Streaming in secondary schools: Effects on student self-efficacy from the perspectives of the students, teachers, administrators, and counsellors.

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Streaming in Secondary Schools: Effects on Student Self-efficacy from the Perspectives of the Students, Teachers, Administrators, and Counsellors

by

Dina Salinitri

A Thesis
Submitted to the Faculty of Graduate Studies and Research through
in Partial Fulfillment of the Requirements for
the Degree of Master of at the
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ABSTRACT

Streaming by ability grouping has been one of the most controversial topics in secondary education. The purpose of this study was to explore the impact of streaming on the self-efficacy of 9th graders at a composite secondary school in Southern Ontario. Based on the statistical analysis of self-efficacy scales, the self-efficacies of students in applied classes were found to be lower than those in academic classes when considering attainment of high grades. Also, the magnitude of the self-efficacy was found to be lower in the applied stream students than in the academic students.

From the analysis of the interviews, it was found that the introduction of series to replace levels of difficulty in the former Ontario government reform did not change the perceptions of teachers, administrators and counsellors on the streaming practices of students and the impact on academics. They perceived the selection process for streaming maintained the status quo. Thus, the stigma and lower self-efficacy of students, whether called general or applied, remains as a mechanism of social segregation.
DEDICATION

I would like to dedicate this thesis to my supportive husband, Rick MacMillan
and to my family, Vince and Geri Salinitri, and my nonno and nonna Palazzolo.
The journey through the Master of Education program has given me insight into the importance of reflection and research in education. One of the most important lessons learned was that the path is filled with the support, mentoring, patience and encouragement of so many people. First, I must thank, Dr. Andrew Allen, my supervisor. His guidance and unfailing support helped me develop the confidence and skills needed to begin my journey as a researcher. Along with Dr. Allen, Dr. Kara Smith was an inspirational role model and mentor. Dr. Pierre Boulos, as my external examiner, has been an inspiration in Science Education.

I would also like to acknowledge the participants of the study especially the administration. They provided insight and experience that enriched my understanding of the relationship and culture of a school community.

On a personal note, I would like to thank my husband, Rick MacMillan, for his love and support and the many dinners he prepared while I worked; my father, Vince Salinitri, my sister, Francine and her husband Dave, and my Grandparents, Giuseppe and Leonarda Palazzolo for constant support, encouragement and love. Without my mom, Geri Salinitri, and her mentorship, this journey would not have been possible. And last but not least, I want to thank my puppy “OSCAR” for making me smile.
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CHAPTER I
INTRODUCTION

Streaming by ability grouping has been one of the most controversial topics in secondary education. There has been extensive research evidence (Kemp & Watkins, 1996; Oakes, 2005) that states that ability grouping is educationally ineffective and socially inequitable, while there is equally contradicting evidence that states ability grouping does not have a strong influence on academic achievement (Ireson & Hallam, 1999; Suknanden, 1998; Ireson, Hallam, & Plewis, 2001).

In Ontario schools, the controversy surrounding the topic of streaming includes: the use of standardized tests to classify students; the implications of socioeconomic class, race, ethnicity and gender; as well as, the inadequate use of the terms “academic” and “applied” streams for arbitrary grouping arrangements. The most common practice in educational streaming results in sorting students using a standard measure of achievement. Students usually remain in these homogenous tracks for all their instruction, with little consideration for their performance in varying disciplines.

According to King (2002), the education reform of 1999 where students were placed in new groupings to address the lack of success of students taking homogenous general level courses resulted in an increase in failure rates of almost 50 percent demonstrating a dramatic influence on attainment. Further, King reported that roughly 65% of applied level students would not have completed 16 credits by the end of Grade 10. Similarly, students who took academic courses were slightly less likely to have completed 16 credits after two years than the old cohort who took advanced courses.
Therefore, King suggested that these patterns demonstrate a decline in graduation rates for all students in the restructured curriculum.

According to the Ministry of Education discussion document Ontario Secondary Schools (1998), the education reforms surfaced in response to four primary concerns: (1) the parents need for more and better information about what students are learning; (2) the students' need for curriculum that is relevant to their future goals and contribution to society; (3) employers expectation of high school graduates that are knowledgeable and have appropriate workplace skills; and (4) universities and colleges that expect graduates to be prepared for the high standards for all students in the system.

Although the intent of this type of streaming to improve student learning and success through the application of the new Ontario curriculum implemented in 1997 appeared clear and concise in the document, the implications of streaming are much more complex and varied. Through a review of the literature, it appears that streaming impacts student success as it relates to ability groups (level of academic achievement) (Curtis, Livingstone, & Smaller, 1992; Hallinan, 2000; Ireson, et. al., 2001; Ansalone, 2003). Overall, it was found that streaming is counterproductive for students in lower academic streams in terms of academic success and self-efficacy. Conversely, others (Zimmer, 2003; Rosenbaum, 2000) found that streaming benefits mainly the higher achieving academic students and teachers with respect to the organization of the classroom and instructional delivery.

According to Antonelli (2004), most studies fail to produce evidence showing streaming as a benefit to the academic performance of lower achieving students. Thus low achieving students become at risk for developing poor classroom behaviour and
study habits. Further it was noted that streaming is a potential cause for reproducing social inequities (Curtis, Livingstone, & Smaller, 1992; Lucas & Berends, 2002) leading to further problems of negative peer socialization. It is important to note that these researchers found streaming in secondary schools produces the possibility for students to be streamed along socioeconomic or racial lines to the detriment of working class students and students from visible minority groups.

Grouping by ability has also been found to have an adverse impact on students’ self-esteem, self-efficacy and on their attitudes toward school and school work (Kulik & Kulik, 1992; Ireson et al., 2001; Oakes, 1985). Oakes (1985) stated that the self-efficacy of low streamed students becomes more negative with time and these students tend to be critical of their ability. On the other-hand, Kulik and Kulik (1992) found that ability grouping tended to raise the self-esteem scores of lower aptitude students and reduce the self-esteem of higher aptitude students. The differences here may arise from the impact of teachers’ attitudes and behaviours in instructional strategy toward ability grouping (Kulik & Kulik, 1992; Ireson et al., 2001; Oakes, 1985). Teachers committed to ability grouping but who teach in mixed ability schools can have an adverse effect on student’s self-efficacy (Barker-Lunn, 1970).

It is important to note that researchers also emphasize the complexity and multidimensionality of self-efficacy (Byrne & Shavelson, 1996; Marsh, 1991). Marsh explored the relationships between the facets of self-efficacy and academic attainment. According to Marsh and Yeung (1997), the general measures of self-efficacy are only weakly correlated with academic attainment while subscales of mathematics and verbal self-efficacy correlate more highly with attainment in these content areas. Marsh (1991)
further argued that students evaluate their academic achievements in relation to those of others (social comparison). In this theoretical framework, students of similar ability (comparing themselves with others of high levels of achievement) will have lower academic self-efficacy than those comparing themselves with others of lower attainment.

There is further research evidence (Marsh, 1991; Marsh & Rowe, 1996) that states that the average level of attainment in school settings (compensatory, academic, vocational) may influence students' self-efficacy, so that those with higher average levels of attainment have lower academic self-efficacy than students of similar ability in schools with lower average attainment. Accordingly, the impact appears to be greatest in highly competitive settings and in highly structured settings in which students follow a fixed curriculum and are normatively assessed in relation to common tasks. Marsh, Chessor, Craven, and Roche (1995) argue that these situations increase the social comparison process that may undermine the self-efficacy. They further indicated that students who participated in programmes for the gifted and talented experienced a decline in academic self-efficacy when compared to a matched comparison group.

Ireson et al., (2001) found that students' self-esteem and general school self-efficacy are higher in schools with moderate levels of setting. Self-esteem was found to be highly co-related to students' general perceptions of themselves in school. Their analysis indicated that the scales measuring academic facets of the self-efficacy were sensitive to grouping arrangements in place for academic subjects, whereas students' general school self-efficacy and self-esteem were influenced by the level of stratification in the schools as a whole. Further, they identified that ability grouping not only
negatively impacts lower attaining students but structured ability grouping may also have a negative effect on more able students’ self-efficacy.

It is unclear, however, if streaming is the reason for decline in student success under the new reform or if it is the way that “series” (Ontario Ministry of Education, 1998) are organized and supported that poses obstacles to student success. More research is needed to address issues of streaming or streaming that negatively impact on student success. Thus studying the impact of streaming on student self-efficacy may shed some light on the contributing factors that affect student success in the first year of secondary education. This study seeks to explore these issues.

Purpose of the Study

The purpose of this qualitative study is to explore the impact of streaming on the self-efficacy of students in year 9 classes at a composite secondary school in Southern Ontario. Taken from the perspectives of the students, teachers, counsellors and administrators, a global view of the impact of streaming on the learning environment from the perception of the stakeholders in the school community may shed light on the factors that contribute to student academic performance in the current reform in Ontario schools.

Operational Definitions

Self-efficacy: Bandura (1997) defines the construct as “peoples’ judgments of their capabilities to organize and execute courses of action required to attain designated types of performances. It is concerned with the judgments of what one can do with whatever skills one possesses” (p.391).
Streaming: In the context of this paper streaming is defined as the sorting mechanism used to place students in homogeneous groupings based on ability, interest, and recommendations.

Tracking: Tracking is synonymous with streaming. Tracking is the American term for streaming and it is defined as the placement of students into courses based on their performance in standardized achievement tests and/or IQ tests and in previous courses in the same discipline. At the high school level, many school systems distinguish between college preparatory and vocational tracks.

Research Questions:

1. How does streaming students according to the 1999 Ontario curriculum reform impact on the self-efficacy of the year 9 students?
   a. How do teachers, administrators, and counsellors perceive the differences in the current streaming of students from the former?
   b. How have these perceptions impacted on teacher’s instructional strategies?
   c. How have the students responded to the perceptions and instructional strategies of those involved in their experience?
   d. How do the participants perception relate to the student self-efficacy?
CHAPTER II
REVIEW OF LITERATURE

This review of literature brings an historical perspective on streaming practices and their impact of student success and student self-efficacy. It highlights the key researchers in the area of self-efficacy, teacher efficacy, and ability grouping. Further, an understanding of the selection process will tie to the perceptions of the students, teachers, administrators and counsellors.

Context of Streaming in Ontario Secondary Schools

Public education became mandatory in Ontario in 1871 for children between 7 and 14 and increased to the age of 16 by 1919. Compulsory attendance to 16 required a change in the curriculum to meet the needs of widening segments of society.

“Because it was obvious that many children were neither able nor willing to follow the traditional academic program offered at the secondary school level, it became necessary to offer a variety of programs and courses to meet the needs of a vastly increased number. To this end, manual training, domestic science, and other courses were introduced and later, technical and vocation schools were established.” (Brehart, 1984, 11).

Since the early 1930's, the debate about the formal education of adolescents has focused particularly on the transition of elementary school to secondary school and the relevance of the curriculum to students with very different needs, and the extent to which schools and programs should be tailored to academic and vocational outcomes. In the 1950's, the Department of Education directed school boards to plan “local instructional programs for the Intermediate Division” but these were largely ineffective. In 1961, “Program of Study for Secondary Schools”, known as the “Robarts Plan” reorganized secondary education into three programs of equal status: arts and science; business and
commerce; science, technology, and trades. Students were streamed into one of three options: a five-year program leading to university; a four-year program leading to entry into employment at the end of Grade 12, or to the new system of colleges of Applied Arts and Technology; and a two-year program designed for direct employment after age 16 (Love of Learning, 1994).

Educational reform during the 1970's and 1980's had countries, states and provinces mounting commissions, writing reports, holding workshops and developing policies directed at improving the quality of education in their schools (Gidney, 2000; Earl & Sutherland, 2003). Since 1982 and the ROSE Report (Reform of Secondary Education), and the Royal Commission on Learning in 1995, successive governments have focused primarily on secondary education (O'Sullivan, 1999). It was the Royal Commission on Learning that formed the basis for many of the reforms that were announced by the Conservative government and enacted by legislation to set policies designed to achieve significant educational change.

Introduced in 1997 with the Education Quality Improvement Act, the reforms were phased into schools beginning in 1997/1998 with Grade 7 students preparing them for the new high school program in 1999. Streaming in Grade 9 returned with the introduction of the new Ontario Secondary School curriculum with a 4 year program implementation to be in place by 2003. A new funding model removed taxation for education from municipalities and the provincial purview mandated the amount of instructional time in a teacher's day as well as the average class size in districts. The political context accompanying the reform has been anything but smooth. In fact in 1995,
the Minister of Education made a publicly noted private statement about his intention to "invent a crisis" in education (Earl & Sutherland, 2003).

