	1.93	
		Upper Bound	6.07	
	5% Trimmed Mean		4.00	
	Median		5.00	
	Variance		7.250	
	Std. Deviation		2.693	
	Minimum		1	
	Maximum		7	
	Range		6	
	Interquartile Range		6	
	Skewness		-.148	.717
	Kurtosis		-2.258	1.400

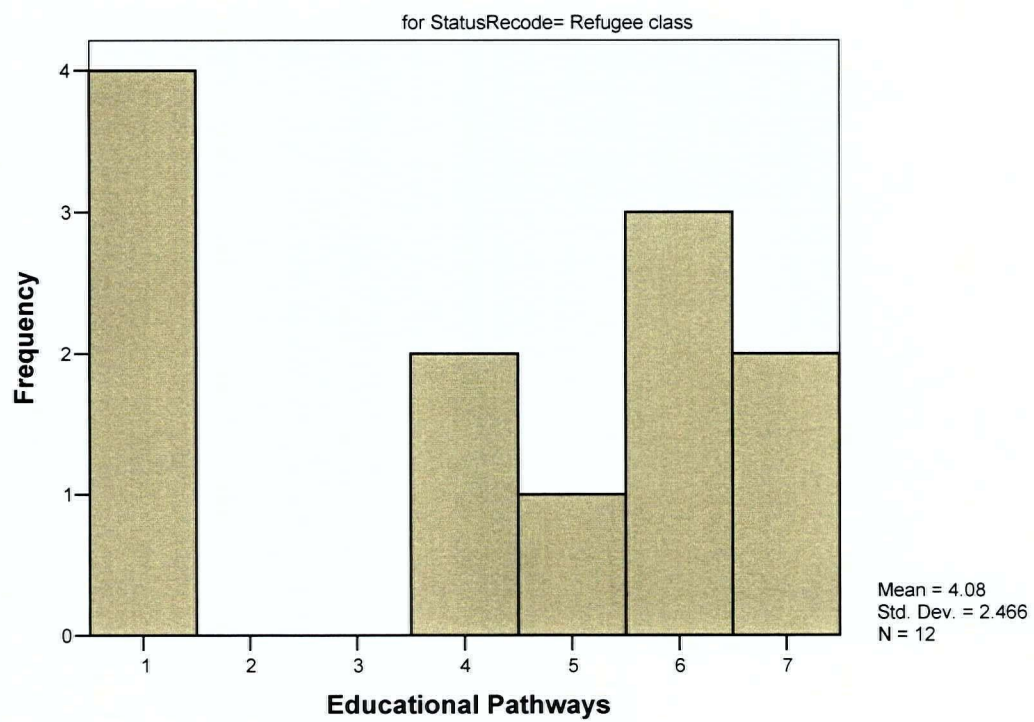
Figure D1 – D4 Educational Pathways across the Four Immigration Classes



Histogram



Histogram



for StatusRecode= Caretaker class

Figure D5 Educational Pathways Stem-and-Leaf Plot for StatusRecode= Entrepreneur

[illegible]

