

THE IMPACT OF DUAL CREDIT ON COLLEGE ACCESS AND
PARTICIPATION: AN ONTARIO CASE STUDY

by

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ABSTRACT

The purpose of the study is to better understand the extent to which dual credit contributes to increased access and participation in college. As an initiative to facilitate the transition from high school to college for many students, dual credit has grown in scale and popularity in Ontario in recent years. By giving participating students credit towards both secondary school and college, dual credit is seen as a particularly effective mechanism in assisting disengaged students and groups under-represented in postsecondary education achieve success in high school and college. Still at an early stage of implementation in Ontario, little formal research has been conducted to explore the elements contributing to the program's success and the benefits and outcomes for participants.

Through the use of mixed methods of research, the study explores from a case study perspective the experience of dual credit at a single Ontario college in collaboration with its local partner school boards. Research methods include examination of student grades, policy and program documentation; student and parent surveys; and interviews with staff involved

in planning and delivery. The analysis is informed by conceptual frameworks of student change allowing for consideration of a broad range of variables.

Results of the study revealed that dual credit was deemed to be a success by students, parents and staff involved with the programs. Dual credit was viewed as particularly effective in terms of academic benefits and creating a greater awareness of college, contributing to student confidence and leading to increased likelihood of college participation. Dual credit participants were found to be primarily middle achievers academically, tended to perform better in dual credit courses than in high school, and obtained slightly higher grades than college peers in the same courses. Given the program delivery models studied, it was concluded that middle achievers were likely to benefit most. The study also concluded that student characteristics including pre-existing confidence and motivation should be considered an important element of success along with program elements and institutional factors. As an innovative program demonstrating positive results, more research should be done to assist in developing dual credit further.

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Colleagues and friends, including my fellow cohortians and college staff provided both moral and material support. Not only were they interested in helping me personally, but my research focus on dual credit as an innovative program with promise in helping even greater numbers of students succeed at college, clearly resonated with the core values of all those within the community of interest in education.

I must also acknowledge the Ontario government for initiating the dual credit program as part of their leadership in making education a priority for our students. We have made great strides in improving high school graduation and postsecondary participation rates,

and with continued innovation and conviction, future generations will benefit from smoother transitions within our educational system helping all learners achieve their full potential.

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CHAPTER 1

INTRODUCTION

It is becoming a common observation that in the global economy of the 21st century, knowledge generation and application are increasingly recognized as critical in determining the prosperity of individuals, communities and nations. Reform and innovation occurring within many jurisdictions can be characterized in large measure as an effort to improve output and outcomes at all levels of education in support of this recognition. From a learning or pedagogical perspective, as well as public policy, it makes sense to increase linkages between sectors of education which have traditionally developed as a series of separate steps. *Dual Credit* programs integrating curriculum between high schools and college are growing in Ontario on the assumption that they contribute towards student success both in terms of high school completion and greater likelihood of postsecondary participation. Defined in its simplest terms, dual credit refers to a course where high school students earn both high school and college credits concurrently for the same course. This can be differentiated from *dual enrollment* programs where high school students may enroll in college courses for credit, but are not necessarily receiving credit towards high school for the same course.

As a type of credit based transition program (CBTP), dual credit programs have an intuitive appeal in terms of assisting students in bridging or attenuating the often unfamiliar divide that exists between high school and college. An examination of dual credit programs contributes towards a reconceptualization of education as a seamless or continuous pathway from elementary and secondary through postsecondary. Such high school-college partnerships have played a central role in educational reforms in the U.S., often characterized as the *K-16* movement, however it remains to be seen whether they will evolve in similar directions in other jurisdictions. Of particular interest to the following study is the effect of

dual credit initiatives in influencing student decision making regarding postsecondary participation, and facilitating effective transitions leading to greater likelihood of persistence and successful completion. In this regard, the study seeks to test core assumptions of the Ontario policy to invest in dual credit strategies as these relate specifically to student transitions to the postsecondary component of the K-16 continuum. This will be done through an exploration of the implementation and experience of one Ontario college and its partner school boards with dual credit programs. St. Lawrence College was an early adopter of dual credit programs in Ontario. Given the familiarity of the researcher with the college and the institution's experience with dual credit, St. Lawrence provides fertile ground for the study.

1.1 Background of the Study

Although well established in the United States and other jurisdictions with a longer history and greater experience in facilitating the transition from high school to college; research, policy and practice on dual credit programs are at an early stage of development in Ontario. While credit based transitions programs such as the International Baccalaureate program and Ontario Youth Apprenticeship program (OYAP) have been in existence for some time, Dual Credit programs were formally introduced as pilot programs in 2005 by the Ontario government. Dual Credit has become formalized under the Student Success program of the Ontario Ministry of Education. Programs are intended to assist secondary students in the completion of their Ontario Secondary School Diploma (OSSD), and assist in the transition to postsecondary education through expanded and enhanced pathways in partnership and collaboration with a variety of institutional partners.

In the current Ontario context, dual credit programs are primarily associated with colleges as the partner institution for high schools, and specifically involve diploma and

apprenticeship courses. While open to all students, the primary focus is on those facing the greatest challenges in graduating. This includes disengaged and underachieving students with the potential to succeed but who are at risk of not completing high school, and students who have left school before graduating. Engaging students with these characteristics is consistent with the traditional mandate of colleges in providing access to education for a broad range of students. The generally more open entrance requirements and applied nature of career oriented college programs offers a distinct pathway with appeal to students preferring or requiring a different route than university. The Ontario Ministry of Training, Colleges and Universities is formally partnering with the Ministry of Education to fund the School-College-Work Initiative (SCWI) which coordinates dual credit programming (among other initiatives) to promote enhanced awareness and pathways beyond high school.

Given the current approach to dual credit, it appears the Ontario government is not particularly concerned with potential issues around the “diversion effect” which some claim is created by participation in community college diverting students from attaining bachelor degrees. While significant issues persist in terms of student mobility between college and university in Ontario, it appears the priority of increasing postsecondary participation rates for traditionally underrepresented groups trumps other concerns, and college is deemed an effective access point.

The emergence of dual credit programs can be viewed as being influenced by a number of factors in addition to the goal of contributing towards student success. At a time of increased accountability in government and competition for public funds, a greater premium is placed on demonstrating outcomes and the improvement of results. Although Ontario has relatively high secondary school completion and postsecondary participation rates, the government has made education a priority and has set targets for higher levels in both areas.

Demographic shifts are also creating challenges for the labour market placing renewed emphasis on developing the human resources necessary to maintain competitiveness and prosperity in the economy. The looming skills shortage created by waves of retiring baby boomers and the dynamics of the knowledge economy is occurring as traditional student populations and enrolment at all levels of the education system are poised to enter a period of decline.

In terms of practice and policy, the implications of dual credit research are significant as it addresses the capacity of current structures and institutions to deliver intended outcomes, particularly with respect to high school success and entry to college. Research can also provide insight into areas requiring reform and associated options for policy development. In light of current Ontario government initiatives intended to increase student retention, graduation, and postsecondary participation such as the Student Success program, Learning to 18 and the Reaching Higher plan for postsecondary education, research on dual credit programs will benefit students and institutions at all levels of education by better informing efforts at developing improved pathways.

1.2 Problem Statement

The purpose of the study is to understand the role of dual credit programs in increasing access to and participation in college. The intent is to examine whether or not and to what extent these initiatives influence behaviour and perceptions to better inform and prepare students for college. While high school success and postsecondary participation are clearly related, the study will focus directly on the college side of dual credit.

1.2.1 Research Questions

The overarching research question is to ask:

- *What is the impact of Dual Credit programs in increasing access and participation in college?*

While much of the analysis of dual credits is characterized by a general assumption that they are well received and a good experience for participants, there is less research on how they actually contribute towards student success in terms of influencing student pathways beyond high school. In order to advance understanding in this regard, the study first describes at a system level, the state of dual credit programs in Ontario, including a discussion of the circumstances and reasons behind the introduction of these programs as well as an overview of program features and models. The nature, dynamics and impact of dual credit programs are better understood when consideration is given to historical antecedents and evolution within the educational system. Given the relatively early stage of development and research into dual credit in Ontario, a comparative perspective drawing on more established literature and models from the U.S. experience will contribute to the analysis.

This higher level overview will provide the context for the primary focus of the study examining the experience with dual credit programs at St. Lawrence College. Through a combination of surveys and interviews, data will be collected and analyzed to address the following subsidiary research questions with respect to increased college participation:

- *What are the perceptions of those involved in Dual Credit regarding program success?*
- *What elements of Dual Credit programs contribute to their success?*
- *What student group(s) is Dual Credit best serving?*

The study proposes to introduce elements of student development theory into the assessment of the impact of dual credit models on postsecondary access and participation. The research orientation will be guided by theories of student change that emphasize the role of environmental factors rather than a primary focus on the personal characteristics of students. This is consistent with the analysis of dual credit as a programmatic intervention on the part of institutions and as such is aligned with “college impact” models or theories of student change which are described below.

Dual Credit programs offer an interesting environment in which to consider theories of student change as they represent and involve a unique type of transition in the sense that students are simultaneously involved in high school and college. Pascarella and Terenzini (2005) have discussed two approaches to student development theory: one emphasizing psychological stages and the other psycho-social. Within the latter, a number of researchers have focused on institutional activities or interventions, and the impact they have on student success (Astin 1985, 1993, Tinto, 1987, 1993). College impact models are more sociological in nature than developmental theories focused primarily on student values and behaviours. Students as active participants are behaving within a context of institutional structures, policies and programs which are assigned a prominent role as influencing outcomes. Consistent with this theoretical approach, the research questions will focus more on the influence of the dual credit program intervention than student pre-program or personal characteristics.

In terms of the overall research questions of this study, such an orientation would suggest that dual credit programs contributing to access and college participation are likely to be successful when they display characteristics associated with findings in the literature that enhance student success. Student success for the purpose of this study encompasses the

concept of access defined as getting in, but also looks for evidence that students will continue to participate as a result of being better prepared for persistence and postsecondary completion because of the design of the dual credit program.

1.3 Professional Significance

The professional significance of the study can be examined at a number of levels. In terms of educational policy and practice, if dual credit programs are deemed to be successful in facilitating the transition between secondary and postsecondary education, greater integration between sectors may be worth exploring. K-16 planning has not caught on in Canada as it has in other countries. While it is possible to point to progress in terms of acknowledging the need for more seamless pathways and collaborative initiatives between secondary and postsecondary sectors on curriculum reform, for the most part, little integration in policy planning and practice occurs. In Ontario, the challenge lies not only in secondary-postsecondary linkages, but also within the postsecondary sector where significant barriers persist with respect to credit transfer and student mobility between college and university.