The current courses of study in Ontario secondary schools are divided by series. There are four series of high school courses, "each with a clear purpose, and appropriate content and methods of instruction" (Excellence in Education: High School Reform, 1998, p5). Series 1 courses are the same for all students. These courses are not to be directly related to specific postsecondary goals but are to benefit all students. Series 2 courses or applied courses were intended to prepare students for most college programs, for apprenticeships, and for entry into the work force. These courses should emphasize concrete application of skills and knowledge. Series 3 courses were intended to prepare students for university and some specific college courses. Theses courses should emphasize theory, with some concrete applications. Series 4 courses, transfer courses, are created to allow students to move between Series 2 and Series 3 courses. However students in grades nine and ten are not required to take the transfer courses to change levels. Transfer courses are suggested only.

The previous document OSIS (1988) used the phrase "level of difficulty" to address the course divisions. Before the current 1997 reform, there were three levels, basic, general and advanced. The Basic level courses were developed to emphasize the development of personal skills, social understanding, self-confidence and preparation for direct entry into the world of work. General level courses were designed to emphasize the application of knowledge and focus on appropriate preparation for employment, careers for further education in certain programs in colleges of applied arts and technology and other non-degree granting post-secondary institutions. Advanced level
courses were then designed to emphasize the learning of theoretical principles and their application, focus on the development of academic skills and prepare students for entry to university or to certain programs in colleges of applied arts and technology.

Ability Grouping, Streaming, and Tracking

Although the intent of streaming to improve student learning and success through the application of the new curriculum appeared clear and concise in the document, the implications of streaming are much more complex and varied. As early as the 1920’s ability grouping advantages and disadvantages were identified (Turney, 1931, cited in Slavin, 1990). The advantages were noted as:

1. it permits pupils to make progress commensurate with their abilities
2. it makes possible an adaptation of the technique of instruction to the needs of the group.
3. it reduces failures
4. it helps to maintain interest and incentive, because bright students are not bored by the participation of the dull
5. slower pupils participate more when not eclipsed by those much brighter
6. it makes teaching easier
7. it makes possible individual instruction to small slow groups.

The disadvantages included:

1. slow pupils need the presence of the able pupils to stimulate them and encourage them
2. a stigma is attached to low sections, operating to discourage the pupils in these sections

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3. teachers are unable, or do not have time, to differentiate the work for different levels of ability

4. teachers object to the slower groups. (p. 473).

In the United States, streaming, the separation of students by ability and often curricula, has experienced a long and controversial history dating back to 1867. Its popularity increased during the 1920's relative to the flow of immigrants into the labour force then abandoned until the 1950's when Americans became concerned with the increasing migration of Southern blacks into Northern cities. Today, streaming remains in 80% of secondary schools in American education, especially in racially and economically diverse systems (Ansalone, 2004).

More than 80 years later, the arguments are still consistent with the above that ability grouping discriminates against minority and lower-class students (Braddock, 1990) and that students in the low tracks receive a lower pace and lower quality of instruction than do students in the higher tracks (Gamoran, 1989). Basically, the argument in favour of ability grouping is that it will allow teachers to adapt instruction to the needs of a diverse student body and provide more challenging material to high achievers and more support to low achievers.

Between the 1970's and 1990's, researchers who compared outcomes made by students in different tracks concluded that when controlling for ability, socioeconomic status, and other control variables, achievement accelerated within the top tracked students and was significantly reduced in the lower tracked students (Braddock, 1990; Jones, Erickson & Crowell, 1972; Vanfossen, Jones & Spade, 1987). Further there is some evidence that there are poor behavioural models and low expectations in the low-
track classes as well as instruction by less experienced teachers (Evertson, 1987; Oakes, 1985).

In contrast, Slavin (1990) examined 29 studies of streaming in secondary schools. Fifteen of the studies matched students individually on IQ, composite achievement, and other measures, and then assigned one of each matched pair of students to an ability-grouped class and one to a heterogeneous class. The remaining 14 studies investigated existing schools half of which were streamed and the other half not streamed. Across the 29 studies in Slavin’s research, the effects of ability grouping on student achievement were insignificant. In addition, there were no consistent patterns in terms of the number of ability groups to which students were assigned (max. 3) or with respect to the subject area.

The evidence summarized by Slavin (1990) is consistent with the conclusions of earlier reviews comparing homogeneous and heterogeneous grouping (Kulik & Kulik, 1987), but, contradicts “two kinds of common sense” (Slavin, p. 490). It has concluded that assignment to the low-ability group is not detrimental to student learning and it has no effect on motivations and self esteem of students assigned to low groups. Further, Slavin noted that ability grouping is necessary in secondary schools because students’ numeracy and literacy vary dramatically across a continuum.

In a meta-analysis of 12 studies of within-class ability grouping (Lou, Abrami, Spence, Poulsen, Chambers, & d’Apollonia, 1996) researchers compared the achievement of students in homogeneous ability grouped classes with those in heterogeneous ability grouped classes. They found that students in homogeneous ability groups attained higher achievement than those in heterogeneous ability groups.
However, low-ability students had lower achievement in homogeneous groups than in heterogeneous groups, while middle-ability students attained higher achievement in homogeneous groups. High-ability students were not affected by the homogeneity of the instructional group.

More recently research has acknowledged the impact of streaming on student success as it relates to ability groups (Hallinan, 2000; Ireson, et. al., 2001; Ansalone, 2003). Overall, it was found that streaming is counterproductive for students in lower academic streams. Conversely, others (Zimmer, 2003; Rosenbaum, 2000) found that streaming benefits higher achieving academic students and teachers with respect to the organization of the classroom and instructional delivery.

According to Antonelli (2004), most studies fail to produce evidence showing streaming as a benefit to the academic performance of lower achieving students. Thus low achieving students become at risk for developing poor classroom and study habits. Further it was noted that streaming is a potential cause for reproducing social inequities (Curtis, Livingstone, & Smaller, 1992; Lucas & Berends, 2002) leading to further problems of negative peer socialization. Although not the focus of this study, it is important to note that these researchers found streaming in secondary schools produces the possibility for students to be streamed along socioeconomic or racial lines to the detriment of working class students and students of visible minorities.

LeTendre, Hofer, and Shimizu (2003) in their analysis of the case study databases of the Third International Mathematics and Science Study (TIMSS) made up of interviews with educators, parents, and students in Germany, Japan and the U.S. emerged with a set of dominant themes surrounding issues in curriculum differentiation. German
schools track students from the 4th grade, while Japanese schools don’t track students until the 10th grade and the Americans somewhere in between. The researchers' identified five types of differentiation that fit under streaming: 1) type of school, 2) course of study, 3) streaming, 4) ability grouping, and 5) geographical location.

According to Bracey (2003) creating different “types of schools” is the norm in Germany and Japan with vocational and academic high schools. “Course of study” involves groups of students studying different topics common across the nation. Streaming is more likely in the U.S. involving choosing between, college-preparatory programs and vocationally oriented ones. “Ability grouping” is common in U.S. and not practiced in Japan before 10th grade with differing criteria. “Geographic location” is most pronounced in the U.S. because of the localized system of funding. Japanese students choose their high schools according to college entrance examination scores. Seventy-five percent attend general college-prep curriculum schools, while most of the rest attend schools that prepare them to enter the labour force. In Germany, 30% attend the gymnasium preparing them for college. The realschule provides both academic and practical courses (middle tier) and the hauptshule enrolls the lowest-achieving students. “The cultural norm for the decision point in German schools is that there is a place for everyone in society and that this place can be chosen well in advance” (Bracey, 2003, p. 333).

While Germans seemed confident that the selection mechanisms accurately measured students’ different ability, Japanese parents maintained a more egalitarian ethic than even the Americans. Further, Japanese parents and teachers are concerned that ability grouping would negatively impact on children’s self-image, socialization patterns,
and academic competition (p.333). American parents push comparatively harder to influence their children’s streaming while German and Japanese parents have more faith in the accuracy of the selection mechanisms that schools use for streaming.

In a study of streaming in British schools, Ireson, Hallam, and Plewis (2001) with three levels of setting (streaming), their findings indicated that the scales measuring academic facets of the self-concept were sensitive to grouping arrangements in place for particular academic subjects (English, Mathematics and Science), whereas students’ general school self-concept and self-esteem were influenced by the level of stratification in the schools as a whole. Further, they concluded that English setting (streams) raise the self-concept of lower attaining students and lowers the self-concept of higher attaining students. According to the researchers, moderate levels of regrouping may be beneficial for students’ self-esteem, whereas higher levels of setting may be less advantageous, probably due to competitive climate in structured ability grouping.

Oakes (1985, 2005) in a study of 300 tracked high school English and mathematics classes, found that the curriculum content, instruction quality, and classroom climate varied significantly between different tracks. Accordingly, students in the higher tracks learned critical thinking, problem solving, and creative writing skills while mastering the vocabulary that would raise their college entrance exam scores. Students in the lower tracks, however, focused on rote learning and memorization. They were taught through workbooks, kits, completed worksheets and practiced filling out applications for jobs. Furthermore, Oakes found that teachers in high streams devoted more class time to learning, were more enthusiastic and had higher expectations of the students than those who taught in the lower tracks. Ultimately, Oakes concluded that
students in higher tracks had better classroom opportunities while students placed in average and low track classes do not develop positive attitudes. This coupled with teachers' and peers' attitudes results in perpetuating low self-efficacies. Further, lower track students tend to have lower aspirations and feel discouraged about plans for the future.

**Student Self-Efficacy**

Ability grouping has also been found to have an adverse impact on students’ self-esteem, self-efficacy and on their attitudes towards school and school work (Kulik & Kulik, 1992; Ireson, Hallam, & Plewis, 2001; Oakes, 1985). Oakes found that the self-efficacy of low streamed students becomes more negative with time and these students tend to be critical of their ability. However, Kulik and Kulik (1992) found that ability grouping tended to raise the self-esteem scores of lower aptitude students and reduce the self-esteem of higher aptitude students. The differences here may arise from the impact of teachers’ attitudes and behaviours in instructional strategy toward ability grouping (Kulik & Kulik, 1992; Ireson et al., 2001; Oakes, 1985). Teachers committed to ability grouping but teach in mixed ability schools adversely effect student's self-efficacy (Ireson, et al., 2001).

**Self Efficacy in Adolescent Learning**

Beliefs or personal efficacy is central to the mechanisms of “human agency”. It is the foundation of human motivation, well-being, and accomplishments (Bandura, 2006). According to Bandura, unless people believe they can produce positive results, they have little incentive to act or to persevere in the face of difficulties. Regardless of the motivators, they are rooted in the belief that one has the power to affect changes by one’s
actions. Belief in one’s efficacy is central to self-development adaptation, and change. It impacts on cognitive, motivational, affective and decisional process. Efficacy beliefs are directly related to optimism, goals and aspirations, motivation and perseverance. They shape outcome expectations and determine how environmental opportunities are viewed. They affect the quality of emotional life and vulnerability to stress and depression. Further they determine the choices people make at important decision times.

Education systems were first designed to teach low-level skills in agricultural societies. With industrialization, the educational system was adapted for the needs of industry and manufacturing. To this point occupational pursuits required rote performance. Increasing complexities in technologies, social systems, and the global economy present different realities requiring new competencies from our youth (Bandura, 2006).

Adolescents present a host of new challenges, managing biological, educational, and social role transitions at the same time. As difficult as the physical changes are, the emotional changes involved in an environmental change are equally taxing on personal efficacy such as the transition to high school. Adolescence has been characterized as a period of psychosocial turmoil and discontinuity (Bandura, 2006). Hence, social cognitive theory as defined by Bandura emphasizes personal growth through mastery and other enabling experiences as the more normative development process. Therefore, some of the changes in adolescent functioning may have more to do with how the social systems are structured than with intra-psychic and physical turmoil common to adolescents (Eccles, Midgley, Wigfield, Buchanan, Flanagan, and Iver, 1993).
According to Bandura (2006), there are three main pathways through which
efficacy beliefs link to cognitive development and accomplishment: students’ beliefs in
their efficacy to regulate their learning activities and to master academic subjects;
teachers’ beliefs in the personal efficacy to motivate and promote learning in their
students; and, the faculties’ collective sense of efficacy that their schools can accomplish
significant academic progress (p. 10).

There has been substantial documentation of the positive role of self-efficacy
beliefs in students’ academic interest, motivation, management of academic anxiety and
growth of cognitive competencies (Bandura, 1997, Pajares & Schumk, 2001). With
technology, students can now exercise control over their own learning. This means that
the rapid pace of technological change and growth of knowledge are placing a premium
on capability for self-directed learning.

Metacognitive theories view this as a goal of formal education to provide students
with the intellectual tools of self-believers, as well as self-regulatory capabilities
(Bandura, 2006). Zimmerman (1990) stated that students must develop skills to regulate
the motivational, emotional, and social determinants of their intellectual functioning
along with the cognitive aspects. Strong self-regulators gain knowledge, skills and
intrinsic interests in intellectual matter while weak self-regulators achieve limited self-
development. The stronger the students’ perceived efficacy to control their own learning,
the higher their aspirations and accomplishments (Zimmerman & Bandura, 1994).