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Stem width:      1
Each leaf:       1 case(s)
```

Figure D6 Educational Pathways Stem-and-Leaf Plot for
StatusRecode= Family class

Frequency	Stem &	Leaf
6.00	1 .	000000
7.00	2 .	0000000
3.00	3 .	000
4.00	4 .	0000
.00	5 .	
8.00	6 .	00000000
20.00	7 .	00000000000000000000

Stem width: 1
Each leaf: 1 case(s)

Figure D7 Educational Pathways Stem-and-Leaf Plot for
StatusRecode= Refugee class

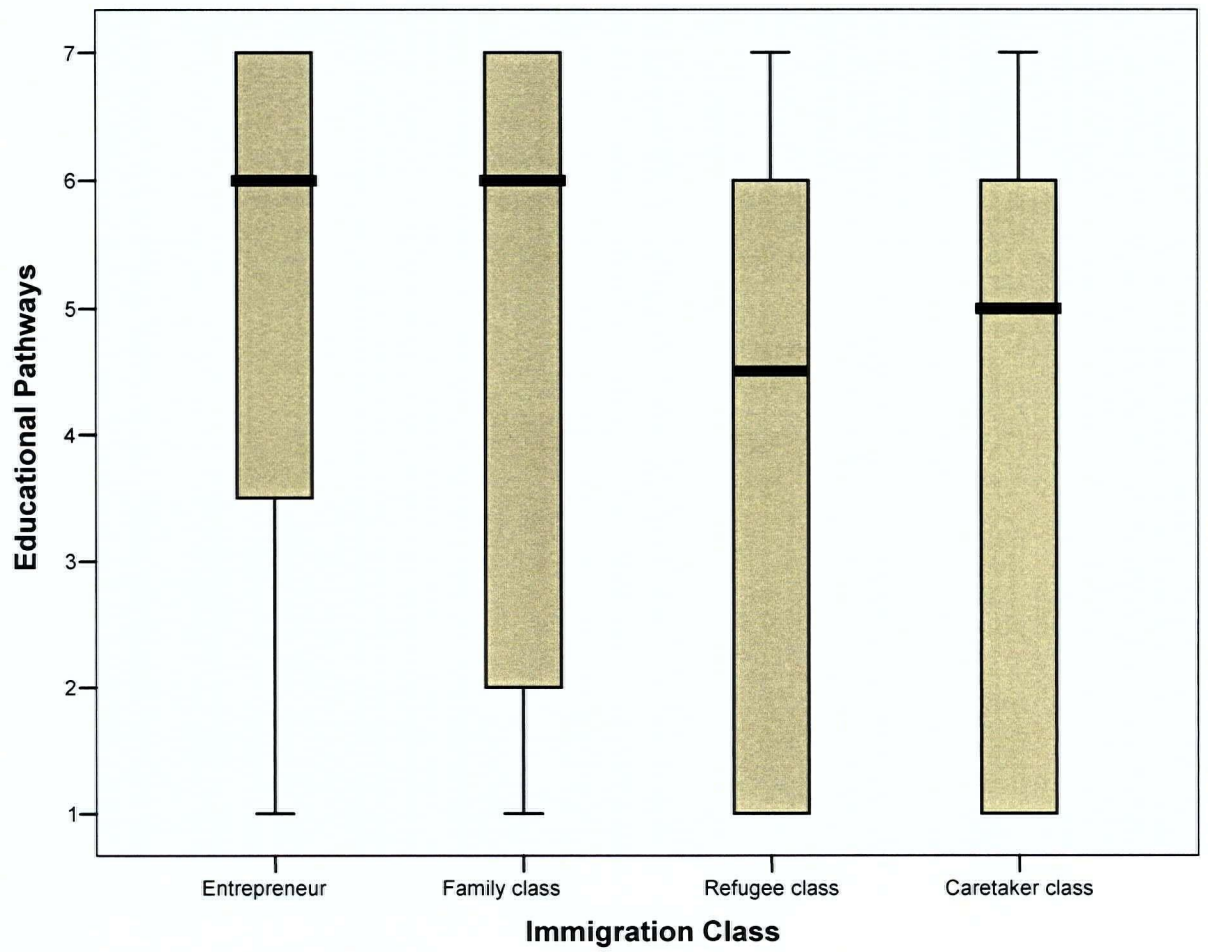
Frequency	Stem &	Leaf
4.00	0 .	1111
.00	0 .	
3.00	0 .	445
5.00	0 .	66677

Stem width: 10
Each leaf: 1 case(s)

Figure D8 Educational Pathways Stem-and-Leaf Plot for
StatusRecode= Caretaker class

Frequency	Stem &	Leaf
3.00	0 .	111
1.00	0 .	2
1.00	0 .	5
4.00	0 .	6677

Stem width: 10
Each leaf: 1 case(s)



Appendix E

Various Tests for Difference Between Immigration Classes for Educational Outcomes

(i) Test one: One-way ANOVA for group differences ($p < .05$)

Educational Outcomes Educational Pathways

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	24.912	3	8.304	1.605	.190
Within Groups	894.998	173	5.173		
Total	919.910	176			

(ii) Test two & three: Additional robust test of equality of means ($p < .05$)

Educational Outcomes Educational Pathways

	Statistic(a)	df1	df2	Sig.
Welch	1.296	3	23.798	.299
Brown-Forsythe	1.349	3	36.960	.273

a Asymptotically F distributed.

(iii) Test four: Non-parametric Kruskal-Wallis H test for equality of means ($p < .05$)

	Status	N	Mean Rank
Educational Outcomes	1 Entrepreneur	108	93.69
	2 Family class	48	88.48
	3 Refugee class	12	65.46
	4 Caretaker class	9	66.89
	Total	177	

Test Statistics(a,b)

	Educational Outcomes
Chi-Square	5.540
Df	3
Asymp. Sig.	.136

a **Kruskal Wallis Test**

b Grouping Variable: Status categories

Appendix F

Chi-square Test of Independence for SES and Educational Outcomes ($p < 0.05$)

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.200(a)	12	.906
Likelihood Ratio	6.503	12	.889
Linear-by-Linear Association	.063	1	.802
N of Valid Cases	182		

a 9 cells (42.9%) have expected count less than 5. The minimum expected count is 1.18.

One-way ANOVA Test for Differences Between the 3 SES Groups for Educational Outcomes