The study has further professional significance in that it contributes to an understanding of whether dual credit programs in Ontario hold the same value as they do in other jurisdictions given differences in the nature of programs as well as the context in which they occur. In the United States, dual credit evolved primarily as a strategy to fast track higher achieving university-bound students capable of mastering advanced curriculum beyond regular high school programming. More recently dual credit is increasingly recognized as an effective strategy to better prepare groups traditionally under-represented in postsecondary education. Rather than a means of helping students who least need assistance get through university quicker, dual credit takes on a qualitatively different meaning when used for the

developmental purpose of helping students achieve goals that may not be otherwise attainable.

The shift in focus is consistent with the democratization of education where postsecondary education is no longer the preserve of the elites but is increasingly viewed as an expectation for the success of individuals and society in an increasingly knowledge based economy. Given this recognition, community colleges in the United States as institutions of access offering technical education, as well as opportunities to prepare for four year degree programs, are the principal postsecondary player in dual credit. In Ontario the development of dual credit programs has occurred primarily as a means of producing better high school completion rates as part of provincial student success strategies, with the corollary benefit of increasing postsecondary education participation. Viewed in this regard, dual credit may be seen as contributing to greater access to postsecondary education in the sense that programs increase the size and demographic breadth of the qualified and interested applicant pool.

The concept of access through dual credit, drawn from the US experience, needs to be modified in the Ontario context given differences in the relationship between colleges and universities. The lack of integration between Ontario colleges and universities provides greater limitations on student mobility in the sense that college cannot be viewed as a portal to a four year degree as it is in the US. Whether this bifurcation within Ontario's postsecondary education sector and associated difficulties in transferability and student mobility have any impact on student perceptions and participation in dual credit programs is an important consideration in understanding the context in which dual credit programs occur. Although a thorough exploration of this is beyond the scope of the study, the perspectives and experience of those involved with dual credit offer some insight in terms of what student groups are best served and the program features and elements contributing to their success.

This is particularly relevant from a policy perspective as well given that dual credit programs remain in an early stage in Ontario where experimentation is being encouraged and evaluation and assessment continues in order to determine which models most effectively contribute to intended outcomes.

1.4 Overview of Methodology

The research adopts a case study approach examining the experience of a single college and partner school boards in implementing pilot programs in different dual credit models. Research will involve the use of several methods including documentary analysis, surveys and interviews, with primary emphasis given to considering the experience and perceptions of those associated with dual credit programs including students, parents, teachers and administrators.

The case study is a prevalent research type within educational research. Merriam (1998) suggests that one of the reasons case studies have illuminated educational research and practice for over thirty years is because they can and do accommodate a variety of disciplinary perspectives. This is reflected in the literature review for this study, as dual credit programs as an educational practice related to student transition or development may be informed by theoretical traditions from sociology or psychology. The case study appears to be the dominant approach within empirical studies of dual credit offering the most compelling analysis and theoretical context.

Case studies are differentiated from other types of research in that they are intensive descriptions or analyses of a single unit or bounded system such as a program, event, or intervention. They are particularly suited to studies where researchers wish to gain in-depth understanding of a situation and its meaning for those involved. Educational case studies focus on some aspect of educational practice, which in this study is dual credit programs

between high school and college. A common characteristic of case study research is that it can be richly descriptive and may have a direct influence on policy, practice and research. The descriptive orientation of a case study approach is appropriate and consistent with research conducted in the early stages of a phenomenon. As such it is well suited for the study of dual credit programs in Ontario which still in early stages of evaluation and documentation.

The case study will focus on dual credit programs in Ontario from the perspective of the experience at St. Lawrence College. One of 24 public colleges of applied arts and technology in Ontario, St. Lawrence College operates three primary campuses in south eastern Ontario partnering with different school boards to deliver dual credit programs. The development of pathways to promote access and increase postsecondary participation has been identified as a priority in the college's strategic plan for several years. This has been driven by an institutional strategy to address declining demographics in traditionally college-age students, as well as by the broader college mandate to provide access to education. An outcome of this focus is an earlier development and more varied experience in dual credit programs relative to other Ontario colleges. While there is some continuity in program models between campuses there is also variety within and between campuses providing the study with diversity in programs and students. The selection of a single institution with different models, rather than an examination of the experience of multiple institutions was made because an assessment of different models or types of programs is deemed to provide a richer research environment for the purposes of understanding the dual credit phenomena than looking at similar programs across institutions.

Given that dual credit continues to be in an early stage of implementation in Ontario, the research conducted in this study as well as others using similar methods, provides insight into

the application of specific models in practice. This is particularly relevant considering the primary objective of any pilot initiative is to assess the performance of trial programs against established policy goals and narrow down or refine the programs and/or policy through an iterative process. The present study contributes to this by focusing research on the question of the impact of dual credit on the stated objectives of increasing access and participation in college. The exploration of this is facilitated by an analysis of participant perceptions, program elements and characteristics, and how these most effectively result in student and program success. Studying one college with multiple campuses and multiple participating school boards and high schools serves primarily to enhance understanding of dual credit within this specific context. The benefit of research findings and validity of results relates to what the study reveals within the boundaries of the case and what this may represent or imply for investigations of dual credit elsewhere.

1.5 Delimitations

In terms of delimitations of the study, while efforts have been made to establish different types of dual credit programs (Clark 2001), for the purposes of this study research is limited to college-based dual credit programs. The decision to focus the study on the experience of one college with multiple campuses engaged in dual credit programs places additional boundaries on the case as the research does not consider the experience of other pilot projects at different institutions which may have different characteristics, perceptions and motivations. It is acknowledged that greater variety of program models and institutions could be assessed in a broader study, however the intentionally specific focus of this case enables a deeper understanding of the complexity of the programs in keeping with the special features of case study research characterized as particularistic, descriptive and heuristic (Merriam, 1998). The selection of the specific college provided a further benefit to this

characterization of case study research in that the researcher is employed by the college providing access and familiarity with the development and implementation of the dual credit programs.

A further limitation of the study is that it deals primarily with descriptions and perceptions of the program during a fixed period of time. While Dual Credit programs in Ontario may not have been in place long enough to make a significant longitudinal study possible, such an endeavour may offer insight into actual outcomes in terms of student destinations after completion of the program. Given the complexity of the student experience from program completion through high school graduation and postsecondary destination, and the many potential influencers along the way it is difficult to imagine being able to control for all the variables in a meaningful way. It is rather the intent of the study, informed by student development theory, to examine student involvement and perceptions of particular programs as a method of understanding how we may support better transitions and successful outcomes for students and educational systems.

CHAPTER 2

LITERATURE REVIEW

The determination of the areas of literature to inform the study of the impact of dual credit programs on access and participation in postsecondary education is based on several assumptions. These are worth articulating in order to understand the particular approach adopted by the study and the potential insights and opportunities for research and practice that may emerge. Firstly it is assumed that Dual Credit programs both represent and may facilitate a form of transition for students who participate in them. Secondly it is assumed that transition implies elements of change for the students. Thirdly it is assumed that for dual credit programs to have any impact on student access and participation, then some type of change must occur with respect to the student. Based on these assumptions, the literature review is divided into literature dealing with student change in making the transition to college, and literature examining different types of programs and initiatives of a general and specific nature related to Dual Credit. Given the focus of this study on dual credit as applied in the Ontario educational context, the literature review while acknowledging the variety of credit based transition programs, will primarily be concerned with programs of a related nature.

As will be discussed in the following chapter, while research on credit based transition programs such as Dual Credit has been primarily descriptive in nature, theories of student change offer conceptual frameworks that may contribute towards a better understanding of the dynamics and impact of these programs on postsecondary access and participation.

2.1 Student Change and Postsecondary Transition

The literature and theory on student development and change is extremely broad and deep, informed by perspectives from a range of disciplines. For the purposes of this study there is no intent to consider the vast body of general theory but to focus on literature that is deemed useful in contributing to an understanding of student change as it may relate to involvement in dual credit programs. It is difficult to find any theoretical literature on student development directly related to transitions and experience with dual credit. Most of the theory deals with development and change either within a particular setting or environment, such as a school or program, or looks at transitions from one setting to another. Dual credit programs involve change and transition related to the concurrent experience between the two systems of secondary and postsecondary education. It is this aspect of dual credit programs in particular which is often viewed as providing the basis for many of the benefits attributed to it, and as such also offers insight into developing a better understanding of how and why they are perceived as contributing to greater access and participation in postsecondary education. Given the interesting questions raised by the unique nature of dual credit programs for discussions of student change, certain areas of literature on student change can be viewed as particularly informative for the research questions of this study.

It is useful to note that within the literature, a distinction is drawn between student development and change (Pascarelli & Terenzini 2005). Rather than viewing student change and development synonymously, development is described as involving systematic and organized changes serving an adaptive function which presumes progression towards greater maturity or complexity. In contrast to this organic view borrowed from natural science, change is understood as a descriptive term addressing alteration over time in behaviour and characteristics, but with no directionality implied. Based on this distinction, theories of

college student change can be separated into two families of models - “Developmental” and “College Impact”. Developmental models tend to be dominated by psychological stage theory (Erikson 1963, Chickering 1969, 1993), placing emphasis on change within the individual. College Impact models place less focus on intra-individual development and more on environmental and inter-individual origins of student change. This separation of student development theory is reinforced by Rignall (2005) in reviewing literature on student transitions. Rignall categorizes literature into two perspectives; one focused on the individual and their experiences and the other rooted in organizational theory dealing with students generally and institutional/system structures and processes.

2.2 College Impact Models

The categorization of theories of student development offers insight into how different perspectives can be used to inform analysis of a particular phenomenon or research question. While there may be basic differences in assumptions between schools of thought, the value in comparison lies in determining which theory best guides the inquiry or enriches understanding. For the purposes of understanding the role of dual credit programs in college access and participation, this study views College Impact models as offering greater promise than developmental theories. As Pascarelli & Terenzini observe, college impact theories focus more on the origins and processes of change associated with the institutions students attend, or the experience students have when enrolled in programs. In this sense they are more eclectic than developmental theories as they typically consider a broader set of variables than the more singular focus on what changes within the individual student. These considerations are also significant in informing the methodology and approach adopted in conducting research within the case study.