In this era of informational overload, Joo, Bong and Choi (2000) found that
students with high self-efficacy for self-regulated learning make the best use of internet-
based instruction. However, the task of creating productive learning environments still
resists on the talents and efficacies of teachers (Bandura, 2006). According to Bandura, teachers’ beliefs in their instructional efficacy affects how they structure activities in their classrooms which affects students’ academic development and judgment of their intellectual capabilities. Teachers with high self-efficacy create mastery experiences while those with self-doubts construct classroom environments that undermine students’ judgements of their abilities and their cognitive development (Woolfolk, Rosoff, & Hoy, 1990; Ashton & Webb, 1996). Ashton and Webb showed that students learn more from teachers who feel able to manage educational demands.

Moving from elementary school to secondary school poses a difficult educational transition involving a major environment change that stresses personal efficacy. Adolescents move from a personalized school environment of familiarity to an impersonal, departmentalized one with curricular streaming into university, college or workplace paths. Here they must re-establish their sense of efficacy, social connectedness, and status within a heterogeneous network of new peers and multiple teachers in rotating class sessions (Bandura, 2006). Eccles and Midgley (1989) found that during this phase, adolescents sense a loss of personal control, become less confident, are more sensitive to social evaluation, and suffer a decline in self-motivation. Although these may be initial adverse effects they are neither universal nor enduring for every student. But for those that are affected, research needs to examine the impact external factors have on the efficacy of students for academic success.

It is important to note that researchers also emphasize the complexity and multi-dimensionality of self-efficacy (Byrne & Shavelson, 1996; Marsh, 1990). Marsh explored the relationships between the facets of self-efficacy and academic attainment.
According to Marsh and Yeung (1997), the general measures of self-efficacy are only weakly correlated with academic attainment while subscales of mathematics and verbal self-efficacy correlate more highly with achievement in these subject areas. Marsh (1991) further argued that students evaluate their academic achievements in relation to those of others (social comparison). In this theoretical framework, students of similar ability comparing themselves with others of high levels of achievement will have lower academic self-efficacy than those comparing themselves with others of lower attainment.

There is research evidence (Marsh 1991; Marsh & Rowe, 1996) that states that the average level of attainment in school settings (compensatory, academic, vocational) may influence students' self-efficacy, so that those with higher average levels of attainment have lower academic self-efficacy than students of similar ability in schools with lower average attainment. Accordingly, the impact appears to be greatest in highly competitive settings and in highly structured settings in which students follow a fixed curriculum and are normatively assessed in relation to common tasks. Marsh, Chessor, Craven, and Roche (1995) argue that these situations increase the social comparison process that may undermine student self-efficacy. They further indicated that students who participated in programmes for the gifted and talented experienced a decline in academic self-efficacy when compared to a matched comparison group.

Teacher Efficacy and its Effect on Streamed Students

Research suggests that a higher sense of efficacy for teaching is related to positive learning and instructional outcomes (Ross, Cousins, Gadalla, & Hannay, 1999; Muijs & Reynolds, 2001; Hoy & Davis, 2005) as well other student outcomes including motivation and students own self-efficacy (Ross, Hogaboam-Gray & Hannay, 2001; Hoy
Ross (1998) found that teacher self-efficacy was generally higher in settings with high-ability, orderly students, with teachers working in their area of expertise and within a collaborative school culture. Therefore, context and requirements of the task at hand directly affect teacher efficacy.

Hoy and Davis (in Parajes & Urdan, 2006) in an extensive literature review, concluded that teachers’ efficacy beliefs affect the effort they invest, their level of aspiration, and the goals they set. Teachers with higher efficacy judgments are more open to new ideas, more willing to vary their teaching strategies including inquiry and small group work. This greater sense of efficacy is also associated with being less critical of students who make errors, working longer with struggling students and have less controlling beliefs about discipline. Thus a strong sense of efficacy can support higher motivation, greater effort, persistence, and resilience (2006).

According to Hoy and Davis (2006) teaching is an “ego-involved activity” (p.131). They must draw on their intellectual and emotional resources to connect students with subject matter. They must learn to identify, cope with, and modify their own behaviour and instruction based on the students’ reactions and needs, and adapt to the needs of a diverse student population. Thus teachers with a strong sense of efficacy have more resources to share with their students, including more planning time, more resources to cope with emotional experiences, and more creativity with regard to designing instruction, management and discipline.

Katz (1999) found that high expectations for academic achievement along with a caring and supportive presence were the essential components of a productive teacher-student relationship, especially for low self-efficacy students. Garner (1995) in a study
investigating the perceptions of 12 “disruptive” adolescent male students found that the classroom teacher was the most important factor in students’ attitudes toward school. Students with behaviour disorders emphasized the importance of teacher-student relationships associated with trust and affection (Habel, Bloom, Ray, & Bacon, 1999).

Selection Process for Streaming Students

Over 20 years of research on the impact of high school streaming on curriculum opportunities and student outcomes has provided inconsistencies about how high schools decide how to place students in their streams (Oakes, Gamoran, & Page, 1992, Oakes and Guiton, 1995, Page & Valli, 1990, Gamoran & Berends, 1987). According to Oakes and Guiton (1995), research has drawn on a number of competing theories to explain how students from various backgrounds are placed in their streams. These theories differ in their dependence on technical/structural factors, cultural norms, or more political, personal, and behavioural characteristics of the students. Most commonly streaming decisions represent schools’ efforts to use education structures and technologies to match students and courses in ways that further societal goals and accommodate individual differences.

Oakes and Guiton (1995) contend that human capital theories suggest streaming serves primarily to prepare students for productive work. To emulate the workforce, schools offer differentiated opportunities that students invest in as they prepare for the various sectors of the workforce. With these investments students increase their human capital (knowledge and skills) relative to how much they can attain (income, status, etc.) as adults. Although all educational options do not provide equal returns, human capital theories suggest that the competition for various options is fair. Accordingly, the primary
mechanisms for allocating students to curriculum opportunities are objective assessments of relevant abilities, effort and interest (1995). Simply then, attainment of high-status employment opportunities result from an open contest based on educational merit. Since the 70’s human capital theorists believed that students who are able, ambitious and hard working used schooling as an avenue for social and economic mobility (Oakes & Guiton, 1995).

According to Oakes and Guiton (1995) structurally oriented theorists argued that the streaming matches represent schools’ central role in maintaining a society that is segregated by race and social class. The differentiated curriculum opportunities should mirror the differentiated occupational opportunities in society at-large. Bowles & Gintis (1976) argued that streaming decisions maintain the occupational and social advantages of children from high-status families, while matching lower status students with curricula that prepare or certify them for occupations much like those of their parents. Others (Apple, 1982; Carnoy & Levin, 1985) have contended that schools’ contribution to social and economic sorting is full of contradictions and tensions that reflect both the democratic impulses and structural inequities found in society. Thus, human capital theorists and structural theories are supported when counsellors’ judgments are influenced by social class, students’ dress, speech patterns and behaviour (Oakes and Guiton, 1995).

Structural properties of streaming tend to fix and sustain placements, even if students’ needs, interests or abilities should change. Rosenbaum (1986) theorized that the structure of streaming is analogous to a tournament where access to the high-status curriculum is maintained only by a series of student wins (demonstrations of ability,
effort, and achievement) and a loss (demonstration of less ability, effort, and achievement) removes the student from consideration for these curriculum opportunities.

In the 1990’s, with the emphasis on preparing every student for college in the US, streaming in its modern form means grouping students by ability within subjects. In each subject, students are assigned to advanced, regular, or basic courses depending on their past performance. In Ontario, the students are assigned to academic, applied and essential subjects. For the most part, educators support the practice of streaming in its current form. Teachers, in particular, find that streaming facilitates instruction by making it easier to develop lessons to a homogeneous ability level. Parents of high-performing students also favor streaming because research shows that students assigned to high-ability groups make greater gains in achievement.

The Survey of High School Curricular Options conducted for the National Center for Education Statistics (NCES, 1993), sampled 912 secondary schools to obtain information about curriculum differentiation. The data revealed that 14 percent of 10th graders took math courses in groups in which students' abilities differed widely; the same was true for 28 percent of 10th graders in English. Further in math, 27 percent of students were enrolled in courses designed for students of higher abilities, 47 percent took courses for students of average abilities, and 16 percent took courses for students of lower abilities. In English, 23 percent of students were enrolled in courses designed for students of higher abilities, 39 percent took courses for students of average abilities, and 9 percent took courses for students of lower abilities.

According to Oakes (2005) the sorting practices and differentiated opportunities promote gaps in outcomes including achievement, graduation rates, and college entrance.
Standardized tests are not the only means by which students are sorted into streams. Most districts report that counsellor and teacher recommendations as supplementary or in place of tests. Counsellors may place up to 500 students each year, while teachers may have over 150 to recommend (p.12). Counsellors and teachers don’t apply a rigorous assessment tool and often use language, dress, and behaviour as indicators. Unconsciously, Oakes explains, counsellors subjectively judge academic aptitude and potential futures by social interactions.

The third criterion used in streaming is the student or parent choice. Oakes noted that these are informed choices by the school guidance process and by the other indicators of what should be the appropriate placement. Students and parents are influenced by the counsellors and teacher’s recommendations. The fourth assumption stems from the pedagogy. Teaching is easier in a homogeneous group with meeting individual needs and managing classroom instruction in general (2005).

Oakes and Guiton (1995) concluded that “high school tracking decisions result from the synergy of three powerful factors: differentiated, hierarchical curriculum structures; school cultures alternatively committed to common schooling and accommodating differences; and political actions by individuals within those structures and cultures aimed at influencing the distribution of advantage” (p.30).

**The Destreaming (Detracking) Movement**

Hallinan (2004) described the detracking movement of the 1990’s in the U.S. Organizations including the National Governors Association, the National Education Association, the National Council of Teachers of English, and the California Department of Education were in favour of detracking. In some districts, the courts mandated
detracking reforms to desegregate the schools. In 1994 the San Jose Unified School District agreed to a consent decree that mandated detracking in grades K–9 and limited tracking in grades 10–12. While many teachers favoured detracking, a large number of parents, politicians, and other teachers resisted. As a result, detracking was never institutionalized as school practice.

Stakeholders believe that detracking requires reallocating teachers and administrators, modifying the curriculum, and providing professional training. Schools may find these changes both costly and logistically impossible. Further, parents of high-ability students tend to prefer rigorous, homogeneous classes, while other parents are not convinced that destreaming classes will benefit their children (Hallinan, 2004).

In Ontario, the Transition Years (Policy/Program Memorandum No.115, 1994), *Program Policy for Elementary and Secondary Education*, laid the foundation for destreaming the Grade 9 curriculum program from academic, general, and basic levels of difficulty. Under this policy all Grade 9 students followed the same program and were granted a blanket eight credits towards their secondary school diploma upon completion. With little research on the impact of destreaming on student academic success and efficacy, a new reform abolished the destreaming efforts within 5 years of institutionalization.

Langford (1996), in a qualitative doctoral thesis, explored teachers’ perceptions of destreaming in Ontario schools. Participating teachers felt that the initiative was implemented without adequate preparation and involvement of the teachers in the planning process. The negative perceptions found at the beginning of the year persisted and/or increased by the last interview at the end of the year. According to Langford,
most teachers felt that some form of ability grouping was necessary within larger
destreamed classes. They believed that students were being grouped according to
achievement levels resulting in a “hidden” form of streaming (1996).

Current Streaming Practices and Academic Performance

In a four phase study of the Double Cohort commissioned by the Ontario Ministry
of Education following the reorganization of Program Implementation in Ontario
Secondary Schools, Dr. King and his colleagues set out to study two primary goals. The
first goal was to develop projections of the application rates to Ontario colleges and
universities for post-secondary enrolments in the double cohort year 2003-04 and in the
following years. The second goal was to examine the implementation of the
“Reorganized Program in Ontario Secondary Schools” and determine its impact on
student progress to graduation (King, 2005, p.1).

These Queen’s University researchers led by Dr. King (2004) found that after five
years in school:

1. 30% of students did not graduate, compared to 22% in 1995,
2. 33% of students went on to university, compared to 27% in 2000,
3. 19% went on to college, compared to 21% in 2000, and
4. 18% graduated to go directly on to work, compared to 29% in 2000.

In terms of standardized testing, there is a wide gap in the results on the Math EQAO:

1. 27% of Applied students, and 68% of Academic students achieved level 3 in
   Grade 9 math.
2. In 2004, 57% of the Applied students, and 92% of Academic students passed the grade 10 literacy test. Credit accumulation was found to be one of the most damaging changes in the reform particularly for students in the applied classes.

- only 42% of Applied students obtained all their credits in the two years normally allotted to complete grades 9 and 10 (students need to accumulate a total of 16 credits in grades 9 and 10 to allow them to achieve the required 30 credits by the end of grade 12)
- Of the students taking Essentials courses (also called Locally Developed Courses – intended for students with some special needs), only 29% had the requisite 16 credits on completion of grade 10 (Kidder, 2005, 1).