ANOVA

Educational Outcomes Educational Pathways

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.307	2	.654	.123	.884
Within Groups	952.495	179	5.321		
Total	953.802	181			

Appendix G

School Ranking and the Percentage of ESL Students in Each School Controlling for Each Educational Outcome

Table G1 Educational Outcome: 1 Dropout (Permanent Dropout)

		Rank of school													
		12	13	17	20	25	51	66	132	137	144	209	223	229	Total
% of Students taking ESL	16.98	1	0												1
	26.17	0	0	1	0	1	0	0	0	0	0	0	0	0	2
	27.19	0	0	0	0	0	0	2	0	0	1	0	0	1	4
	28.83	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	32.14	0	0	0	1	0	0	0	1	0	0	0	0	1	3
	33.87	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	35.35	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	35.48	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	39.44	0	0	1	0	0	0	2	0	0	0	1	0	0	4
	42.54	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	45.87	0	0	0	0	0	0	0	0	0	0	1	0	0	1
	62.34	0	0	0	0	0	1	0	0	1	0	0	0	0	2
65.99	0	0	0	0	0	0	0	3	0	0	0	0	0	3	
Total		1	1	2	1	2	1	4	4	1	2	2	1	3	25

Table G2 Educational Outcome: 2 Did not graduate, did not attend ADL

		Rank of school						Total
		17	20	66	144	200	223	
% of Students taking ESL								
	10.40	0	0	0	0	0	1	1
	26.17	2	0	0	0	0	0	2
	27.19	0	0	0	0	0	1	1
	32.14	0	0	1	0	0	0	1
	33.87	0	0	0	0	0	1	1
	35.35	4	0	0	0	0	0	4
	39.44	1	0	0	0	1	0	2
	45.87	0	0	0	0	0	1	1
	62.34	0	1	0	0	0	0	1
	80.89	1	0	1	1	0	0	3
Total		8	1	2	1	1	4	17

Table G3 Educational Outcome: 3 Dropout, went to ADL, did not graduate

		Rank of school								Total
		17	25	66	137	144	153	209	229	
% of Students taking ESL	10.40	0	0	0	0	1	0	0	0	1
	26.17	0	0	0	0	0	0	1	0	1
	28.83	0	0	0	0	1	0	0	0	1
	33.87	0	0	1	0	0	0	0	0	1
	35.48	0	0	0	0	0	1	0	0	1
	39.44	0	0	0	1	0	0	0	0	1
	42.54	1	1	0	0	0	0	0	0	2
	80.89	0	0	0	0	0	0	0	1	1
Total		1	1	1	1	2	1	1	1	9

Table G4 Educational Outcome: 4 Did not graduate, went to ADL, did not graduate

		Rank of school							Total
		13	17	20	25	51	66	229	
% of Students taking ESL	16.98	0	1	0	0	0	0	0	1
	27.19	0	0	0	0	1	0	0	1
	33.87	0	0	0	0	0	1	0	1
	35.35	0	0	0	0	2	0	0	2
	35.48	1	0	0	0	0	0	0	1
	39.44	0	0	0	1	0	1	0	2