College impact models can be seen as influenced theoretically by the traditions of social psychology which recognize that an individual is both a psychological and a social being. Emphasis is placed on situations, or how the social environment influences behaviour, variability rather than stability in behaviour, and changeability to the extent that individual characteristics such as thought, emotion and behaviour can have a major impact on the outcomes of situations. Considered the father of modern social psychology, Kurt Lewin advanced the general conceptual orientation of “interactionism” that assumes each person’s behaviour is a function of his or her personal qualities, the nature of the situation, and the interaction of these personal qualities with factors present in the particular situation. The key element in this perspective which is helpful in informing the analysis of dual credit advanced in this study is the assertion that behaviour is a function of person and the environment. In order to develop a full understanding of the impact of dual credit in increasing access and participation in college, it is necessary to examine the perceptions, motivations and expectations of those involved, as well as the structure and elements of the programs.

2.3 Astin: Theory of Involvement

Following in this tradition, Astin (1993) is attributed with developing one of the most influential college impact models with the Input-Environment-Outcome (I-E-O) model. The model provides a conceptual framework for studying student outcomes. The basic purpose of this model is to assess the impact of various environmental experiences of students. College outcomes are viewed as functions of three sets of elements: “Input” refers to the characteristics of students at entry into college or a particular program. “Environment” refers to the programs, policies, peers, faculty and education that students experience. “Outcome” refers to the student characteristics after exposure to the environment. Although applied by Astin to the college environment, the I-E-O model could be used to study student outcomes

in high school or in the hybrid situation of dual credit where students are involved in two different environments concurrently.

Further development of Astin's work can be seen in his "theory of involvement" extending his thinking to explain the dynamics of how students change or develop (Astin 1985). Involvement according to Astin refers to behaviour and his theory is based on five basic tenets:

- 1) involvement requires the investment of physical and psychological energy into particular objects defined as people, tasks or activities
- 2) involvement is a continuous concept and students will invest varying amounts of energy in different objects
- 3) involvement has both quantitative and qualitative features
- 4) the amount of student learning and development is directly proportional to the quality and quantity of student involvement
- 5) educational effectiveness of any policy or practice is related to its capacity to induce student involvement.

Astin's work occupies the middle ground between psychological and sociological explanation of student change as he attributes a key role to institutions in offering a variety of experiences to students, however it is up to the student to take advantage of the opportunities the environment presents. Instead of what he refers to as the black box of traditional pedagogical theories, his work emphasizes that simply exposing students to a particular environment does not necessarily lead to a desired effect unless it elicits sufficient student effort and investment of energy to bring about change.

In terms of relating Astin's theory of involvement to dual credit, as a continuous concept with quantitative and qualitative features, the starting point for involvement is the decision to

participate. This can be viewed as a planned behaviour influenced by student experience and attitudes towards high school as well as perceptions of dual credit. Once enrolled and participating in dual credit, student behaviour and performance are influenced by involvement and exposure to both the high school and college environment. These multi-institutional influences combine with individual student characteristics in determining outcomes with respect to student success related to dual credit. Following the key principle of social psychology, if behaviour is a function of the person and the environment, then dual credit programs provide an environment that reinforces and facilitates greater confidence and motivation to pursue college after high school. A sufficient quantity and quality of involvement occurs to bring about a change in student thinking and behaviour regarding college participation, particularly amongst student groups underrepresented in postsecondary education.

2.4 Tinto: Theory of Integration

Tinto's integration framework (1993) shares many common assumptions with Astin's model. The concept of involvement central to Astin is similar to Tinto's notion of integration. Building on his theory of student departure, his work is primarily sociological in nature drawing from Durkheim's theory of suicide. According to Tinto, students enter college with a variety of dispositions and intentions and these are affected by interactions with the systems of the institution. Students who become integrated into college, by developing connections to individuals, participating in clubs, and engaging in academic activities, are more likely to persist than those who remain on the periphery. Integration can occur along two dimensions, academic and social. Academic integration occurs when students become attached to the intellectual life of the college. Social integration occurs when students create relationships and connections outside of the classroom. Positive or rewarding experiences are viewed as

leading to greater academic and social integration, which in turn leads to greater persistence. Conversely, negative interaction leads to withdrawal. The two main elements of integration, while interacting with and enhancing one another to increase the likelihood of persistence, are for Tinto analytically distinct and students may not be equally integrated on both dimensions.

In a further evolution of the college impact perspective Tinto and Pusser (2006) in an effort described as moving theory to action, propose a model of institutional action for student success. Building on Tinto's previous work, the new model argues that institutional commitments provide the overarching context for institutional action. This is consistent with Tinto's thinking that there are both formal and informal systems within institutions that can encourage integration and persistence. Institutions committed to student success are more likely to generate success than those who place a higher priority on other competing commitments. Institutional commitment to student success in turn sets the tone for the expectational climate for success that students encounter in their everyday interactions with the institution, its policies and practices, and its faculty, staff and other students.

Tinto and Pusser go further than most college impact models in extending their conceptual framework to include consideration of transition or pathways programs from secondary to postsecondary institutions. Recognizing that issues of student integration and involvement at college are influenced by their experience and level of preparation prior to participation, Tinto and Pusser identify several areas for policy and practice in support of more effective transitions. These include Kindergarten -16 (K-16) policies designed to align standards and goals, including specific standards for learning outcomes and competency in elementary-secondary education that are prerequisite to postsecondary enrolment and

success; policies on educational remediation for students at the threshold of postsecondary enrolment; and policies supporting teacher preparation in support of greater P-16 alignment.

2.5 College Impact and Dual Credit

College impact models of student change can be seen as useful in contributing to an understanding of dual credit as they offer insight into the similarities and differences between different types of transition to postsecondary education. Traditional thinking on student transition to college as characterized by college impact models begins with the new college student who has completed high school and who must now adapt to the new environment. This is a very different notion of transition than that which the dual credit student experiences as they are associated concurrently with what are typically two distinct educational systems. The general conceptual framework associated with the college impact perspective would offer a common explanation of the factors contributing to successful student transitions. The more engaged students are in a wide variety of elements related to the student experience, the greater the likelihood that they will be successful. As students become more familiar with the institution and its expectations, faculty, programs and services they not only become more comfortable, but their confidence increases as well. Comfort, confidence and self esteem all grow as affiliation and familiarity increase.

As an educational practice or institutional intervention, dual credit seeks to employ program elements that contribute to what is conceptually referred to as academic and social integration. Successful transitions whether through dual credit or persisting as a college student are characterized by elements of both. The distinction between academic and social integration may be more heuristic than real as it is difficult to imagine any program that does not incorporate elements of both given that the learning process is fundamentally a social

activity. This notwithstanding, when exploring the success of dual credit programs, it is possible and useful as demonstrated by the research of the present study to examine programs on the basis of these distinctions in order to determine effective program elements and test college impact theory assumptions.

While transition through dual credit displays certain similarities to student transition as addressed by college impact models, significant differences also exist given that students enrolled in such programs are experiencing and interacting with two institutional environments at the same time. Conceptually this can be viewed as a continuum with bridging activities constituting a point of greater complexity with potentially greater variability in the student's experience. Rather than leaving an environment of established integration and involvement and facing challenges of separation and adaptation to something new, students blend old and new experiences simultaneously; reacting and adapting differently depending on their intentions, motivation and dispositions. This distinction is central to the notion of providing a "seamless" transition integrating the secondary and postsecondary experience, contrasted with traditional notions of transition which often assume more of a distinct "break" between high school and college and the subsequent adaptation required of students for persistence. In terms of providing conceptual frameworks to better inform the study of dual credit, the interest of college impact models in the interaction of students with institutions and environmental factors, highlights the importance of considering contextual differences and potential variation of experience for students in transition programs compared to full-time college students.

2.6 Secondary - Postsecondary Pathways Initiatives

In order to fully appreciate research on dual credit and conceptual models applied to further our understanding, it is important to comment on the theoretical and historical antecedents or influences. At its most general level, dual credit research can be situated within literature that can loosely be defined as academic pathways. Academic pathways in simple terms can be thought of as models and means of strengthening relationships between secondary schools and colleges, providing access points and a continuous progression to and through higher education (Bragg, Kim, & Rubin 2005). This perspective is based on the assumption that educational systems and programs which are characterized by an integrated approach from elementary to secondary and through postsecondary are superior in terms of potential outcomes for students. Central to the concept of academic pathways which is also important in situating dual credit initiatives, is the emphasis on boundary-spanning curricula and supporting organizational structures, policies and practices that enhance college access.

The tendency of many modern educational systems is to create divisions which may be characterized as separate and distinct stages on the educational continuum. A number of writers have documented and commented on what has been described as the “Great Divide” between secondary and postsecondary education (Kirst and Venezia, 2001). This has not always been the case as for much of the 19th century, higher education institutions dictated curriculum, issued tests, approved secondary courses and created bridging schools to prepare students for entry into university. Educational reform has been an ongoing theme for many years; however until recently it was isolated within sectors. This inward looking reform focus likely exacerbated the so-called divide. In the U.S. calls for the need to address the bifurcation between systems began as early as the 1960’s however it has been noted that not much attention was paid to the need for a broader reform until the 1990’s (Haslam,

Rubenstein). In Ontario the bifurcation is the result of deliberate policy reflecting the need for increased government involvement as the postsecondary sector grew with the industrializing post-World War II economy.

Given these factors and the contextual circumstances of varied jurisdictions, K-16 reform efforts have emerged in a wide range of manifestations, but with some key common characteristics. Two fundamental ideas behind these initiatives are the “creation of systemic reform strategies across the education continuum” and the belief that both K-12 and postsecondary education need to reassess what they are doing in order to have a more significant impact on the educational success of students. Common principles include the interdependency of the different levels of the educational system and the need for alignment in curriculum, assessment and teacher training. Hodgkinson (1985) is credited with originally describing a seamless system of interlinked layers where gaps between layers could weaken the whole system.