Further, there was a decline in the proportion of students taking academic courses from 69.8% in 1999 to 62.7% in 2004 reciprocally increasing the proportion of students in Applied compulsory courses where failure rates are higher. Enrolments in Grade 11 and 12 workplace-preparation courses were especially low; many schools did not even make workplace-preparation courses available in English, Mathematics and Science (King, 2004).

King (2004) recommended a systematic review of the structure and content of the current streamed program. Addressing the perspective of schools' capability to provide necessary programs of courses designed to meet their post-secondary goals is emergent. Workplace courses in Grades 11 and 12 should flow from the grade 9 and 10 Essentials

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1 To graduate in Ontario, students must pass the Ontario Secondary School Literacy Test (OSSLT). If they fail the test, they must pass a grade 12 Literacy Course initially if they didn’t pass the literacy test before graduation they did not receive a diploma!
courses meeting the needs and abilities of the students taking them. Further, Business
course offerings should also reflect needs and abilities of the students. The People in
Education Group suggest that some of the findings are a result of hastily implemented
reforms to the secondary curriculum (2006).

From the above studies, it is clear that the current streaming practices are
ineffective and have shown to negatively impact on student self-efficacy. Further studies
on the factors that interplay on student personal and academic outcomes are needed to get
to the root of the problem that continues to haunt policy makers, administrators,
counsellors, teachers, parents and in particular students. The purpose of this study is to
begin to get at the root of the problems through the perceptions of the stakeholders. This
study explores the impact of streaming on the self-efficacy of grade 9 students from the
perceptions of the students, teachers, counsellors and administrators. Using qualitative
methods, the factors that contribute to student academic performance may surface to
assist policy makers in understanding the effect of reform.
CHAPTER III
DESIGN AND METHODOLOGY

Through the review of literature, it appears that streaming impacts student success as it relates to ability groups (Curtis, Livingstone, & Smaller, 1992; Hallinan, 2000; Ireson, et. al., 2001; Ansalone, 2003). Overall, it was found that streaming is counterproductive for students in lower academic streams. Conversely, others (Zimmer, 2003; Rosenbaum, 2000) found that streaming benefits higher achieving academic students and teachers with respect to the organization of the classroom and instructional delivery. With the change in reform in Ontario schools in 1999 and the reintroduction of streaming practices, it is unclear what impact it has on the students. Therefore the driving question behind this mixed methods research study is: How does streaming students according to the 1999 Ontario curriculum reform impact on the self-efficacy of the year 9 students?

Participants

The study was conducted in a composite public secondary school in Southern Ontario. The school population is 1000 students. Of the 170 grade 9 students, there were eighty participants, 35 in the academic science stream from 2 classes and 45 in the applied science stream from 3 classes volunteered for the study. Of the eighty students, there were 15 academic and 15 applied students randomly selected and given an in-depth structured interview. Eight secondary school teachers with a minimum of 8 years teaching experience and experience teaching grade 9 were interviewed, 5 males and 4 females, 4 administrators, 2 secondary and 2 elementary, and 2 secondary guidance counsellors.
Procedures

To understand how school culture shapes the nature of learning, a mixed research design was employed. This qualitative research is descriptive and inductive, focusing on getting meaning from the perspectives of the participants (Merriam, 1998). In this study, qualitative data exploring the impact of streaming on the self efficacy of Grade 9 students was collected through survey questions, and interviews followed by member checks. Teachers, administrators and counsellors who have experienced both legislations and streaming strategies of the last decade were interviewed to shed light on their perceptions of the impact of streaming practices. Students were interviewed to compare the perspectives on learning.

This method was chosen to triangulate the data and to draw some comparisons from students in different streams, comparing their self efficacy as well as teachers' perceptions and administrators' perception of the current education reform as compared to the previous reform with respect to their own teaching philosophy. The Tennessee Self-Concept Scale (TSCS: 2, Fitts & Warren, 1996) (Appendix A), and the Academic Self-Efficacy Questionnaire (ASE) (Wood & Locke, 1987)(Appendix B) used to compare the efficacy of the streamed groups quantitatively, while the interviews give insight on the perceptions of the participants, their teachers and the administrators on the effect of streaming.

In this triangulation mixed methodology, the quantitative and qualitative parts fit to complement or enable the attainment of the overall programmatic research goals (Morse, 2003). According to Creswell (2003), the researcher is able to collect the two types of data simultaneously. It provides a study with the advantages of both quantitative
and qualitative data. By using the two methods a researcher can gain perspectives from the different methodologies. In this study, the researcher explores the student’s self-efficacy from the perspective of the student, teacher, administrator and counsellor through a series of structured interview questions (qualitative) addressing the research problems and 2 quantitative self-efficacy measurement tools to increase inference quality.

**Data Collection**

Following ethics and board approval (Appendix C), the researcher explained the study to all the science teachers who volunteered their classes. The teachers then disseminated it to the participating students for assent to participate in research (Appendix D) and for parental consent (Appendix E). The questionnaires (Appendices A & B) were distributed to the grade 9 sciences teachers following consent. 80 out of 170 year nine science students completed the questionnaire: 45 applied and 35 academic students. The students completed the questionnaires in their science classes under the supervision of their science teachers.

Once the questionnaires were completed and collected, 15 students from applied and 15 students from the academic group who were randomly selected were asked to return for an interview session during lunch (Appendix F). Lunch was provided in the form of pizza. Volunteer students signed up for the interview lunch times on a sheet provided by the science teacher. The researcher conducted the 15 minute structured interviews with individual students in the library during the designated lunch period. After 15 days of student interviews (2 per day), the researcher conducted teacher, administrator and counsellor interviews during a convenient time for both interviewee and interviewer. This open-ended interview session lasted between 15 to 30 minutes.
They were also interviewed on their perception of the impact of the education reform on student learning, on streaming criteria, and their views of the positive and/or negatives changes brought about by the OSS curriculum documents (Appendices G & H). Follow-up member checks were conducted once the interviews were transcribed to validate the information given by the participants. This provided the triangulation needed for trustworthiness. This task was completed through the audit process and audit trail (Lincoln & Guba, 1985).

Each interview question was analyzed in isolation. Any direct responses were compared in a graphic format. The questions of the interview were designed to address the research questions. From the interview transcripts and questionnaires available to the thesis committee members, the flow of analysis from data to findings was corroborated.

It should be noted that there are interpretations that reflect the personal and subjective views of the researcher, who is part of the school culture and has a relationship with participants, particularly with the teachers, administrators and counsellors.

Research Instruments

The Academic/Work Self-Concept -The Tennessee Self-Concept Scale (Appendix A)

The Academic/Work Self-Concept Scale developed by Fitts and Warren (1996) enhances the Tennessee Self-Concept Scale (TSCS: 2). This scale was constructed to allow individuals to describe how they perceive they perform in academic and work settings as well as how they believe others perceive them in those settings. This instrument consists of 12 items addressing the affective and cognitive aspects of academic and work self-concept.
Construct validity of the scale had been assessed through factor-analytic studies. Fitts and Warren (1996) determined that it was critical to demonstrate through factor structure that test items and scales of the TSCS:2 were consistently related to each other in ways which would be predicted based on the constructs they attempt to represent. They assessed the construct validity of the TSCS:2 and its various scales and verified the multiple dimensions represented by the self-concept scales. The results from 6-factor extractions for positively and negatively worded item sets provided evidence as to the unique contributions of these test items as well as support for the scoring of the Academic/Work Self-Concept Scale (Fitts & Warren, 1996).

Content validity of the scale had been determined through item evaluations conducted by four psychologists who were also test construction experts. This team reviewed statements specifically constructed for this scale. A review had also been conducted of independently generated items and self-descriptions of hospital personnel who were asked to write statements relating to their perceptions in their work setting. Four psychologists agreed upon the content representativeness of 26 items. The final Academic/Work Self-Concept Scale includes a balanced set of 12 negatively and positively worded items whose correlation with the scale exceeded their correlations with other self-concept scales by a margin of at least .10 and which were proven through statistical analysis to be a relatively homogenous set (Fitts & Warren, 1996).

Concurrent validity of the scale had been established through correlations with the widely used Piers-Harris Children's Self Concept Scale (PHCSCS). The strongest correlations of the TSCS:2 scale were with the PHS|CSCS Intellectual and School Status scale (.62 and .59 for the Adult and Child forms, respectively). Also, there was a strong
correlation with the grade point (.34 for the adult form and .38 for the child form, respectively) (Fitts & Warren, 1996).

Fitts & Warren (1996) utilized both internal consistency and test-retest reliability estimates in assessing the scale for test reliability. Cronbach’s alpha (cited in Fitts & Warren, 1996) was calculated to estimate internal consistency. The scale had an alpha coefficient of .85 for the adult-aged group and an alpha coefficient of .81 for the adolescent group tested. Test-retest reliabilities of the TSCS:2 scales were determined by administering the Adult Form to a group of 135 high school students and retesting within a one- to two-week time interval. The estimated test-retest reliability for the scale was .76 (1996).

The Academic Self-Efficacy Questionnaire (ASE) (Appendix B)

The Academic Self-Efficacy (ASE) (Wood & Locke, 1987) measures the participant’s perceptions of his/her ability to perform various academic tasks, such as reading, note taking and memorization. The questionnaire has seven subscales: class concentration, memorization, exam concentration, understanding, explaining concepts, discriminating concepts, and note taking. It has been used to examine the relationship between self-efficacy, goals and performance. With 32 questions each having two parts, the task are rated (yes) or (no) and the confidence levels are measured on a Likert Scale.

With the outcome (grade) self-efficacy, participants were asked to indicate their level of confidence on a scale of 1 to 10 for attaining each of three grade categories on the next examination. The outcome self-efficacy measure was the average confidence score across the grade levels on this scale. Reliability (Cronbach’s alpha) for this scale
was .87. Grade self-efficacy was correlated at .60 with Wood and Locke’s (1987) Academic Self-Efficacy (ASE) measure.

A process (academic) self-efficacy measure comprised six 2- to 4-item subscales that measure specific academic self-efficacy components, including memorization, class concentration, understanding, explaining concepts, discriminating concepts, and note-taking. For each subscale, respondents were asked their confidence on a scale of 1 to 10 for attaining successive performance levels. Wood and Locke’s six subscales were derived from a series of four validation studies indicating that these 17 items (out of 29) resulted in the highest inter-item reliability, lowest standard error, and greatest predictive validity for academic performance. Process self-efficacy was the average for the confidence responses across the subscales for different performance levels. Scale reliabilities (Cronbach’s alpha) on the academic self-efficacy ranged from .73 to .87 with an overall reliability for the 17-item scale of .82.

The personal grade goal measure was the average of subsequent goals and performance. After the scores were converted to a 5-point scale the Cronbach’s alpha for this measure was .70. The actual grades for the midterms and the final examination constituted the performance measure. As was done with the grade goals, the actual letter grade earned was converted to a 5-point scale.
CHAPTER IV
ANALYSIS OF RESULTS

The purpose of this qualitative study was to explore the impact of streaming on the self-efficacy of students in year 9 science classes at a composite secondary school in Southern Ontario. Taken from the perspectives of the students, teachers, counsellors and administrators, a global view of the impact of streaming on the learning environment from the perception of the stakeholders in the school community may shed light on the factors that contribute to student academic performance in the current reform in Ontario schools.

Data gathered from this triangulation mixed methodology study were used to answer the following question and sub-questions:

How does streaming students according to the 1999 Ontario curriculum reform impact on the self-efficacy of the year 9 students?

a. How do teachers, administrators, and counsellors perceive the differences in the current streaming of students from the former?
b. How have these perceptions impacted on their instructional strategies?
c. How have the students responded to the perceptions and instructional strategies of those involved in their experience?

The findings of this study are presented in two parts. First the quantitative analysis of the two self-efficacy questionnaires, the Academic/work Self-Concept Scale (Appendix A) and the Academic Self Efficacy Questionnaire (ASE, Appendix B) is presented and will be nested in the qualitative analysis of the perceptions of the students, teachers, guidance counsellors and administrators. This analysis is presented question by question.
question. After each of the questions are addressed in this chapter, interpretations of the research findings will be discussed in the final chapter.

**Limitations of the Study**

This study confines itself to interviewing and distribution of questionnaires to students in year 9, teachers of year 9 students, administrators and counsellors in one composite secondary school in Southern Ontario. While the variable of school culture is controlled, generalizations to other schools and other districts cannot be inferred. As well, the researcher, being a teacher in the same school will bring in an intrinsic bias. Thus the findings could be subject to other interpretations (Creswell, 2003).

**Analysis of the Self-Efficacy Questionnaires**

Thirty-five academic grade 9 students in 2 science classes and 45 applied grade 9 students in science classes completed the Tennessee Self-Concept Questionnaire (Appendix A) and the ASE Questionnaire (Appendix B) in the first 20 minutes of their science class.

Academic self efficacy magnitude was analyzed with a 2 X 2 X 2 ANOVA (Stream by Gender by Age). Magnitude was computed by summing the students’ “yes” responses on the ASE. A significant effect was obtained for stream ($F(1, 79) = 6.61, p < .05$).