	42.54	1	0	0	0	0	0	0	1
	65.99	0	0	0	1	0	0	0	1
	67.51	0	0	1	0	0	0	0	1
	80.89	0	0	0	0	0	0	1	1
Total		2	1	1	2	3	2	1	12

Table G5 Educational Outcome: 5 Dropout, went to ADL, graduated

		School Ranking				Total
		17	132	144	223	
% of Students taking ESL	28.83	0	0	1	0	1
	33.87	1	0	0	1	2
	35.35	0	1	0	0	1
Total		1	1	1	1	4

Table G6 Educational Outcomes: 6 Did not graduate, went to ADL, graduated

		Rank of school												
		12	13	17	20	25	51	66	144	153	209	223	229	Total
% of Students taking ESL	16.98	0	0	0	0	0	1	0	0	0	0	0	0	1
	26.17	1	0	0	0	1	1	0	0	0	0	0	0	3
	27.19	0	1	0	0	2	3	0	1	0	1	0	0	8
	28.83	1	0	0	0	0	0	0	1	0	0	1	0	3
	32.14	0	0	0	1	1	0	0	0	0	0	0	0	2
	33.20	0	0	0	0	2	0	0	0	0	0	0	0	2
	33.87	0	0	0	0	0	0	0	0	0	0	1	0	1
	35.35	1	0	1	0	0	1	1	0	0	0	0	0	4
	35.48	0	0	0	0	0	0	0	0	1	0	0	0	1
	39.44	0	0	0	0	1	1	5	0	0	1	0	0	8
	42.54	0	1	0	1	0	0	0	0	0	0	0	0	2
	45.87	0	0	1	0	1	0	0	0	0	0	0	0	2
	80.89	0	0	0	0	0	0	0	0	0	0	0	2	2
	Total	3	2	2	2	8	7	6	2	1	2	2	2	39

Table G7 Educational Outcome: 7 Graduated Mainstream HS

		Rank of School									
		7	12	13	17	20	25	51	66	132	Total
Percent of Students taking ESL	10.40	0	1	0	0	0	0	0	0	0	1
	16.98	0	3	0	0	0	0	1	1	0	5
	26.17	0	0	1	1	2	3	0	0	0	7
	26.55	2	0	0	0	0	0	0	1	0	3
	27.19	0	0	0	0	0	0	3	0	1	4
	28.83	0	0	1	0	0	0	0	0	0	4
	32.14	0	0	1	1	1	0	0	0	0	3
	33.20	0	0	0	0	0	1	0	0	0	1
	33.87	0	0	0	0	0	0	0	1	0	3
	35.35	0	0	0	7	1	0	0	1	0	11
	35.48	0	0	0	0	0	0	1	0	0	5
	39.44	1	0	0	1	0	0	0	5	0	11
	42.54	0	0	1	1	0	0	0	1	0	4
	45.87	0	0	0	0	0	1	0	1	0	5
	62.34	0	0	0	0	0	0	0	0	0	1
	65.99	0	0	0	0	0	0	0	1	3	5
	67.51	0	0	0	0	0	0	1	0	0	1
	Total	3	4	4	11	4	5	6	12	4	74

Table G7 Educational Outcome: 7 Graduated Mainstream HS cont'd

		Rank of School							
		137	144	153	200	209	223	229	Total
Percent of Students taking ESL	10.40	0	0	0	0	0	0	0	1
	16.98	0	0	0	0	0	0	0	5
	26.17	0	0	0	0	0	0	0	7
	26.55	0	0	0	0	0	0	0	3
	27.19	0	0	0	0	0	0	0	4
	28.83	0	2	1	0	0	0	0	4
	32.14	0	0	0	0	0	0	0	3
	33.20	0	0	0	0	0	0	0	1
	33.87	0	0	0	0	1	1	0	3
	35.35	0	0	1	0	0	0	1	11
	35.48	0	0	2	1	0	1	0	5
	39.44	2	0	1	0	1	0	0	11
	42.54	0	0	1	0	0	0	0	4
	45.87	0	0	0	0	3	0	0	5
	62.34	1	0	0	0	0	0	0	1
	65.99	0	1	0	0	0	0	0	5
	67.51	0	0	0	0	0	0	0	1
Total		3	3	6	1	5	2	1	74