By the 1990’s credit based transition programs were growing in popularity across the U.S. as effective strategies for addressing issues associated with the great divide. While considerable variation exists, they all have the common feature of allowing high school students to take college level classes and earn college credit while still in high school. CBTPs were originally developed as enrichment strategies for academic high achievers, but have since been broadened in recognition of their promise in addressing problems of college access, retention and completion particularly for low to middle academic achievers and disadvantaged students. In Ontario dual credit has been embraced more for these latter reasons, as a strategy for high school student success under the Learning to 18 initiative but also to enhance postsecondary participation and completion rates. Dual credit and related transition programs are recognized as providing students with a range of positive benefits as

described by Golann and Hughes (2008), Hoffman and Vargas (2005), Karp, Bailey, Hughes, and Fermin (2004), and Pennington(2004)

- Preparing students for the academic rigour of postsecondary curriculum
- Providing clear communication to students clarifying expectations and realities of college life and skills required to succeed
- Providing more academic opportunities and electives beyond traditional high school curriculum
- Reducing high school drop-out rates and increasing postsecondary participation and completion rates
- Presenting college as a viable option for students, particularly those who may not have planned to attend and those whose family members have not attended
- Increasing the affordability of college by enabling students to earn college credit tuition free

It is clear from the growth in dual credit programming, enrolment and policy development that educators and policy makers have bought into the benefits. Dual credit programs are available in every U.S. state, and while current numbers are difficult to obtain, in 2002-03 it was estimated that 1.2 million U.S. students participated (Waits, Setzer, & Lewis 2005). Programs can be seen as ranging widely in their structure often depending on state policy regulations and/or different agreements between high schools and colleges. Variation relates but is not limited to key features such as location of program, teacher qualification, student mix, and target population.

Numerous national initiatives in the U.S. are underway in support of the goals and objectives associated with dual credit. The College and Career Transition Initiative (CCTI) sponsored by the US Department of Education is a consortium led by the League for

Innovation in the Community College. The main purpose of CCTI is to strengthen the role of the community and technical colleges in easing student transitions between secondary and postsecondary education and into employment and in improving academic performance at both the secondary and postsecondary levels. CCTI has five specific goals: (1) decreased need for remediation at the postsecondary level; (2) increased enrollment and persistence in postsecondary education; (3) increased academic and skill achievement at the secondary and postsecondary levels; (4) increased attainment of postsecondary degrees, certificates or other recognized credentials; and (5) increased entry into employment or further education (Hughes and Karp, 2006). CCTI has now established a network open to institutions in North America interested in helping students ease the transition from high school to college and careers, increasing the rate of completion and success for their students, building partnerships with high schools and businesses, reducing remediation for their incoming students, learning about and developing career pathways, and dual or concurrent enrollment.

Another innovative project also through the League for Innovation is The Bridge Partnership. Community colleges and high schools work together to increase the number of students who aspire to go on to college, to accelerate their preparation and smooth the transition to college entry and success. Sixty-Five Community Colleges and over 90 high schools in 20 states are participating. Similar to CCTI, Bridge Partnership objectives include the following: to increase the number of high school students, especially minorities, who aspire to a college education; to increase the percentage of students who complete high school prepared to begin standard college credit courses; to increase the number of prepared students who take Advanced Placement courses or earn college credits while in high school; to facilitate the alignment of the high school and community college curriculums (League for Innovation 2006).

2.7 Credit-Based Transition Program Models (CBTP)

Popular and well documented CBTP models in the U.S. include: Advanced Placement, Tech Prep, International Baccalaureate, Middle /Early College High School, and Dual enrolment/Dual Credit. These most prevalent programs can be briefly summarized as follows:

2.7.1 Advanced Placement

Started in 1995, the Advanced Placement program is administered by the College Board and offers high school students college-level courses in a wide range of subjects. High school teachers utilize a highly structured standards-based curriculum. Students may earn college credit by scoring well on a rigorous standardized exam administered at the end of the course.

2.7.2 Tech Prep

A highly diverse program established in 1990 and funded by the U.S. Department of Education, Tech Prep programs combine at least two years of high school coursework with two years of postsecondary education in a seamless course of study. They integrate academic and technical skills with work-based learning experiences, and may lead to an associate's degree or certificate in a specific career area. College credit for high school courses is not necessarily part of the Tech Prep strategy, however in some cases students earn credit "in-escrow" – or after they complete specified courses in college.

2.7.3 International Baccalaureate

The International Baccalaureate program was started in 1968 by the International Baccalaureate Organization as a liberal arts course of study for students in international schools around the world. The program is an internationally recognized, rigorous, and comprehensive two-year course of study for high school juniors and seniors. At the discretion

of the college, students earn credit based on cut-off scores on exams in specific fields leading to an International Baccalaureate Diploma.

2.7.4 Middle College High Schools

Middle College high schools are small high schools located on college campuses. They were established as alternative high schools to assist students who are at risk of dropping out of traditional high schools to meet graduation requirements and make the transition to postsecondary education. The schools structure a program of study that includes both high school and college courses and provide a range of personalized student supports. The location offers students additional opportunities and exposes them to a more diverse and more mature student population. Students are given more freedom, but they are expected to take additional personal responsibility for their education. Middle Colleges combine the benefits of small schools with access to facilities and opportunities that are more typical of large schools

2.7.5 Early College High Schools

Supported by the Bill and Melinda Gates Foundation, Early College High Schools are small schools in which students earn both a high school diploma and two years of college credit in four or five years. Typically, these schools are located on or near college campuses. The campus location facilitates student access to the range of opportunities on campus, increases student motivation, and allows students to accelerate their education. The college schedule allows teachers to utilize innovative instructional approaches.

2.7.6 Dual Enrolment / Dual Credit

Often used as a term to loosely describe in a general sense the previously described transition programs, dual enrolment can be differentiated from these in that high school students take college courses designed for college students. Unlike other programs where

students participate in one or more courses designed specifically to allow high school students to earn credit towards college, dual enrolment in this sense involves taking unmodified college courses. Furthermore as the term is used in this study, dual enrolment involves high school students enrolling in college courses for college credit, but not necessarily receiving credit towards high school for the same course. This can distinguished from dual credit which refers to a course or courses where high school students earn both high school and college credits concurrently for the same college course(s). Ontario dual credit initiatives can be described as meeting these criteria while allowing for some variation in delivery models. The research focus of the present study are framed by these parameters and are intended to explore an example of how this is working in the context of one college and high schools with associated school boards.

A 2001 study of U.S. programs and policies that offer high school students college credit (Clark 2001) demonstrates how dual credit loosely defined can refer to the full range of transition programs. Using Clark's template to categorize programs, the table below articulates some of the factors that can differentiate program models. The "Type 3 – College-based" definition of dual credit is the model that most accurately matches Ontario policy and practice and as such is the focus of the present study.

Table 1

Dual Credit Program Typology

Short Descriptor	Type 1 Exam Preparation	Type 2 School-Based	Type 3 College-based	Type 4 Career Prep.
How credit is obtained	Credit obtained after course and passing exam	Credit obtained and transcribed as if taken from college	Credit obtained and transcribed as other college courses	Credit may require further college faculty review prior to transcript
Location	Usually taught in high school	Usually taught in high school	Usually taught on college campus	Usually taught at high school with employer internship
Teacher	Usually taught by high school teacher with special training	Taught by school teacher approved by college	Taught by college teacher and rarely approved school teacher	Taught by school teacher approved by college
Examples	-Advanced Placement (AP) -International Baccalaureate (IB)	-Early and Middle High School	-Middle College - Ontario Dual Credit initiatives (most)	-Tech Prep

Note. Adapted from “Dual Credit: A report of programs and policies that offer high school students college credits” by R.W. Clark, 2001

In the most comprehensive descriptive study of the U.S. experience to date (Karp, Bailey, Hughes and Fermin, 2004) legislation is reviewed in 50 states. Of the 40 states with policies or regulations, it is clear that the regulatory landscape is characterized by great variation on the various features of dual credit programs. The authors set the framework for their study by identifying ten main features that can be used to analyze dual enrollment programs. From a policy perspective the authors observe that no state addresses all ten features, however from a research perspective, the framework provides a useful approach for the study and future investigation. By clarifying common elements, programs can be reviewed and compared against these with the intent of gaining a better understanding of the

success and benefits of a diverse range of programs. The key features are: state mandate and oversight; target population; admission requirements; location; student mix; credentialing and approval of instructors; course content; method of credit earning; program structure and intensity; tuition and funding.

Reaching similar conclusions to those found in other studies, the authors found that state policies vary widely and, although the rapid expansion of dual credit programs tends to assume popularity equals success, questions about access and rigor remain. Specifically, the research does not consistently link dual credit policy to promoting college transition for underserved students or those who typically are less likely to attend postsecondary. Furthermore, given the various delivery modes and mixed use of instructors, if there is uncertainty over the quality and rigor of courses, then the value of dual credit in offering sound academic preparation for successful transitions is in doubt.

Given the specific definition and requirements of dual credit policy in Ontario, the conditions giving rise to concerns expressed in the U.S. study are mitigated. Provincially approved dual credit in Ontario adopts primarily a college based delivery model involving college faculty using college curriculum based on ministry approved standards. As will be discussed, Ontario policy categorizes dual credit primarily on the basis of responsibility for delivery. The main categories in this respect are: Advanced Standing (high school responsibility), Team Taught (joint responsibility), and College Taught (college responsibility).

A number of writers have observed that the rapid growth of programs has not been matched by evaluative research. In writing about a 2001 study on dual credit in all 50 U.S. states, Clark (2001) observed that while there is a large and growing number of participants in these programs, there is also a definite “love-hate” attitude towards them. While

advocates extol the lengthy list of dual credit benefits, others doubt the quality of such courses as truly at the college level or question whether they improve access. In this 2001 study it is noted from a review of education literature that an “information vacuum” exists with most of the writing being of an explanatory and descriptive nature with little analytical or evaluative work. The growth of dual credit programs is viewed as a harbinger of a major shift in the sequence of formal schooling, and the authors encourage greater experimentation with new models of K-16 education and greater research and evaluation of these programs. Echoing similar views on the dearth of evaluative research more recently, Karp and Hughes (2008) assert that the benefits are only presumed and that there is even less information on middle and low achieving students in dual credit programs because their inclusion is relatively new.

2.8 Bailey and Karp Conceptual Framework

A 2003 study by Bailey and Karp, examining 45 studies, papers and books on credit based transition programs came to similar conclusions as Clark’s 2001 study regarding the state of the literature and the need to conduct more methodologically sound research that evaluates program outcomes and explores the mechanisms and program features that have a positive influence on student transitions into and through postsecondary education (Bailey & Karp, 2003). The study contributes to the need for more analytical research on dual credit and offers a conceptual framework for credit-based programs. The conceptual framework, while not explicitly stated, can be viewed as providing a link to theoretical discussions of student development. Consistent with Astin’s view of student involvement, and based on descriptive research of U.S. based programs, the authors constructed three broad categories of intensity for dual credit programs. Intensity for them refers to the degree of involvement in which the dual credit program engages and changes the student’s learning environment and

the amount of support services needed. The three categories can be viewed on a continuum of intensity of involvement beginning with “singleton” programs at the low end and “enhanced comprehensive” programs at the high end. In the middle are “comprehensive” programs.