Specifically, students from the academic stream reported a higher mean self-efficacy magnitude than students in the applied stream (Table 1).

To examine the differences between stream, gender, and age in academic self-efficacy strength in skill processing areas (Class concentration, Memorization, Exam concentration, Understanding, Explaining concepts, Discriminating between concepts, Note-taking, and Grades) the students were asked to respond to questions on the ASE.
Students indicated their level of confidence (on a 10-point Likert-type scale). Confidence scores were computed by summing the responses for items in a particular scale and then dividing by the number of items in the scale. A 2 X 2 X 2 X 8 MANOVA was computed (Stream by Gender by Age by Scale). Significant multivariate main effects emerged for stream (Pillai's Trace = .206, F (1, 79) = 2.18, p < .05, partial η² = .21), but not for gender (Pillai's Trace = .189, F (1, 79) = 2.05, p > .05, partial η² = .19) or age (Pillai's Trace = .06 F (1, 79) = .52, p > .05, partial η² = .06). Follow up analysis showed that only grades were significant with students from the academic group indicating greater confidence in attaining good grades than students in the applied group (Table 1).

**Table 1**

**Stream differences on the Academic Self-Efficacy Magnitude and Strength Scales**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Academic (n = 35)</th>
<th>Applied (n = 45)</th>
<th>F</th>
<th>Partial η²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Academic Self Efficacy</td>
<td>28.86</td>
<td>3.60</td>
<td>24.89</td>
<td>6.88</td>
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<td>Magnitude</td>
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<tr>
<td>Academic Self Efficacy</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Strength</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Class concentration</td>
<td>8.29</td>
<td>1.45</td>
<td>8.40</td>
<td>1.07</td>
</tr>
<tr>
<td>Memorization</td>
<td>7.83</td>
<td>1.13</td>
<td>8.31</td>
<td>1.15</td>
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<tr>
<td>Exam concentration</td>
<td>8.83</td>
<td>1.21</td>
<td>9.23</td>
<td>2.45</td>
</tr>
<tr>
<td>Understanding</td>
<td>8.24</td>
<td>1.08</td>
<td>8.51</td>
<td>1.07</td>
</tr>
<tr>
<td>Explaining concepts</td>
<td>7.99</td>
<td>1.03</td>
<td>8.36</td>
<td>1.23</td>
</tr>
<tr>
<td>Discriminating between</td>
<td>8.01</td>
<td>1.20</td>
<td>8.39</td>
<td>1.16</td>
</tr>
<tr>
<td>Variable</td>
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<td>Applied ( (n = 45) )</td>
<td>( F )</td>
<td>Partial ( \eta^2 )</td>
</tr>
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<tr>
<td></td>
<td>( M )</td>
<td>SD</td>
<td>( M )</td>
<td>SD</td>
</tr>
<tr>
<td>concepts</td>
<td>Note-taking</td>
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<td></td>
<td>Grades</td>
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<td>.94</td>
<td>8.75</td>
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</table>

* \( p < .05 \)

A 2 X 2 X 2 ANOVA (Stream by Gender by Age) was conducted to determine differences between students’ scores on the Tennessee Self-Concept Scale. Self-concept scores were derived by summing students’ responses on the 12 item measure. Results of the ANOVA found no significant differences for stream \( (F(1, 79) = .58, p > .05) \), gender, \( (F(1, 79) = .35, p > .05) \), or age \( (F(1, 79) = .24, p > .05) \). Further, no interaction effects were significant.

**Analysis of Responses to Interview Questions**

Fifteen students from each of the streams, academic and applied, volunteered to be interviewed during a convenient lunch period where pizza would be provided. They were given the same set of questions and the responses were transcribed, and then, content coded. The questions were directed at exploring the perceptions of the students, teachers, counsellors and administration of current streaming practices.

**Responses to Question 1:** What are the differences between the applied and academic courses?
When comparing the responses of both academic and applied students the responses were surprisingly similar. Both groups felt that academic classes were harder to learn than applied classes and applied classes were more hands-on (Fig. 1).

Figure 1: Comparison of Applied and Academic Courses

Those students in academic, particularly the males, noted the difference in ability grouping. They made comment about the academic students "being smarter" while they considered the applied students "slower learners". It was suggested that "academic [is] for students who are doing well and applied is for students who are not doing well and need to take easier classes". One female student used the old label of advanced (from OSIS, 1989) to explain the concept of academic. She interchanged the word academic and advanced stating that "applied is for people that need help or don't fully get what should be taught. Academic is more advanced." Confirmed by another, "academic is more advanced than applied". While others looked at the streaming as "applied is for college, academic is for University" further clarification came with the comment "academic is for smarter kids and applied is for 'less' smart kids".

Like the academic students, applied students stated that "applied is more hands on and easier than academic". "The difference is that applied they aren't really advanced, in
academic they are more advanced and they are more detailed”. The applied students targeted the level of difficulty and workload rather than the students’ ability to achieve. “Applied is easy and more hands, academic is harder and more theory.” Only one female student stated “applied courses are for kids who need more help in class, academic courses are for kids with more brains”. Further, one student pointed to instructional strategies influenced by attitude directly by saying “the differences between applied and academic courses are the way the teachers teach them. Teachers spend more time with the academics and we get a lot of work in class.”

Question 2: How many of your courses this year are applied and academic?

Although the intent of the new reform was to allow students to transfer from stream to stream and take individual courses in the streams depending on their interest, this did not surface in the interviews. Students streamed in academic science took all their courses in academics with the possible exemption of French\(^2\), while those streamed in applied took all their courses in applied with few exceptions (mixed). Most of the students noted that this was a recommendation of the counsellors and grade 8 teachers. Figure 2 shows the homogeneity of the two streams.

**Figure 2: Course stream selections**

![Course Stream Selections](image)

\(^2\) Only 1 French credit is required for diploma certification.
Question 3: How do you feel about taking an academic class?

When asked how they felt about the courses designated by stream, most students discussed the level of difficulty. Academic students described their confidence levels. “I don’t feel anything. I just can work at an academic level.” “I feel smart and confident”. I feel I am capable of completing work given in an academic class and I know I can keep up.” “I don’t know, I’m smart enough to be there but I just don’t show it.” Further, “taking academic makes me feel like I have a lot of potential and I’ll be able to get a good university education”. The academic students reacted as if there was no other choice.

The responses from the applied classes were more abrupt such as “I don’t know because I am in applied”; “I feel like not taking it”; “I’m not in academic classes, so I don’t know”; and, “I would take anything but math or science”. One student describes the feeling of taking academics as good “like I would be smart or something”. A second student was concerned about the level of difficulty “I feel it would be too hard and a lot more pressure”. Another confirmed that he could do it “but [he] would get a low mark like 60%”. The applied students showed little confidence or desire to take the academic courses. There appeared to be a marked segregation between the 2 streams on how they perceived themselves taking academic classes.

Question 4: How do you feel about taking an applied class?

Not too surprising, the academic group responded in a very arrogant and condescending tone almost elitist as demonstrated in responses like “Never in a million years”; “I would feel kind of stupid because kids will make fun of you because they say..."
you are stupid”; It would be “um, way too easy and would be boring because I'd know everything.”; and, “Never, I would never limit my potential or future by taking an applied class”. Only a few stated that they didn’t know how they felt about taking an applied course. Their body language and facial expressions demonstrated an overt sense of confidence and entitlement.

Within the applied group, issues of self-efficacy were dramatically apparent. The opposite was seen in these interviews. There was a sense of destiny and almost apathy. Comments included “in an applied class, I feel like I am dumb but I get good marks like 80’s and I am proud of it”; “I feel dumb, like I am lower than every one else” and “I want to stay in applied, I’m not that smart”.

Those appearing more confident viewed the applied classes as being “more fun”, “less work”, and “easier”. One student commented that “applied is easy and the teachers don’t teach much. That’s perfect for me”.

Question 5: What are differences between workplace, college, and university preparatory courses?

Figure 3: Understanding of Streaming Directions
As seen in Figure 3 the majority of the students do not understand streaming beyond the academic and applied streams. Although the numbers are small, there were twice as many applied students than academic students that understood workplace and post-secondary direction.

In the academic stream, students’ comments were not definitive. They were still tentative and not directive. Comments included “academic can let you work anywhere while applied gets you only so far, the rest I don’t know”, and “workplace classes prepare you right for the workplace, like after grade 12, you are right into the workplace, university is harder while college prep courses are not as hard”.

The applied students were more definitive in their understanding of the pathways to post-secondary education. With a “workplace course you have a job with money, college and university courses are to help you get a good job/career”. Similarly “workplace is a job and you get paid, university and college are courses you take after high school so you know what job you want”. Interestingly, there is still a sense of segregation of class and ability grouping followed by fewer opportunities for these students. They see that there is a job that awaits them, one that pays, but not one that anyone would want. Schunk and Meece (2006) found that secondary students in transition perceive their learning environment as less focused on learning and mastery and more focused on competition and ability differences.

Question 6: What future career goals do you have?
The responses from this question generated interesting findings as shown in Fig. 4. Less than half of the Academic students had a definite career goal while over 90% of the applied students provided a career goal. The applied students were more enthusiastic about their career plans while the academic appeared more reserved in making this decision. The academic students looked at the stages of choice while the applied students seem driven by the direct choice. Table 2 below is a comparison chart of career goal selections.

**Table 2: Career Selections by Streams**

<table>
<thead>
<tr>
<th>Academic Career Selection</th>
<th>Applied Career Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. university and a good job</td>
<td>1. getting an education and having a good paying job</td>
</tr>
<tr>
<td>2. something in psych or photography or writing</td>
<td>2. become a vet</td>
</tr>
<tr>
<td>3. pilot</td>
<td>3. a lawyer</td>
</tr>
<tr>
<td>4. hardworking, confident, independent</td>
<td>4. sports or maybe law assistance</td>
</tr>
<tr>
<td>5. computer programmer</td>
<td>5. become a doctor or a nurse</td>
</tr>
<tr>
<td>6. get a scholarship for academics</td>
<td>6. have my own small business</td>
</tr>
<tr>
<td>7. teacher</td>
<td>7. tool and die or computer animation</td>
</tr>
<tr>
<td>8. a doctor or model</td>
<td>8. cosmetologist</td>
</tr>
<tr>
<td>9. medicine</td>
<td>9. open my own daycare</td>
</tr>
<tr>
<td>10. get a PhD, become a doctor</td>
<td>10. teacher</td>
</tr>
<tr>
<td>11. successful athlete, academic and get a good job</td>
<td>11. cartoonist, an actor or maybe a scientist</td>
</tr>
<tr>
<td>12. go into behavioural sciences</td>
<td>12. teacher</td>
</tr>
<tr>
<td>13. become a beautician</td>
<td>13. nurse</td>
</tr>
<tr>
<td>14. a vet</td>
<td>14. a good paying job</td>
</tr>
<tr>
<td>15. don’t know, I am only 14</td>
<td>15. a dentist</td>
</tr>
</tbody>
</table>

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The aspirations of many of the applied students are not different than those of the academic students. It is apparent that the students do not see a relationship between the program stream and requirements for their career choice. The responses to this question almost contradict the findings in the previous questions. When it comes to career choice, the applied students are not clear on the academic requirements of their career choice. Somehow, the educational system, counselling and recommendations are keeping the students naïve to the facts that career choice is dependent on academic choice.

Question 7: Do you feel confident in achieving these goals in terms of:

a. What courses you need to take?

Figure 5: Confidence in Course Selection

![Confidence in Course Selection Graph]

Although most of the Academic students felt confident in the courses that needed to be taken to reach their goals, many of them were still very sketchy and vague. Most said that they needed to continue in academic courses, a few mentioned specifics of math, geography and science, but none were able to descriptively map out their academic career. Only 1 of the 15 students set up an appointment with her counsellor to map out the courses for the future grades.

The applied students were somewhat less confident. None were able to map out the course selections for the next 3 years. Taking business courses was mentioned by the
student who wanted to have his own business, but he didn't consider mathematics and other skill-related courses. Science was mentioned by those that were seeking careers in health sciences, but not mathematics which is a co-requirement. For those that were planning careers requiring university preparatory courses, they were not aware of transfer courses and the academic prerequisites for their career choices.

b. What post-secondary options you need to pursue?

Figure 6: Confidence in Post-Secondary Options

As seen in Fig. 6 above, more than half of the academic and applied students are not confident in knowing the post-secondary options they need to pursue to attain their career goal. Even those who are confident are not clear on the requirements.

From confident academic students, statements included: “Yes, I am confident. I need university, medical school, bachelor’s degree, and specialization courses”; and “I need to take all academic courses and keep a 90% average”. Responses from confident applied students were even more vague such as “I need law and science” and “metal courses, I guess”. Most respondents said that they just didn’t know; they weren’t sure and it didn’t matter right now. One academic student questioned “if I don’t know what I want to do, how will I know what courses to take?”
c. What community/extracurricular activities are required and are beneficial to you?