Singleton programs are typically only a small part of a student’s high school experience, exposing them to college level curriculum but usually taking place at the high school. Although considered in policy as meeting the needs of a wide variety of students, the majority of U.S. research reveals that students in these programs are already highly motivated and academically proficient. The goal is not to recreate or engage students in the college environment, but to enrich the high school curriculum.

Moving toward the middle of the continuum are comprehensive programs focused typically on seniors and encompassing most of their educational experience. The key characteristic of the comprehensive model is that it subsumes the full high school experience under a credit-based transition program. In the U.S. models, most of the students involved in these programs are academically advanced and college ready. Though the intensity of these programs may offer students an opportunity to learn the behaviours and attitudes necessary for college success, their primary intent and focus is on academic preparation, exposure to rigorous coursework, and the ability to earn college credit and advanced standing.

At the high end of the involvement continuum are enhanced comprehensive programs. These are characterized as preparing students for college not only through academic instruction, but also by offering a wide range of support activities such as counseling, mentoring and other student services available to typical college students. They are intended to address all elements of the high school-college transition, and encompass the majority of the student’s experience. In the U.S. research, enhanced comprehensive programs

are deemed best suited to the needs of non-traditional students and are viewed as having the most potential to move non-academically advanced students into postsecondary education.

Bailey and Karp offer a matrix of program types using the categories and different criteria such as target student, location, instructor, course content and credits earned as well as degree of intensity. It is consistent with theories of involvement, transition and retention that adopt a behavioural or interactionist perspective and assume that greater involvement is generally equated with greater success. Basing their conceptual framework on the key factor of “intensity of involvement” Bailey and Karp appear to be working from a college impact perspective on student change and development. Similar to much of the research on academic pathways and dual credit their approach is primarily descriptive, documenting the nature and characteristics of programs. Others documenting pathways programs in a similar vein are Bragg, Kim and Rubin (2005), Andrews (2001), Orr (1999, 20002), Karp, Bailey, Hughes & Fermin (2004), Kleiner (2005), and Rasch (2002). In their conclusions, Bailey and Karp recommend a number of directions for further research including:

- develop more precise information on the distribution of the characteristics of students in transition programs
- develop a clearer explanation of the mechanisms through which credit-based transition programs can effectively help middle and lower achieving students gain greater access to and have more success in college
- conduct clear, methodologically sound evaluations of credit-based transition programs
- conduct research on the impact of different program models on student outcomes

The foundational work of Bailey and Karp establishing a framework for understanding dual credit programs can be viewed as more taxonomy than theory. The focus is more on the program characteristics or what may be seen as contributing to success rather than clearly stating assumptions and articulating how these features lead to successful transitions to college. There is an implicit assumption in their model that intensity of involvement as defined by the sophistication of program features integrating high school and college curriculum and student participation, is the main factor contributing to successful student transitions. This may well be the case, however it cannot be assumed based on an assessment of program features alone, but should consider the role of different student characteristics and motivations as well.

For these reasons, the framework is informative but does not easily accommodate dual credit in the Ontario context where policy and activity has not been focused on what Bailey and Karp define as comprehensive and enhanced comprehensive programs. Ontario programs are closer to a singleton model but not of the same type that Bailey and Karp describe based on their assessment of the U.S. experience. In Ontario, college based singleton programs whether team taught or college taught are specifically intended to engage students in the college environment with targeted groups being students struggling in high school and those traditionally underrepresented in postsecondary education. Ontario programs are currently not designed as multi-year initiatives for particular student cohorts throughout the high school experience, but are primarily offered on a semester basis to interested students. Given these contextual differences and the research questions of the present study it is interesting to explore whether and how Ontario models can be just as successful in meeting program outcomes for the student groups served.

2.9 Lerner and Brand: Dual Credit Literature

A 2006 study commissioned by the American Youth Policy Forum, funded by the Lumina Foundation, (Lerner and Brand, 2006) offers a compendium of research on programs and models designed to link secondary and postsecondary education in the US. Referring to these programs as Secondary-Postsecondary Learning Options, the authors provide the following categories in reviewing the initiatives: Dual Enrolment, Tech Prep, Middle and Early College High Schools, Programs Serving Disadvantaged Youth, and College Access Programs. The study was guided by questions that attempted to address the gap in evaluative research on these programs. It asked if there was evidence that the various program models were effective in increasing academic performance, increasing entry to and retention in postsecondary education, and generally meeting their respective goals of serving specific target populations or specific problems. The evaluations considered a variety of outcomes, including high school completion, college-going rates, college course grades/GPA, retention, degree attainment, and job market outcomes. Outcome data was largely at a specific point in time rather than longitudinal and very few were able to compare outcomes to control groups for statistical significance. Several studies are included for analysis as models of dual enrolment featuring dual credit as a key feature.

Programs categorized as dual enrolment are of particular interest to the present study as they feature dual credit opportunities similar to the Ontario model. As with other studies, it is difficult to differentiate the different categories of programs, however it appears that the defining feature of dual credit is that high school students take actual approved college courses for credit towards both secondary and postsecondary credentials. Other credit based transition programs emphasize college preparation courses, or college level courses. The latter may or may not be recognized for college credit. The Lerner & Brand compendium

also includes research on dual enrolment linked to both four-year and two-year colleges. While the Ontario dual credit experience is focused on colleges rather than universities, the following studies examined by Lerner and Brand, nevertheless provides insight into the operation and outcomes of dual enrolment programs at different institutions.

A study of 2,760 students entering Saint Louis University compared outcomes for students with and without dual credit obtained during high school. A total of 644 students arrived with some prior college credit. Dual credit students had a 85.6% persistence rate after one year at university compared to a 69.6% rate for students with no prior credit. Overall GPA of students with dual credit (3.35) was higher than that of those without (3.12). Students with college credit prior to entering college were also found to have higher graduation rates with 68.8% graduating compared to 49.2% for those without. Primary factors identified as contributing to student success were the level of rigour in college coursework that prepared students academically while still in high school, and the improved understanding of expectations of college coursework that made the transition smoother, allowing students to feel more confident upon enrolling in college.

Similar findings were reported in a study (Eimers & Mullen, 2003) of first year students entering the University of Missouri with or without dual credit. Those with dual credit had higher first year college GPAs and also returned for a second year of college at a higher rate (89%) than those without (76%). Experiencing college curriculum, workload and expectations of college classes while still in high school was again identified as a key contributing factor to program success, as was accessibility of dual credit courses in terms of being seamlessly integrated into high school curriculum.

Research conducted by the Florida Department of Education on dual enrolment with state community colleges provides further support for dual credit in a state with a long history of supporting such programs. Over 35,000 students participated in dual enrolment courses with community colleges in 2004. In 2000-01, total rate of enrolment in Florida community colleges was 37.5% for students who had participated in dual credit, and 35.2% for those who had not. Students with dual credit earned more A and B grades and fewer failing grades than students without prior credit in subsequent courses in English, statistics and humanities, however no evidence existed that they performed better in other subjects. Dual credit students graduated from college at a greater rate and in a shorter time than students without the program. For high school graduating classes between 1994-98, dual enrolment students graduated from college at rates between 62-72% compared to rates between 53-56% for non-participants.

Research on Washington State's Running Start program makes a positive case for dual credit programs as well. A statewide program enabling students in grade 11 and 12 to take courses at Washington's 34 technical and community colleges, Running Start had 15,610 students in 2003-04 and has continued to grow. Significant findings include 71% continuing studies at the college where the high school students took their dual credit. Running Start students completed 87% of college credits attempted compared to 84% of comparison cohorts, and 86% earned a C or better compared to 83% for non participants. A 2002 study on Running Start participants found the program helped students feel more prepared academically for their college experience , giving them exposure to a broader range of courses, helping in choosing majors upon high school graduation. The program has contributed to increased postsecondary participation rates by exposing more students to the college experience, and it has resulted in a lower need for remediation in college.

Contributing factors to success include coordination between all education agencies, flexibility in delivery and accessibility of courses.

A study of dual enrolment at Georgia Technical College analyzed demographics of 17,442 participating students and tracked 1,939 who went on to enroll in college after high school graduation. During the three year time period of the study (2002-2004), 11% of the dual credit students enrolled in college compared to 8% in prior years without the program. 75% of high school administrators involved in tracking student outcomes indicated dual credit contributed to high school completion for more students. Findings also revealed that 75% of high school administrators and 60% of dual credit instructors said there was evidence that dual credit students were succeeding academically and were thereby prepared for postsecondary education. Staff involved in the programs were more likely to view them as motivating more students to pursue postsecondary education, increasing access to college for students who otherwise may not go, giving students a head start on college, and providing special interest courses that high school students may not have access to. Students were perceived to benefit from being treated more like adults in the dual credit courses and the three most common student cited benefits of the program were: exposure to college, increased options and better understanding of career choices.

Lerner and Brand observe that the studies available for review, while providing evidence of the benefits of dual enrolment and other secondary-postsecondary learning options, were characterized by limitations in data preventing them from answering a number of their guiding questions. Available data restricted analysis to describing program characteristics and reporting on student success in graduating from high school as well as participating and persisting in college. The studies did not appear to control for student characteristics prior to dual credit although this may have provided enhanced analysis and

understanding. Given the research methods and limited use of conceptual frameworks in explaining programs dynamics, it is difficult to develop an understanding of how programs produce or lead to results and outcomes.

2.10 Ontario Literature

In Ontario, where research has only begun to take place into dual credit and other transitions initiatives, efforts have been primarily focused on tracking, cataloguing and describing programs. On dual credit initiatives between high school and college, two reports prepared for the Ontario government in 2006 were illustrative of the early stages of development of the phenomenon and the potential benefits in expanding such programs for students. A report on dual credit pilot projects funded by the School/College/Work Initiative provided an analytical review of programs across the province involving 361 students, 36 school boards and 14 colleges (Armstrong, Desbiens & Yeo, June 2006). The report included details on models, issue clarification, key success factors and recommendations for the future. It was found that great diversity existed in terms of models and the types of students served. Models adopted ranged from more comprehensive models beginning with college prep courses delivered at high schools and moving on to full participation in college courses at the college campus, to a “School Within A College” model where the school board alternative school was located at the college campus integrating dual credits, to singleton programs where high school students would attend college classes fully integrated alongside college students.

Those interviewed in the study reported that a college experience with adult expectations had a positive impact on self-esteem, achievement and future direction, and students were successful in completing credits for both secondary school completion and

college credit. Several key success factors identified by the authors as important considerations for future initiatives included:

- - passionate and committed champions and exemplary teachers from the partner institutions
- - early and clear orientation to college life including expectations of adult behavior
- - a focus on practical career destinations and student support services
- - a focus on developing student self esteem
- - programming delivered in the college environment

In terms of recommendations regarding students served, the report concluded that dual credit should be available to all students across the province. With respect to the type of programs to be delivered, it was recommended that a multitude of dual credit options should be available and resources sufficient to support them. It was recommended that programs should be offered whenever possible on college campuses, and in particular dual credit programs for disengaged students. Programs were advised to utilize a variety of delivery modes and small section sizes (20 or fewer) were recommended for the disengaged.

Subsequent to this report, a research investigation into dual credit programs from a college perspective was prepared by Dr. Brian Desbiens (October 2006) for the Ontario Ministry of Training, Colleges and Universities. Building on the June 2006 review, the investigation carried forward the recommendations and continued to make the case for dual credit. Acknowledging the need to increase the number of high school students attaining college credentials in order to support the increasingly knowledge based economy, the intent was to inform the design of dual credit initiatives through the learning and experience of other jurisdictions. In a summary of research results to date, the report highlighted evidence from numerous U.S. studies that dual credit students: obtain higher grades in college; have a

higher graduation rate in high school; have better preparation for college; and thus require fewer remedial courses. Dual credit programs have become a focus for policy and investment because they have proven to be effective intervention programs in addressing the many issues and barriers students experience in attempting to make the transition from high school to college. The report listed a variety of dual credit program benefits for both students and institutions. In terms of the benefits to students, the following are identified:

Smooth the transition from high school to college

- 1) Shorten the time needed to earn a postsecondary credential
- 2) Avoid unnecessary duplication of curriculum
- 3) Create opportunities and real incentives for high school students to work hard academically.
- 4) Help high school students explore their educational interests before full time college studies

As one of the few studies assessing dual credit from a Canadian perspective, Desbiens offers an overview of how these initiatives are being approached in several provinces.

Manitoba has made dual credit a major initiative since first piloted in 2000. The primary goal is to facilitate the transition of learners – particularly adult learners from secondary to postsecondary education. The objectives of the Manitoba initiative are very similar to those described in the U.S, literature with the difference being in the emphasis on incorporating dual credit into their network of Adult Learning Centres with the intent of helping adults return to education and complete high school graduation requirements plus taking some postsecondary courses. British Columbia has taken a different strategy with the establishment of an external review agency in 1996. Rather than the notion of concurrent dual enrolment, students can seek accreditation for courses taken from external sources by

having these verified and approved by a high school counselor upon successful completion. As such, B.C. does not have dual credit programming as addressed in this study, and students make choices more independently.

In examining the Ontario context Desbiens notes that since the 1980's numerous articulation agreements between secondary and postsecondary systems have existed. What distinguishes the Ontario experience however was the absence of formal structures to facilitate common or standardized approaches and the dominance of individual agreements between institutions. During the 1990s, the reform of secondary school curriculum in Ontario was intended to address concerns over achievement and graduation rates called for greater pathways to university, college, apprenticeship and the workforce. As was revealed in Alan King's research on the double cohort that resulted from the compression of the secondary school program from five to four years, the reform was successful in increasing the percentage of students applying to university. However, it actually created fewer pathways to college; and since fewer students selected college stream courses, school boards could not afford to run them. In 2005 the Liberal government, vowing to champion education, announced a Student Success Strategy with the goal of raising high school graduation rates to 85% by 2010 from the rate at the time of 68%. Dual Credit programs were established as one of the "6 Ways" of transforming high school in Ontario.

In terms of the implementation or influence of the recommendations established in the 2006 reports on dual credit in Ontario, successive years of increased investment and program growth through the School-College-Work Initiative (SCWI) joint program between the Ministry of Education and the Ministry of Training, Colleges and Universities, demonstrate provincial commitment to the initiative. The SCWI final report on dual credit programs for 2007-2008 (April 2009) provides an overview of status and progress of the

programs provincially. In 2007-2008, 4,225 students participated in 133 dual credit programs. This represents significant growth from 2005-2006 when 361 students participated in 14 projects. Data were reported on approximately 67% of total students enrolled. The categorization of program approaches and respective distribution of students reflects the preference for college-based delivery. Three general approaches are identified as advanced standing, team taught, and college delivered. Each general approach is divided into college and apprenticeship streams. Student participation for 2007-2008 was distributed as follows:

Advanced standing – College : 10%
Advanced standing – Apprenticeship: 1%
Team taught – College: 17%
Team taught – Apprenticeship: 6%
College delivered – College: 47%
College delivered – Apprenticeship: 19%

With college delivered programming involving 66% of students reported in the data and team taught programs using some college delivery involving 23%, it is clear that the recommendation to situate dual credit delivery at college campuses is consistent with evolving practice. Of the 89% of students attempting college and apprenticeship courses, 72.4% were successful in passing the course. In terms of the types of students served, while the two 2006 reports referenced above recommended dual credit be made available to all students in Ontario, policy directives continue to support this but indicate preference should be given to disengaged students; or in other words - those most at risk of not being successful in traditional programming. Data for 2007-2008 indicated 28% of students were reported as disengaged and underachieving, down from 49% reported in 2006-07; 12% of

students were reported as having previously dropped out of secondary school, down from 17% in 2006-07. These changes are explained by the greater proportion of dual credit being offered as part of the Specialist High Skills Major initiative which may be used as more of an enrichment program thereby not including as many disengaged students. The reports' suggestion that student success teams be more involved in the selection process to ensure students in the target groups are better represented in dual credit, reflects the ongoing concern with finding the balance between providing access to all, and support for those who stand to benefit most.

2.11 Karp and Hughes: Enhancing Conceptual Models

Building on the work of Bailey and Karp, Karp and Hughes (2008) offer a more sophisticated theoretical model to better understand CBTP. The model clearly links theory of student change and college impact models to the analysis of dual credit. The authors state that despite policy makers' enthusiasm, there has been little theorizing about why CBTPs might lead to improved student access to and persistence in college. Furthermore, they make the point that any policy created to support programs, if lacking a theoretical foundation may create unintended consequences for the program and ultimately students. The study is guided by the research question: Through what mechanisms might credit-based transition programs encourage student success in postsecondary education? By conducting five qualitative case studies they describe how programs are attempting to meet student needs and facilitate transitions to college. Similar to the research questions established for the present study, Karp & Hughes are specifically interested in identifying program features that may best prepare middle and low-achieving students for postsecondary education. The model provides a theoretical rationale for policies encouraging the growth of CBTPs, as well as a guide for program implementation and evaluation.

The fundamental assumption in Karp & Hughes initial theoretical model is that CBTPs can help promote successful secondary to postsecondary transitions by preparing students for college both academically and socially. Following from this is a second proposition that CBTPs meet the academic and social needs of students by implementing multiple, complementary program features that work together to help students enter and succeed in postsecondary education. It is hypothesized that the combination of the two key features of CBTPs - college coursework and support services, promote three elements necessary for successful transitions. First, academic skills of participating students improve, second, success in a single college level course may breed increased self-confidence and motivation, thereby encouraging students to apply and enroll in college. Third, exposure to the social and procedural skills required of college students, will prepare CBTP students for college. A clearer understanding of the demands of college, coupled with academic success is likely to show students that college is a realistic goal, thus increasing the likelihood that students will apply, enroll and succeed in postsecondary education.

Based on data and analysis of five case studies testing their initial model, Karp & Hughes conclude that the conceptual model is inadequate for two key reasons. Firstly, it oversimplifies program structure and the interaction of program components which given the complexity and variety of CBTP experiences cannot be viewed in as linear a fashion as was implied. Secondly, the initial model underestimated the importance of student motivation, which may be enhanced during and by the transition program, but is also a factor in determining participation in the CBTP. Karp and Hughes offer a revised conceptual framework to reflect the complexity of student experience leading to and through CBTPs and the role of student motivation as a success factor. They also note that student motivation

may be influenced by other factors related to student characteristics which were not explored in their research.

In assessing the literature on dual credit and CBTPs relative to the research questions of the present study, the work of Karp and Hughes provides a useful framework to enhance understanding. In their effort to provide a theoretical model, they draw on insights established by others in what has been described as a College Impact perspective to examine the impact of these programs in facilitating college participation. Similar to the present study, they are interested in the relationship between program elements and student confidence and motivation. How students respond through perceptions and behaviour to the experience of interacting with new environments and expectations is a key concern. CBTPs are viewed as having important characteristics that are both academic and social; meaning curricular, co-curricular and extra-curricular aspects of the programs combine in having an influence on outcomes in terms of successful transitions to college for certain groups of students.

The five programs assessed by Karp and Hughes can all be defined as either comprehensive or enhanced comprehensive, characterized by multiple courses integrated into curricular pathways. This contrasts with the focus of the present study which deals with dual credit limited to college based delivery more along the lines of what Bailey and Karp describe as a singleton model in that the program is limited to a single course or program in a single semester. Karp and Hughes have a specific interest in the success of low and middle achieving students, whereas the Ontario context targets underrepresented groups, but remains open to all.

Karp and Hughes in recognizing the importance of student motivation and characteristics in addition to programs elements, incorporate a key factor lacking emphasis in the Bailey and Karp continuum. As articulated in the discussion of theories of college student change, College Impact theories while assigning a more prominent role to sociological factors than developmental theories dominated by psychological stage theory, recognize the need to appreciate the contextual interplay between individual and environmental factors. Institutional structures, policies, programs and services, as well as the attitudes, values and behaviours of individuals involved in the environments, are all potential influences for change. If the perspective is strictly sociological, it may not pay enough attention to cognitive and emotional readiness for intellectual, academic or psychosocial change. This distinction provides a basis for understanding how the relationship between the various factors involved may allow shorter, less comprehensive dual credit programs to be every bit as successful as more complex models. An increased density of program features may not necessarily lead to an intensity of student involvement or ultimately success in terms of increasing access and participation in college.