Figure 7: Confidence in Benefits of Community Activities

As found in the research (Osborne, 2004; Sears & Hughes, 2005, 2006), these students both academic and applied are not clear on their role in citizenship education or even character education. They know they need 40 hours of community service, but most did not elaborate on any extracurricular or community activities that they are currently involved in. One of the applied students talked about his involvement in basketball and that he was not interested in anything else. An academic student asked “does my work count as community hours?” There was mention of working with people and helping people maybe in nursing homes or hospitals. Outside of the basketball player, the rest did not have definite goals for community service or extracurricular activities.

Evident from current research (Osborne, 2004, Sears & Hughes, 2005, 2006) Canadian schools have misunderstood the nature of citizenship. Accordingly schools equated the good citizen with the good person. Citizenship demands a willingness and ability to be active and morally principled in the public life of one’s society (p.13). Sears and Hughes (2005) in a report for the Ontario Ministry of Education comparing citizenship education across international jurisdictions found that “Canada has been a
dabbler rather than a player” (p.3). In Canada, the approach to developing civic knowledge, skills and dispositions is more consistent with indoctrination than education. Sears and Hughes (2006) found that some jurisdictions are working to take a systematic view of education reform and build a comprehensive and complex knowledge base to inform policy and practice in citizenship education. The students in this study are examples of those who wait for indoctrination rather than commit and actively involve themselves in character building and citizenship. They know they need the 40 hours of community service to graduate, yet they cannot express the value of the experience. From the perspective of one of the academic students “All community and extra-curricular are beneficial, well, I mean the ones that will help me achieve my goals”.

Question 8: Overall, how confident do you feel in achieving your future goals?

Figure 8: Overall Confidence in Achieving Goals

![Figure 8](image)

Even though there was no significant difference between the stream self-concept as seen from the analysis of the Tennessee Self –Concept Scale (p. 33), the applied students appear to be overall more confident in achieving their goals than the academic stream students. Comments included “very confident, I achieved the one I set in grade school”; “I am pretty confident in achieving my future goals because I am a smart person”; and “I feel confident as long as I do my best and keep trying”.

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From the academic students comments were similar including: “I feel pretty confident, because I know I can do it if I try”; “it depends on me, I am capable of achieving it but I need to put in the time and effort”; and “yeah, I’m confident but all I know is that I want to pass every class, I honestly don’t know what I wanna be!”. A few of the academic students were more hesitant. Their responses included: “I feel 80% confident, sometimes I am not sure when things get hard”; “I feel sort of confident but sometimes it’s too overwhelming”; and, “it’s easy if I focus and try hard”.

These findings demonstrate that these students may have come from similar prior experiences, personal qualities, and social support as social cognitive theory predicts (Schunk & Meece, 2006). Most of these students came from heterogeneous groupings in grade 8, with similar social economic backgrounds, but varying cultural backgrounds. Also, according to the teachers, the new curriculum has lowered the self-efficacy of the academic students because they believe that these students are finding it more difficult.

Teachers’, Counsellors’, and Administrators’ Perceptions of the Impact of Reform on Student Efficacy

Implementation of the new reform and restructuring of the secondary school curriculum provided a timely opportunity to study how teachers dealt with the process of change, especially in an environment where they were given little guidance for bringing it about. Eight teachers with eight or more years of experience were asked about the changes in the reform and how they perceived them in terms of student learning. These teachers were involved in the transition from OSIS to OSS, changing the grade 9 destreamed curriculum to a stream curriculum, and looking at streaming through series rather than level of difficulty as was indicative of the last reform.

Each question will be examined for data analysis.
Question 1: What are the advantages of changing from advanced and general level courses to applied and academic level courses? What are the disadvantages?

Overall, teachers found that there were no advantages to changing the curriculum from advanced and general to academic and applied. One teacher felt that courses were “made more challenging in the new curriculum and the applied/college courses were made more relevant”. The general tone, however, was reflected in a teacher’s comment, “Same courses different name” followed by “the change was thought to remove the stigma but it did not remove anything”. Another teacher just wasn’t “sure what the point of the change was”. If anything “the academic courses were more challenging then the advanced”. There were no concerns about the applied classes, neither advantages nor disadvantages. One teacher addressed the transition years as “being worse with no designation, students were still segregated in the classroom. I taught to the middle and the gifted and the weak were neglected”. Further,

“No effort went into the applied curriculum. The academic curriculum was more challenging and rigorous to the point of being overwhelming for teachers and students. At least there were resources to help the teachers. There were no resources available for the applied, just fewer expectations. Even the textbook was the same and my applied students had difficulty reading it”.

Guidance counsellors also felt that the label of “applied still has a negative connotation”. According to one of the counsellors “applied and academic should indicate more of a focus on teaching strategies”. Another counsellor found,

“There is no change. The ministry thought it was making it easier for students to move through streams from academic to applied and vice versa. Now it realizes that streaming needs to be more directed toward destination pathways. Initially the government believed that not all students should graduate and the academic standards needed to be raised. Now they are backtracking. The initial changes were horrific even for the academic students
especially in the mathematics program. Failure rates and drop-out rates increased dramatically. Credit recovery courses, coop courses and locally developed courses are now being implemented to replace compulsory credits and make graduation possible for all students. They are definitely doing a lot of backtracking and seeing the errors of their way in rushing the reform”.

From the perspective of an administrator that has over 20 years experience:

“A large educational reform was just completed in Ontario that was driven by politics. Name changes are just window dressing. The general level courses came to be seen as dead ends particularly among some racial groups who felt their kids were being funneled into these courses. The change in nine, ten labelling has not changed anything. The idea of labelling courses in the senior level was an attempt to direct students better...workplace, college, university, open, etc...there is nothing wrong with this and helps students and parents make decisions”.

There was a sense that administrators agreed that the curriculum was more rigorous and there were not enough resources for the teachers in preparing for the implementation of the new curriculum especially with the applied courses.

Question 2: What effect does the change in the labelling of courses have on student self-efficacy?

All teachers confirmed that the “labels have not changed anything in terms of a stigma. Basically advanced = academic = smart kids”. “Students know who the courses are designed for by what they are encouraged to register for.” One teacher felt that “it depends on existing self-esteem of the student. Student’s previous success in other courses of the same labelling also affects the esteem. Parent’s comments and input in student decision, the education level of the parent and the sibling level affect the esteem too”. Another believes that “students of all abilities need to improve their self-efficacy skills especially those who are weaker. Being grouped with similar students, the teacher can better plan activities suited to their needs.”
Similar beliefs on the impact of current labelling of students were revealed from the counsellors. Further, “some parents and students still look at applied and college courses as limiting students’ options in a negative way. Applied and college courses need to be promoted in a more positive way”. Still, “there is no affect. There will always be the stigma until we learn that there is a purpose for every student. The purpose of education is to improve the self-efficacy of each child so that they are all treated equally and will all have successful employment at the end”.

The administrators also confirmed what the teachers and counsellors have said. The change in labelling did not improve the efficacy of the students in the applied stream. They saw no difference in the attitudes, behaviours and outcomes of these students. If anything, the academic students were more overwhelmed which may lower their esteem especially in mathematics, which has seen a complete “face-change” in the last few years.

Question 3: How well prepared do you feel in advising students with course selections, in regards to the new curriculum?

Only two of the eight teachers interviewed felt they were prepared to advise students with course selections. One teacher commented that “the problem is that they do not always listen to what the teachers or counsellors are advising them to take. Parents affect student choices advising them to take academic science but applied math because there child does not like math or will not need math”. Further, “the new curriculum is still changing, especially in math and the teachers have not even been able to get their hands on the new curriculum that they will be teaching….the ministry is still unsure about what will be done about the changes in the grade 12 math curriculum”. Accordingly, “teachers have had no in-service on the different options students have with
courses and how to better approach the 2 streams in terms of teaching strategies, at the junior level”.

Even the counsellors had concerns about the best way to counsel the students. “Recent and constant changes to the new curriculum have made us unsure on how to counsel the students”. It was particularly frustrating especially with counselling for mathematics. For college requirements, students had to stay in grade 9, 10, and 11 academic streams. The grade 11 was too difficult for all the students leaving counsellors with a mess in directing the students”.

Administrators point to a lack of communication between the stakeholders, teachers, counsellors, administrators and parents. “Teachers should only be giving advice within their own domain and area of expertise. Changing the curriculum did not change this issues that is one of the reasons for the breakdown in the TAP groups [teacher advisory programs]”.

Question 4: Are there differences in the teaching strategies used with academic and applied classes?

All teachers confirmed that there was a difference in the teaching strategies used with academic and applied classes, but, these strategies do not really appear different than those used with advanced and general. In fact, teachers were interchanging the terms frequently in their conversation. One teacher adamantly said,

“There is a big difference… because the advanced curriculum is so detailed, students have the additional resources they need to keep up with all the information that is being presented to them – theory! The applied curriculum is so watered down that as teachers we need to do twice as much work to get the students the information they need to be able to move to the next level. Unfortunately most teachers do not take the time to provide the applied students with what they need.
There needs to be better resources and training for the teaching of applied level classes at both the junior and the senior end.

Although most teachers say that applied is more hands-on, one of the teachers contradicted by saying “In teaching academic classes I do more labs, worksheets, group work etc. in comparison to applied classes...” More than one teacher agrees that more time and resources are needed to in-service teachers on the implementation of different teaching strategies. “Different strategies should be used depending on the stream and grade level, however, they are not being used” One described the characteristics of the learners as; “applied students are concrete, sequential thinkers and have difficulty applying course concepts to novel situations. Reinforcement of the concepts at the two levels must be approached differently”. Another focused on “…teaching strategies is only one of the important components in the delivery of a course, there are other factors that affect how teachers influence students within a particular stream” while another felt that “applied should be more of an organizational focus, preparing students by building their skills for the workplace”.

From one counsellor’s perspective the teaching strategies should be very different, “Academic is more book oriented and applied is more hands on. Some of the teachers are doing it; especially the younger teachers and some are not. The veteran teachers have really not changed their strategies from the last reform”.

One of the administrators reiterated comments from teachers that “[they] need more resources and in-service to make teaching the streams more effectively. A second administrator believes that teachers are trying however, “the whole applied program is founded on a hoax that is now being addressed by the government after the King Report...applied level courses were intended to be the same material just taught in a
different way....definitely not plausible with the resources provided...these student have different needs in terms of curriculum just as they need different approaches from teachers”

Question 5: How do you feel the current strategies for academic and applied compare with the teaching strategies in advanced and general level courses?

As expected by the all previous responses, the teachers’ unanimously agreed that there were no changes in the teaching strategies. Only one teacher commented that “academic course curriculum is becoming more challenging and the applied is becoming less challenging and less appropriate”. Further said by a teacher, “the strategies are the same, it’s a name game and it wall always be that way unless we start teaching according to job skills like the Europeans”.

Counsellors and administrators perceptions were very similar to that of the teachers. They too saw little or no change in the strategies used. “How can there be change when there is no training for teachers or counsellors on the intended change and no training on the selection process. In counselling we still select students by their grades and grade 8 teacher recommendations. Nothing has changed that way”. In fact “the learning skills were incorporated into the assessment of the general level student to a greater extent which was an advantage to students who struggled academically but had good work ethics”. One of the administrators confirmed that “the curriculum was different in the advanced and general and more appropriate to their needs even though the teaching strategies were the same”. Finally, one of the counsellor’s went on to say “things won’t change unless we change the attitudes of the parents and increase
communication between teachers, parents, students, and administration in meeting the needs of ALL our kids”.

Summary of the Results

The results of this study are interpreted with the understanding of the culture of the school and the profile of the students typical of a composite school in an urban setting in a city that is 4th in cultural diversity in Canada. Since gender and age did not significantly impact on the results, it is not applied in the summary. Thus the summary will be presented in order by research sub-questions followed by the overall question.

1. How do teachers, administrators, and counsellors perceive the differences in the current streaming of students from the former?

From the data, it is clear that teachers, administrators and counsellors generally found no difference in the current streaming practice of the 1999 reform from the 1989 OSIS reform. Both administrators and counsellors spoke to the political agenda of the government and the intent to improve standards of education in Ontario. However, they were quick to mention the issues that arose from the hastily implemented measures. As perceived by the administrators and counsellors, the government has had to “backtrack” to deal with significant problems with increased drop out rates and inherent lower graduation rates. Also, of concern was the level of difficulty of the academic stream particularly in mathematics as well as the low credit accumulation of the junior students (King, 2002). As stated by one teacher “academic = advanced = smart kids; applied=general = dumb kids”. As identified by the counsellors, students were streamed in the academic and applied following the same criteria used for advanced and general streaming. Therefore, although the intent was to change the streaming practice and
remove the stigma attached to general level students and provide more direction to these students, the reality as seen through the lens of the participants was that there was no change and that the new policies created more problems partly due to the lack of resources and in-servicing of teachers. This in-turn translates into lower student self-efficacy and lower achievement.