2.12 Conceptual Approach to Research Questions

As reflected in the research questions, data collection and analysis, the present study attempts to appreciate and understand the balance between sociological and psychological influencers in considering the perceptions of those involved in dual credit as well as program elements contributing to success. The primary research question focuses on understanding success as it relates to the impact of dual credit programs in increasing access and participation in college. Surveys and interview guides were designed to gather information on participant motivations, expectations and perceptions regarding dual credit based on their experience, to determine to what extent they are successful, what contributes to this success,

and who is best served. In analyzing and interpreting data, themes were established on the basis of theoretical considerations of college impact models as described above. While it is recognized that the complexity of program dynamics when explored through a qualitative case study make it difficult to clearly separate psychological and sociological factors, the following analytical themes were established for heuristic purposes to enhance understanding:

Theme	Conceptual Focus
Motive for participation in dual credit	Individual expectation/ perception, pre-program student characteristic
Program factors related to academic and social integration	Institutional /environmental program features
Changes in awareness/decision making related to postsecondary education	Individual, psychological
Changes in self-confidence /motivation	Individual, psychological
Postsecondary pathway best served	Sociological

The review of literature provided here has been structured to enable a better understanding of dual credit programs through an examination of relevant theory on student change as well a summary of key research activities and findings specific to these programs. As a relatively new phenomenon, dual credit research is primarily based on the U.S. experience and has been largely descriptive in nature, lacking significant theoretical rigour. While progress has been made in terms of linking existing theories of student change, there remains considerable opportunity for further research and analysis, particularly in the

Canadian context where programming and research is still in the early stages. The study of dual credit at St. Lawrence College is intended to make a contribution towards advancing understanding of dual credit given the opportunity it presents to create improved transitions from high school to college.

CHAPTER 3

METHODOLOGY

3.1 Research Problem and Methodological Considerations

In selecting and developing the methodology for the study, the nature of the research problem provided several considerations to assist in framing thinking and approach. Dual credit as an institutional strategy to achieve specific outcomes associated with public policy provides a range of interesting research questions. This is particularly true in the Ontario context given the relatively early stages of dual credit policy development and program implementation. Typical areas of interest in terms of evaluating program initiatives include analysis of inputs, process outputs, and outcomes. As demonstrated by the analytical review of Ontario programs referenced in the literature review, early research is often concerned with student participation and completion rates, description of program delivery models, and program success from a policy perspective in terms of the impact on high school completion and as a corollary, postsecondary participation. The range of potential areas of interest may be assessed on the basis of a variety of quantitative and qualitative factors depending on the specific research interest.

As articulated in the research questions of this study, the interest here is in the influence of dual credit programs on access to, and participation in college. Increasing overall levels of participation in postsecondary education includes increasing the participation rates of traditionally underrepresented groups. From a postsecondary perspective, dual credit is intended to be an effective mechanism for engaging students in formal education beyond high school (specifically apprenticeship and college), who otherwise may not participate. As student participation in dual credit has grown dramatically over the past few years, there still remains little research in terms of demonstrating a direct

relationship between dual credit participation and college participation and success. Associated with the growth of student participation in dual credit is an abundance of anecdotal evidence that the programs are successful in terms of influencing student decisions to participate in college. Beyond anecdotal evidence, as reflected in the review of dual credit literature, a number of studies focus on describing programs and tracking participation rates and academic achievement of dual credit participants enrolling in college relative to non-dual credit participants. While studies of inputs and outputs regarding dual credit student participation in college are important considerations, of equal importance is an understanding of the factors contributing to the reported success. The research on credit based transition programs generally, and dual credit as a specific sub-set, reveals a range of models characterized by varying levels of complexity. Programs are influenced by the institutional and policy environment in which they operate and therefore exhibit variation in objectives, structure and evaluation criteria. In order to fully assess and appreciate the range of factors and relationship between variables, the selection of research methodology should be influenced by an appreciation of this complexity.

3.2 Research Perspective

An interpretive research perspective combining mixed methods is adopted as the most suitable research design for the study. According to Yin (1994), the case study is a strategy for doing research which involves an empirical investigation of a particular phenomenon within its real-life context using multiple sources of evidence. As a prevalent approach within educational research, it is typically adopted to provide a detailed description of a particular situation, organization, individual or event. Such an orientation is appropriate and consistent with research conducted in the early stages of a phenomenon. The case study approach seems particularly suited to the study of dual credit programs in Ontario given the early stages of

development and research on such programs. As Merriam (1998) has observed, case studies have been the dominant approach to educational research for over thirty years as they can accommodate a variety of disciplinary perspectives in order to illuminate educational practice and enhance understanding. The present study and the research questions regarding the role of dual credit in influencing college access and participation are intended to better inform educational practice. The development of an in-depth understanding and illumination of meaning through the use of inductive processes will be augmented by an effort to situate the analysis within theoretical approaches to student transition and change as they relate to dual credit.

Given the intent to use case study research to learn about the rich dynamics and complexity of variables involved in the specific experience of dual credit in one college at one point in time, the limitations of generalizations based on the study should be acknowledged. The inability to predict or control the many variables present in any particular situation make it difficult to assert with confidence specific recipes for successful dual credit programs. In providing insight into the nature and dynamics of the specific context as a small sample of a much broader program informed by common policy, it is, however, possible and useful to identify emergent themes and patterns with more general application. The depth and detail of the case study is useful in providing opportunities for readers to advance knowledge as they apply their own conceptual frameworks and experience to the findings. This is consistent with the practical, action-oriented goal for research in education as social science to learn about and conduct educational practice.

While there is debate and variation over what constitutes validity and reliability in research of a qualitative nature compared to quantitative research, it is nonetheless important to demonstrate that care is taken in properly constructing instruments for data collection,

analyzing data, and ensuring conclusions are based on the data. Merriam (1998) suggests six basic strategies from the literature that researchers can use to enhance internal validity: triangulation, member checks, long-term observation, peer examination, participatory research, and clarifying researcher bias. This study incorporates several of these strategies. The use of multiple sources of data as well as multiple methods of data collection builds triangulation into the research design as a key method of analyzing and confirming emerging results. In addition to survey and interview data, a variety of documentary sources related to dual credit initiatives provincially and locally with respect to the specific case study have been accessible. These include ministry guidelines, policy directives, and annual progress reports. Formal and informal feedback and program assessment conducted by the local institutions involved with the study has been available to the researcher. Memos and reports from the School-College-Work Initiative as well as regional planning team documents, minutes of meetings and reports were accessible as well.

The researcher as a practitioner at the college under investigation, was also the college president at the time of the research. This presents both benefits and potential challenges to the study given the dual roles occupied by the researcher. In terms of benefits, as an employee of the college, the researcher was able to use member checks and peer examination given that numerous research informants were accessible to the researcher. Colleagues from the college, school boards and other institutions involved in dual credit provided a rich source of contextual commentary to enhance analysis. As an educator and administrator with interest and experience in Dual Credit programs, the researcher as the interpreter of data has a comprehensive understanding of the specific institutional context and brings an established view with some measure of expertise to the research. As an active participant in the development and implementation of dual credit programs with the

participating institutions, the researcher has had the benefit of involvement with this educational practice. Interacting with dual credit participants and observing behaviours both in and outside the classroom, as well as participating in orientation and debriefing sessions has contributed to the research perspective.

Challenges may potentially arise if the researcher's status as president has any impact on the involvement of survey participants and interview informants due to perceptions of position power. Survey and interview participation was intentionally designed as voluntary in order to avoid perceptions of undue influence amongst students, parents, faculty and staff. This was communicated in the letters of information distributed to participants (Appendix F). Just as the dual role of the researcher as president may have made some participants less inclined to become involved in the research, conversely it may have encouraged greater participation if the researcher's status was perceived as adding credibility to the investigation. There is nothing in the participation levels and response rates to draw any specific conclusions in this regard, however there was no shortage of interview informants volunteering, and while survey response rates from students and parents could have been higher, they were at acceptable levels and understandable given the target groups and methods of distribution.

The close relationship of the researcher to the institution investigated has advantages in terms of facilitating understanding of relationships between variables and dynamics of practice, but it also underscores the need for caution in guarding against researcher bias influencing the conclusions of the study. This has important implications for the reliability of the study as well as validity given the researcher's role as the prime instrument of inquiry. Since there is no such thing as a single reality in the social sciences, the term reliability cannot be viewed in the same way as the natural sciences where it is expected that further

studies will yield the same results. Lincoln and Guba (1985) suggest a modified view that for research of an interpretive nature, replaces the traditional notion of reliability with “dependability” or “consistency” of the results obtained from the data. The researcher’s concern should not be in having others replicate the results, but in having them concur that given the data collected, the findings make sense. In the study of dual credit offered here, it is the researcher’s intent to ensure that the results are consistent with the data, and any value placed on generalization beyond the context and parameters of the case examined will depend on readers applying it to different circumstances.

3.3 Research Context

The study examines dual credit programs offered at one Ontario college in collaboration with four area school boards. As one of 24 Ontario Colleges of Applied Arts and Technology, St. Lawrence College operates in south eastern Ontario providing a comprehensive range of postsecondary education opportunities to a mix of small urban and rural populations. Serving approximately 7,000 full-time and 20,000 part-time students annually, the college operates three full service campuses in Kingston, Brockville and Cornwall providing access to education and training to a region stretching from west of Kingston to the Quebec border and north to just south of Ottawa. An important institution in terms of community development, the college has enjoyed positive and collaborative working relationships with local school boards. In terms of dual credit participation, four school boards – two public and two Catholic have been working with the college and were involved in the study. The college has a long history of working with the local boards primarily for student recruitment purposes. Advanced standing agreements for a limited number of high school courses, giving high school students credit upon enrolment at the college have been in place since the 1980’s. Relationships have historically been strongest

between the college and its public school board partners; however since the late 1990's beginning with high school reform initiatives provincially, interaction with all boards has intensified.