2. How have these perceptions impacted on their instructional strategies?

Since the teachers, administrators, and counsellors all perceived no changes in the streaming practices from level of difficulty and transition years destreaming to series and streaming of academic and applied (Ontario Ministry of Education, 1998) then it would make sense that there would be no change in instructional strategies. Both administrators and counsellors concurred that most teachers did not change their teaching methods. Teachers found that it was more challenging to complete the academic curriculum as compared to the advanced. Although all agreed that academic was more theoretical and applied was more hands-on, they all admitted that the practices did not really change to reflect the intended strategies. The resources for proper implementation were not available to the teachers and there was no in-service in the approaches to the series.

3. How have the students responded to the perceptions and instructional strategies of those involved in their experience?

Students in the academic stream definitely appeared to see a clear distinction between taking academic and applied classes. Most would not consider taking an applied class other than French. A few of the students interchanged the terms academic and advanced. Not having taken advanced classes this terminology appears to be handed down from the teachers, counsellors, and possibly parents. Those in applied classes
believe the instructional strategies are easier, less work, and more fun because the teachers teach less.

The umbrella question of the study is:

How does streaming students according to the 1999 Ontario curriculum reform impact on the self-efficacy of the year 9 students?

The results of the Tennessee Self-Concept Scale indicated that there was no significant difference in self-concept between students in the grade 9 applied science classes and those in the grade 9 academic. Further, no interaction effects were significant nor was gender. However, with the Academic Self Efficacy Questionnaire (ASE), students from the academic stream reported a higher mean self-efficacy magnitude than students in the applied stream. In terms of strength in skills processing there was no significant difference in levels of confidence other than attainment of grades. Academic students were more confident in attaining good grades than the applied students.

From the interviews of the students, there were corroborating findings. More of the applied students had definite career goals and confidence in attaining these goals than those in the academic stream. The academic students appeared more concerned with the academic attainment than the career goal. The academic students appear knowledge and skills oriented. There was however, a clear perception of the level of difficulty between the academic and applied streams that was also collaborated by teachers, administrators and counsellors. This streaming practice like the last, still segregates students by level of ability, difficulty and previous academic achievement.
CHAPTER V
CONCLUSIONS AND RECOMMENDATIONS

Based on the statistical analysis and interpretation of the data collected from this study, it can be concluded that the self-efficacies of Grade 9 students in applied classes are lower than those in academic classes when considering attainment of good grades. Also, the magnitude of self-efficacy was higher in the academic streamed students than in the applied stream students.

This study shed some light on the impact of the current streaming practices from the perceptions of students, teachers, counsellors, and administrators. Although, this a snapshot view of the effects of streaming practices on local high school students, it is influenced by an overlapping series of complex phenomena with varying factors affecting the responses of the participants and this conclusion. Generalizations from this research concerning the effect of streaming on self-efficacy of students must be made cautiously due to its exclusivity to a local high school in Southwestern Ontario. However, the findings do suggest a need to revisit the streaming practices and critically apply research and assessment to educational policies.

It was found that the introduction of series to replace levels of difficulty in Ontario reform did not change the perception of teachers, counsellors and administrators on the streaming of the students. According to the participants, students streamed by series were selected by the same process as former students streamed by level of difficulty. They perceived the stigma and lower self-efficacy of lower streamed students, whether applied or general, to remain the same if not lower.
In accordance with King’s Report (2002, 2004), the participants, particularly, teachers and counsellors found the math curriculum to be so challenging that even the majority of academic students were unable to maintain a level 3. Since King’s findings, the teachers are eagerly awaiting the revision of the curriculum expectations. Rhonda Kimberley-Young, President of OSSTF stated, "I think we have to applaud the government on moving ahead with programs that will address the needs of many students in the educational system…. We are not surprised at the information outlined in Dr. Alan King’s, Double Cohort Study - Phase 4 report. OSSTF has said that the changes made by the previous government would have a negative impact on the learning of applied level students". (OSSTF, 2006, p.1).

In this study and as noted in other studies (Antonelli, 2004, Ryan & Joong, 2005), educators are labelling the students as “applied level”. This implies that students are in that stream because they have been segregated and labelled by some, often, subjective selection process that has not changed from the last streaming practice. In the larger study of the teachers commissioned by the OSSTF, Antonelli (2004) found that teachers cited behavioural issues as the biggest obstacle to teaching in the Applied stream (p. 5). These teachers noted that chronic behavioural issues were brought about by incorrect student placement, lack of support from administration, and the high number of identified or “at risk” students placed in Applied classrooms.

This reinforces the fear that exists when low-achieving academic students identify with each other in terms of status level, being labelled as slow or difficult creating a self-fulfilling prophecy. The literature (Ansalone, 2003; Antonelli, 2004; Hallinan, 1998) directs the problem of negative peer socialization placing low
achieving students at risk for developing poor classroom and study habits, as well as developing low self-efficacy and its related low motivation for learning (Bandura, 2005).

With all this research, 54% of Ontario teachers surveyed (OSSTF, 2000) identified the return to streaming as a positive initiative. Further, 84% of teachers who taught destreamed classes in 1993-94 strongly disagreed that destreaming allowed them to give more individual attention to students (OSSTF, 1995). Antonelli (2004) confirmed that over 43% of his respondents felt that having different learning levels within the classroom posed a severe obstacle to Applied level learning. Thus, Ontario has returned to streaming in the transition years following the reform of the Harris Government (O'Sullivan, 1999). In its haste to implement the programs, the resulting grade 9 curriculum documents were published with no serious debate about the overall goals and purpose of Ontario education in a global context (1999).

In analysing the responses of the participants in this study and in the above studies, it is clear that students placed in the Applied stream are at-risk of developing poor self-efficacy and motivation to attain the goals they aspire to in Grade 9. According to the respondents, there is a lack of communication between the policy makers and the stakeholders and even among the stakeholders, that is, teachers, parents, administrators, counsellors, and students. To confirm this, current Deputy Minister of Education, Ben Levin (2001) in a former study stated that all stakeholders, including parents/guardians should be involved in the curriculum reforms process by having more discussions with their children about their academic work and educational progress. Teachers and administrators can only facilitate this communicative process once they are given more supports, resources, and training.
The grade 9 applied students from this study showed lower self-efficacy in terms of grade attainment and magnitude of confidence. Yet in their interviews they were still confident of attaining their goals. Although it may first appear to be an anomaly it is possible that self-appraisal skills may still not be highly developed in the applied participant group. In self-efficacy research, (Schunk, 1995) it is common for children to feel highly efficacious about accomplishing difficult tasks even when they are provided with feedback indicating low performance. According to Schunk and Pajares (2004), the incongruence between children’s self-efficacy and their actual performance may be due to various causes. If they lack task familiarity they may be swayed by certain task features while ignoring other features. Accuracy improves with their capability to focus on multiple features.

According to Schunk (1995) children may have faulty knowledge about their performance capabilities. In elementary school, teacher feedback is intended to encourage and stress what children do well. As adolescents they gain task experience and engage more often in peer social comparisons, which improve the accuracy of their self-assessments. However, persons who are similar or slightly higher in ability provide the most informative comparative information for gauging ones own capabilities (Ryan, 2000).

According to Schunk and Pajares (2002), students in highly motivated peer groups increased in motivation while those in low-motivation peer networks in homogeneous low-streams tended to decrease in motivation. There appears to be a link between the stream, motivation for learning and the development of accurate efficacies. Also, instructions and opportunities to practice self-evaluation improve accuracy of self-

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efficacy (Schunk, 1995). This implies that the instructional strategies may be impacting on the development of efficacy skills. This also suggests training and resources are required for teachers to build on developing self-assessment skills for all students especially the applied level students.

Implications of Study

This study suggests that streaming practices, given different names, by different policy makers, have not really changed over the decades. The social consequences of streaming are complex and unequal and will remain a problem until the stakeholders communicate with each other in the best interest of our youth. The answers are not straight forward. Sorting students by groupings makes instructional strategies easier. Or, does it? Somehow, we are still failing a large group of our students.

The findings in King’s report did not astonish the teachers (OSSTF, 1995). The inclusion of the perceptions of the teachers, administrators, counsellors, administrators and students need to continue to be infused in the research in education reforms. Leaders in education reform should pay attention to the complex relationships developed in the schools, the factors that impact on implementation of school reforms, and necessary resources and professional development that will create a climate supportive of student learning. Teachers need to be open and flexible to change and need to continue to develop relationships that are trusting and meaningful to the development of accurate and positive self-efficacy. Parents need to be open to communicating with their adolescents about education and future goals. And students need to feel empowered by their education.
Future Research and Recommendations:

Research on teacher training in self-evaluation and its impact on self-efficacy is needed. Also a longitudinal study of the efficacy of the students in each year of their academic career would shed light on the impact of streaming over 4 years on the self-efficacy of these students as they develop through adolescence. With the introduction of Pathways to Success by the Ministry, assessment research and feedback to the stakeholders is crucial to the continued success and improvement of the initiatives.

Teacher education programs and in-service programs need to include courses on streaming practices and the instructional strategies that will reach all students. By improving student satisfaction in their programs may lead to improved self-efficacies and open pathways for success of all students.
Academic/work Self-Concept Scale – Tennessee Self-Concept Scale
(Fitts & Warren, 1996)

Class: ________________________ M/F Age: ____________

Instructions:

On this page there are some statements that will let you say how you feel about yourself. There is no right or wrong answer, so just pick the answer that says how you feel. Read each sentence and decide how well it fits you. Then circle one of the responses that shows your answer using this scale:

1 = Always False  2 = mostly false  3 = Partly false and partly true  4 = mostly true  5 = always true

1. Math is hard for me
2. I am not as smart as the people around me
3. It is easy for me to learn new things
4. I do well at math
5. Other people think I am smart
6. I am not good at the work I do
7. I'll never be as smart as other people
8. I like to work with numbers.
9. I can’t read very well.
10. I do as well as I want to at almost any job.
11. I do not know how to work well.
12. It’s hard for me to understand what I read.
APPENDIX B

Academic Self Efficacy Questionnaire

Class: ________ M/F Age: ________

ASE Questionnaire

Read this page carefully.
Do not turn over the page until you are instructed to do so.

The questions in this booklet ask about your perceptions of your ability to perform various academic tasks, such as reading, note taking and memorization. For each of the tasks you are asked to make two judgements about your ability to perform at varying levels of difficulty.

(1) Could you perform the task at the level of difficulty described if you wanted to? If your answer to this question is yes, then you enter a “Y” in the CAN DO column. If it is no, enter an “N” in that column.

(2) How confident are you about your ability to perform at that task level? If in the next few days you were given a test of your ability to perform the task, how confident are you that you could perform at the level described?

Indicate your degree of confidence by entering 0 to 10 in the CONFIDENCE column, based on the following confidence scale.

<table>
<thead>
<tr>
<th>Level of Confidence</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
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<tr>
<td>Totally Unconfident</td>
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SAMPLE ITEMS

Now consider some sample items. The first asks about assigned reading in the main text for this course. For this item we have filled in a hypothetical student’s answers for you to illustrate the use of the scale.

READINGS ASSIGNED PAGES IN TEXTBOOK

<table>
<thead>
<tr>
<th>CAN DO</th>
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<tr>
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<td>Y</td>
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<tr>
<td>Y</td>
<td>7</td>
</tr>
<tr>
<td>N</td>
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</table>

Note that this student is sure s/he can read all the material at least once, but is less confident s/he can read it twice (7 vs. 10). S/he does not think s/he could read it five times (no time? boredom?).

Now answer the next item on your own.

LIFTING – ability to lift weights from a floor

<table>
<thead>
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REMEMBER THE COURSE IN WHICH THIS QUESTIONNAIRE IS BEING ADMINISTERED IS THE ONE YOU SHOULD THINK OF WHEN ANSWERING THE FOLLOWING QUESTIONS.
### Level of Confidence

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### CLASS CONCENTRATION

The proportion of class periods for which you feel you are able to concentrate and stay fully focused on the materials being presented.

| CAN DO CONFIDENCE |
|-------------------|-------------------|
| 1. Concentrate for at least 50% of a class period |  |
| 2. Concentrate for at least 70% of a class period |  |
| 3. Concentrate for at least 90% of a class period |  |
| 4. Concentrate for 100% of a class period |  |

### MEMORIZATION

The proportion of facts and concepts covered in the course that you feel you are able to memorize and recall on demand (e.g., exam time, in response to questions).

| CAN DO CONFIDENCE |
|-------------------|-------------------|
| 1. Memorize 60% of the facts and concepts |  |
| 2. Memorize 70% of the facts and concepts |  |
| 3. Memorize 80% of the facts and concepts |  |
| 4. Memorize 90% of the facts and concepts |  |
| 5. Memorize 100% of the facts and concepts |  |
EXAM CONCENTRATION

The proportion of time during exams for which you feel you are able to focus exclusively on understanding and answering questions and avoid breaks in your concentration.

<table>
<thead>
<tr>
<th>1. Stay focused on the exam for 50% of the time</th>
<th>CAN DO</th>
<th>CONFIDENCE</th>
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<tbody>
<tr>
<td>2. Stay focused on the exam for 70% of the time</td>
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<tr>
<td>3. Stay focused on the exam for 90% of the time</td>
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<td></td>
</tr>
<tr>
<td>4. Stay focused on the exam for 100% of the time</td>
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</table>

UNDERSTANDING

The proportion of facts, concepts and arguments covered in the course that you feel you understand as they are presented in lectures, tutorials or course materials (e.g., textbooks, assigned articles).

<table>
<thead>
<tr>
<th>1. Understand 50% of concepts as presented</th>
<th>CAN DO</th>
<th>CONFIDENCE</th>
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<tbody>
<tr>
<td>2. Understand 70% of concepts as presented</td>
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<tr>
<td>3. Understand 90% of concepts as presented</td>
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<tr>
<td>4. Understand 100% of concepts as presented</td>
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</table>
EXPLAINING CONCEPTS

The proportion of facts, concepts and arguments covered in the course (i.e., in lectures, tutorials or course materials) that you feel you are able to explain clearly to others in your own words.

1. Explain 40% of the concepts, etc. in my own words
2. Explain 60% of the concepts, etc. in my own words
3. Explain 80% of the concepts, etc. in my own words
4. Explain 100% of the concepts, etc. in my own words

DISCRIMINATING BETWEEN CONCEPTS

The degree to which you feel you are able to discriminate between the more important and less important facts, concepts and arguments covered in the course (i.e., in lectures, tutorials and course materials).

1. Able to identify the most important concepts, points, etc. 50% of the time
2. Able to identify the most important concepts, points, etc. 70% of the time
3. Able to identify the most important concepts, points, etc. 90% of the time
4. Able to identify the most important concepts, points, etc. 100% of the time
Level of Confidence

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</table>

NOTE-TAKING

The proportion of the time that you feel you are able to make understandable course notes which emphasize, clarify and relate key facts, concepts and arguments as they are presented in lectures, tutorials or course materials.

1. Make understandable notes for 50% of the material
2. Make understandable notes for 70% of the material
3. Make understandable notes for 90% of the material
4. Make understandable notes for 100% of the material

GRADES

The degree to which you feel you have the necessary skills to get various grades in this course, assuming that you try.

1. Get an A in this course
2. Get at least a high B in this course
3. Get at least a low B in this course
4. Get at least a C in this course
APPENDIX C

Letter of Permission from the Board Office

2006-03-22
Dina Salinitri
Riverside Secondary School

Dear Dina:

Re: Research Project: - Streaming in Secondary Schools: Effects on Student Self-Efficacy

This is to inform you that your research project has been approved by the Research Review Committee of the Greater Essex County District School Board. The approval has been given in the context of the information provided in your request, as well as the modifications made by you based on feedback from the committee. The following conditions are brought to your attention from the general policy of the Board regarding the conduct of research:

General Conditions
1. That the anonymity of participating staff, schools and Board is assured in all future published articles or reports, contact with the news media, personal conversations, or other forms of communication, by any university or any other organizations or individuals involved in the project.
2. That the participation of all involved is on a strictly voluntary basis;
3. That parental permission be obtained for participants who are minors; and
4. That one copy of the report will be provided to this office at the completion of the study.

You may find it helpful as you undertake your project to include a copy of this letter in your introduction package to potential participants. The Committee extends its best wishes for the successful completion of the study.

Respectfully,

Donald T. Abrash, Ph.D., C. Psych.
Supervisor of Psychological Services
Chairperson, Research Review Committee

cc: - Mr. D. Lynn, Superintendent of Education.
APPENDIX D

Letter of Assent

UNIVERSITY OF
WINDSOR

ASSENT TO PARTICIPATE IN RESEARCH

Title of Study: Streaming in Secondary Schools: Effects on Student Self-Efficacy (Student Perceptions)

Dear Student,

You are asked to participate in a research study conducted by me, Ms. Salinitri, as a graduate student from the Faculty of Education at the University of Windsor. The results of this study will be used in my Master's thesis. As well, your parents will be given a letter of consent and information regarding this study. Both you and your parents are requested to sign the respective forms before you can participate. This ensures that your parents and you know that the study is for research purposes only and student names will not be identified in any reports.

If you have any questions or concerns about the research, please feel to contact me at Riverside Secondary School, 9484116 or my supervisor, Dr. Allen at the University of Windsor, 2533000 ext 3965.

PURPOSE OF THE STUDY

The purpose of this study is to explore the impact of streaming on the self-esteem of students in grade nine science classes at Riverside High School. For the purpose of this study, self-esteem will be defined as an individual's judgements about his or her capabilities to succeed in school and adjust to their new environments.

PROCEDURES

If you volunteer to participate in this study, we would ask you to do the following things:

1. Complete a questionnaire. It will take you about 15 minutes to complete during your lunch period. You do not have to put your name on the questionnaire, however, I ask you to put your class identification. Lunch will be provided for all student participants.

2. Once you have completed the questionnaire, you may be asked to participate in an interview. Those being asked to participate in the interview will be randomly selected from the all the students completing the questionnaires. Once selected, you will be asked few questions that will assist me with my study. This should take about 20 minutes of your time at another convenient lunch period.

3. Once I have completed my analysis, I will ask you to verify some of the things you may said.

POTENTIAL RISKS AND DISCOMFORTS

There are no foreseeable risks to you. All I will need is a part of your lunch period. Your names will not be used in the research and the information is kept confidential.

POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

The information from this study will help us understand the streaming process. It will help students in better
understanding the course selection process. This will help in goal setting and future career planning. This should also help educators and parents understand the needs of the students, help to decrease drop out rates and improve learning.

PAYMENT FOR PARTICIPATION

For your assistance with this study, you will be provided lunch during the sessions.

CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. All of the documentation and data collected will remain in a locked cabinet in Ms. Salinitri's office at her home.

PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don't want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE SUBJECTS

The results will be made available through a presentation to the classes and through a report which will be available upon request.

SUBSEQUENT USE OF DATA

This data will not be used in subsequent studies. The data will only be used for the current study.

RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue participation without penalty. If you have questions regarding your rights as a research subject, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario, N9B 3P4; telephone: 519-253-3000, ext. 3916; e-mail: lbunn@uwindsor.ca.

SIGNATURE OF RESEARCH SUBJECT/LEGAL REPRESENTATIVE

I understand the information provided for the study Streaming in Secondary Schools: Effects on Student Self-Efficacy as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

______________________________
Name of Student

______________________________
Signature of Student

______________________________
Date

SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct research.

______________________________
Signature of Investigator

______________________________
Date
February 2, 2006

Dear Parents/Guardians,

Your child will be asked to participate in a research study which I am conducting as a graduate student from the Faculty of Education at the University of Windsor. The results of this study will be used in my Master’s thesis. Your consent is requested and appreciated.

Attached is a letter of information and a letter of consent that will provide you with further information about the research study. I ask that you read the letter thoroughly and if you permit your child to participate, please sign the consent form and return it with your child to their science teacher at Riverside Secondary School by February 9th, 2006.

If you have any questions or concerns about the research, please feel free to contact Ms. Salinitri at Riverside Secondary School, 9484116 or her supervisor, Dr. Allen at the University of Windsor, 2533000 ext 3965.

Thank you for your consideration.

Dina Salinitri
Graduate Studies
Faculty of Education
University of Windsor
CONSENT TO PARTICIPATE IN RESEARCH

Title of Study: Streaming in Secondary Schools: Effects on Student Self-Efficacy (Student Perceptions)

Dear Parents/Guardians,

Your child will be asked to participate in a research study conducted by Ms. Salinitri, a graduate student from the Faculty of Education at the University of Windsor. The results of this study will be used in her Master’s thesis. Your consent is requested and appreciated.

If you have any questions or concerns about the research, please feel to contact Ms. Salinitri at Riverside Secondary School, 9484116 or her supervisor, Dr. Allen at the University of Windsor, 2533000 ext 3965.

PURPOSE OF THE STUDY

The purpose of this qualitative study is to explore the impact of streaming on the self-efficacy of students in grade nine applied and academic science classes at a composite secondary school in southern Ontario. For the purpose of this study, self-efficacy will be defined as an individual’s judgements about his or her capabilities to organize and execute courses of action required to attain designated performances. For further clarity, according to the Ministry of Education Curriculum Documents, those students streamed in the academic science course will learn scientific theories and investigations while those students streamed in the applied science course will design and conduct investigations into practical problems.

PROCEDURES

If your child volunteers, with your consent, to participate in this study, we would ask him/her to do the following things:

4. Complete a questionnaire. It will take your child about 15 minutes to complete during their lunch period. Your child will not have to put his/her name on the questionnaire, however, he/she will be asked to put his/her class identification. Lunch will be provided for all student participants.

5. Once he/she has completed the questionnaire, he/she may be asked to participate in an interview. Those being asked to participate in the interview will be randomly selected from all the students completing the questionnaires. Once selected, your child will be asked a few questions that will assist me with my study. This should take about 20 minutes during a convenient lunch period.

6. Once I have completed my analysis, I will ask your child to verify some of the things he/she may have said.

POTENTIAL RISKS AND DISCOMFORTS

There are no foreseeable risks to your child. All I will need is a part of his/her lunch period. Your child’s name will not be used in the research and the information is kept confidential.

POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

78
The information from this study will help us understand the streaming process. It will help students in better understanding the course selection process. This will help in goal setting and future career planning. This should also help educators and parents understand the needs of the students, help to decrease drop out rates and improve learning.

PAYMENT FOR PARTICIPATION

For your child's assistance with this study, he/she will be provided lunch during the sessions.

CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with your child will remain confidential and will be disclosed only with your child's permission. All of the documentation and data collected will remain in a locked cabinet in Ms. Salinitri's office at her home.

PARTICIPATION AND WITHDRAWAL

Your child can choose whether to be in this study or not. If he/she volunteers to be in this study, he/she may withdraw at any time without consequences of any kind. Your child may also refuse to answer any question and will still remain in the study. The investigator may withdraw your child from this research if circumstances arise which warrant doing so. This will occur without penalty to your child.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE SUBJECTS

The results will be made available through a presentation to the classes and through a report which will be available upon request.

SUBSEQUENT USE OF DATA

This data will not be used in subsequent studies. It will only be used for the current study.

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Your child may withdraw his/her consent at any time and discontinue participation without penalty. If you have questions regarding your child's rights as a research subject, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario, N9B 3P4; telephone: 519-253-3000, ext. 3916; e-mail: lbunn@uwindsor.ca.

SIGNATURE OF RESEARCH SUBJECT/LEGAL REPRESENTATIVE

I understand the information provided for the study Streaming in Secondary Schools: Effects on Student Self-Efficacy as described herein. My questions have been answered to my satisfaction, and I permit my child to participate in this study. I have been given a copy of this form.

________________________  ____________________________  
Name of Subject  Signature of Subject or Guardian  Date

SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct research.

________________________  ____________________________  
Signature of Investigator  Date
Interview Questions: For Grade Nine Applied and Academic Students

1. What are the differences between the applied and academic courses?
2. How many of your courses this year are applied and academic?
3. How do you feel about taking an academic class?
4. How do you feel about taking an applied class?
5. What are the differences between workplace, college, and university preparatory courses?
6. What is a transfer course? Have you taken one? If so, was it beneficial?
7. What future career goals do you have?
8. Do you feel confident in achieving these goals in terms of:
   a. What courses you need to take.
   b. What post-secondary options you need to pursue.
   c. What community/extracurricular activities are required and are beneficial to you.
9. Overall, how confident do you feel in achieving your future goals?

General Comments:
APPENDIX G

Interview Questions: For Teachers who have experienced teaching in both reforms

1. What are the benefits of changing from advanced and general level courses to applied and academic level courses? What are the disadvantages?

2. What effect, if any, does the change in the labeling of courses, have on student self-efficacy?

3. How well prepared do you feel in advising students with course selections, in regards to the new curriculum?

4. Are there differences in the “teaching strategies” used with academic and applied classes?

5. How do you feel those strategies compare in teaching the advanced and general level courses?

General Comments:
APPENDIX H

Interview Questions: For Administrators and Guidance Counsellors

1. What are the benefits of changing from advanced and general level courses to applied and academic level courses? What are the disadvantages?

2. What effect, if any, does the change in the labeling of courses, have on student self-efficacy?

3. How well prepared do you feel teachers are in advising students with course selections, in regards to the new curriculum?

4. Do you feel teachers are using the appropriate "teaching strategies" with both the academic and applied classes?

5. How do you feel those strategies compare in teaching the advanced and general level courses?

General Comments:
REFERENCES


Toronto: University of Toronto Press.


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VITA AUCTORIS

NAME: Dina Salinitri

PLACE OF BIRTH: Windsor, Ontario

YEAR OF BIRTH: 1978

EDUCATION:

- University of Windsor, Windsor, Ontario 1997-2001 B.Sc., B.Ed.
- University of Windsor, Windsor, Ontario 2002-2006, M.Ed.