One of the goals of the province's Secondary School Reform plan in 1997 was to provide students with clear pathways to college programs which in turn would relate to employment/career opportunities. It was generally accepted that post-secondary education should provide graduates with skills that lead to employment. In 1998, the School-College-Work Initiative (SCWI) was created to establish and promote innovative models of high school-college collaboration in support of these goals. A co-operative effort between the Council of Ontario Directors of Education (CODE) and the Committee of (college) Presidents (COP), sponsored by the Ontario Ministry of Education and Ministry of Training, Colleges and Universities, SCWI has focused on three broad activity areas essential to providing secondary school students with clear pathways to college and employment: increased student, parent and teacher awareness of the wide range of education, career and employment opportunities (in new and expanding sectors) offered through college programs; the development and implementation of aligned curricula between secondary schools and colleges; and increased clarity in secondary school pathways to college admission.

To achieve the purposes and outcomes described above, regional planning teams of colleges and school boards were assembled and funded to develop pilot projects and models, replicable across the province in creating a seamless transition for students from secondary school to college. Funding is provided on an annual basis to planning teams through a Request for Proposal (RFP) format providing guidance and financial resources for targeted areas of focus. The college and its partners through regional planning teams annually submit proposals to SCWI for a variety of activities, forums and programs. Dual Credits first

emerged as a priority in 2005, and have grown considerably to a reported 171 programs serving 4,500 secondary students across Ontario in 2008-2009 (SCWI Newsletter, Spring 2009). Dual credit courses are regular college courses identified by the college in consultation with school board staff as appropriate for high school student participation. Curriculum and evaluation methods are not modified for the dual credit students. College courses approved for dual credit delivery are offered to high school students through partner high schools who are responsible for recruitment. Only those dual credit programs approved under SCWI initiatives receive funding and are formally recognized by the Province. St. Lawrence College and its school board partners were early adopters of formalized dual credit programs. They were among the original 14 colleges and 36 school boards participating provincially in the first phase of the programs delivered in 2004-2005. In the first two years of funding under SCWI, the college had just over 30 dual credit students in each year. By 2006 this number had doubled and by 2008-09 the college enrolled almost 200 students in dual credit.

3.4 Fall 2008 Dual Credit Programs

The specific programs under investigation in the study are spread across the three campuses of the college. All Dual Credit programs running at the college during the 2008 fall semester from September – December 2008 were included. The fall semester was selected as it represents the largest intake period for dual credit programs. Additional program models delivered in the winter semester that were not included in the research were in the area of college taught apprenticeship programs. Constraints on the researcher's time and availability were also a factor in restricting data collection to a single semester. Limiting research to programs during a single semester is consistent with the nature of dual credit programs

offered by the college which can be characterized as singleton courses to the extent that they are one semester in length and are not part of a longer more integrated program.

Courses approved for funding at the college for the fall 2008 semester were in the ministry categories of team taught and college taught. As a further distinction, the college and partner boards describe courses offered as cohort or fully integrated. For the cohort model, an entire class comprised of grade 12 students are either team taught or taught by a college professor at the college. Students may be from the same high school or accepted from different schools or boards. Fully integrated courses are those where grade 12 students are enrolled in courses running at the college for college students with students attending alongside college counterparts. For the purposes of the case study, college taught dual credit courses will be referred to as *singleton*, and team taught courses will be referred to as *cohort*.

3.4.1 *Singleton Model – “Triple Play”*

Grade 12 students have the opportunity to register at one of the three campuses for a college course of their choice from a list of available courses. Secondary school students are blended into regular college courses based on availability of seats. Students take their college course during dedicated time from their cooperative education. Students have similar privileges at the college as regular college students. Orientation occurs prior to, and at the beginning of the course. Students have access to all college services, including counseling, remedial support, athletics and social activities. Upon successful completion of the college course, the school principal applies the credit to the student’s academic record. Upon successful completion of the cooperative education program, the student earns cooperative education credit(s) based on the actual time devoted to the cooperative education placement. Ideally the college course has the same focus as the cooperative education experience.

Students gain exposure to the college environment and programming and are able to make more informed decisions about their postsecondary education. During the fall 2008 semester, 22 different courses were made available for triple play dual credit purposes. At the start of the semester 62 students were initially enrolled across the St. Lawrence campuses as follows:

Brockville Campus	Students
Film Studies (GENE 25)	2
Psychology (POFP 102)	4
General Chemistry (CHEM 1)	1
Cornwall Campus	
Interpersonal Skills & Group Dynamics (CHIL 2025)	1
Popular Technology (COMP 33)	1
Intro to Photojournalism (JOUR 5)	3
Introductory College Math (MATH 9)	1
Criminal Justice System (POFP 101)	1
Foundational Concepts & Principles (PSWO 1000)	1
Accounting Intro 1 (ACCT 1)	2
Welding (WELD 1102)	1
Kingston Campus	
Sanitation, Safety & Equipment (CHEF 102)	1
Culinary Management Related (CHEF 103)	1
Basic Food Theory (CHEF 105)	3
Child Development I (CHIL 1004)	4

Basic Communication Skills (COMM 61)	1
Intro to Human Resource Management I (HUMA 201)	1
Intro to Marketing (MARK 201)	1
Energy Systems (ESET 140)	14
Hairdressing	1
Carpentry (CARP 107A)	15
Therapeutic Touch (CAYW 110)	

3.4.2 Cohort Model – “Focus Program”

Focus Programs are unique multi-credit packages of courses offered through local school boards that focus on a particular career or field of interest. They provide opportunities for all students through alternative learning environments, emphasizing on-the-job and project-based learning rather than a more traditional classroom setting. Through partnerships and access to external facilities and resources, programs are oriented towards “real world” projects and learning experiences that connect students to essential skills and attitudes required in the world of work. Participating secondary students attend the college from a half-day to three days per week from September until January following the high school semester. Students attend as a dedicated cohort taking classes only with other high school students. They are team-taught by a high school teacher and college professor and have the use of college facilities and services. Students may be enrolled in more than one dual credit course under this model. During the fall 2008 semester, 31 students were engaged in the following two focus programs delivered at the college in partnership with the local school board.

Photography and Culture	16 students
Law & Security	15 students

Focus programs in a variety of areas have been operating at the board for several years as alternatives to traditional programming in the sense that curriculum is integrated around a particular theme rather than offered as distinct and separate courses. Focus programs historically do not target disengaged or other specific groups but through offering a focused learning experience in one semester are designed to benefit students by allowing them to explore a specific area of interest.

3.5 Research Participants

3.5.1 Students

On an aggregate for both St. Lawrence dual credit delivery models, 93 high school students initially enrolled in 112 dual credit course registrations at the college. In terms of the data available on student characteristics at point of entry into the programs, students approved by participating high schools filled out application forms provided by the college. In addition to basic personal information, high schools were asked to provide high school transcripts for each student. Documentary research on student files revealed inconsistencies in application forms and variation in the information provided for each student. While gaps in the data pose limitations to the accuracy of some of the findings, there is sufficient information to support conclusions when the broader range of evidence from other sources is assessed as part of the analysis.

In terms of the student profile based on program application files, participants were 63% female and 27% male. This is the same gender distribution that exists for full time enrolment at St. Lawrence overall. The large majority (88%) of students were in grade 12

with the remainder in grade 11. There was some variation in age due to mature student participation, however the median age of participants was (18). High school academic performance of participants was of interest given the stated policy objectives for dual credit targeting students deemed at risk of not completing high school and those from groups under-represented in postsecondary education. Recognizing that grades do not provide a full explanation or rationale for students to be identified with a target group, the high school records of participants provided some insight into participant profiles and provided comparative data when dual credit performance and student perceptions were analyzed. Of the 93 students initially registered in dual credit courses, high school transcripts were accessed for 64 students or 69% of the overall participant population. The average high school grade average of the 64 students was 71.6% and the median grade was 72.7%

Upon completion of the semester, college grade records were generated for 82 of the initial 93 dual credit students. The 11 students not issued grade reports withdrew prior to the deadline for dropping without penalty. Students withdrawing were not disadvantaged by the decision, but continued in alternate high school courses wherever possible. With a retention rate of 88%, dual credit students for the period under review were retained at a slightly higher rate than first year college students generally. For 2007-2008, first year students at St. Lawrence college had an 87% retention rate. In terms of data available on students withdrawing, high school transcripts were available for six of the 11. The high school grade average for these students was slightly higher at 71.7% than the larger group of 64 records. All students dropping from dual credit were initially enrolled in the singleton model or “triple play” program where students are integrated into existing college courses populated by full time first year college students with the exception of the dual credit students.

In terms of student participation in survey research, the total population of students involved in dual credit during the fall 2008 semester was included in the study. With a relatively small population to draw from, all students agreeing to participate were asked to complete a survey in an effort to maximize response rates. Surveys were distributed to 76 students who were enrolled and continued to come to class at the November enrollment audit date. Out of 93 students initially registered, 11 had dropped courses and another six stopped coming and received F grades.

3.5.2 *Parents*

Similar to the student population, all parents of dual credit students had an opportunity to complete a survey regarding their impressions of dual credit programs. They were invited to participate at the time they received the letter of information and consent for their children to participate in the study. The total population of parents receiving a survey was not verified as it could not be confirmed whether students were living with parents, and if consent was not required of parents, they may not have received or considered completing the parent survey. Surveys were returned by parents of 9 students. The 9 parent surveys each accompanied a returned student survey. Given the 21 completed student surveys, this represents 43% of parents of students completing surveys participating in the study. Of the 82 students enrolled in dual credit at course completion, the 9 parent surveys represent 11% of this group.

3.5.3 Faculty and Administrators

All high school teachers and college faculty members involved in the teaching of DC programs at the college during the fall 2008 semester year were invited to be interviewed. During the semester 23 college faculty and 3 high school teachers were involved in program delivery. Interviews were conducted with all who volunteered. Interviews were conducted with representation from college faculty at each campus and from each participating school board. In addition to dual credit teaching staff, one administrator from each of the four partner school boards and college identified as being involved in the development of DC programs were interviewed to provide their views on the program. All school board participants were identified as coordinators for dual credit at the board level rather than being associated with any particular high school. A total of 16 interviews were conducted – 11 from the college and 5 from the school boards as depicted below.

Table 2

Distribution of Interview Informants

Institution	Teacher	Administrator
St. Lawrence College	Kingston Campus - 6 Brockville Campus - 2 Cornwall Campus – 2	1
Public Board 1		2
Public Board 2		1
Catholic Board 1		1
Catholic Board 2		1
Total	10	6

3.6 Data Collection Instruments

3.6.1 Documentary Analysis

The objective of documentary analysis with respect to the study was to examine all relevant sources of data and information in the public domain related to dual credit programming at St. Lawrence College for the fall 2008 semester. Documentary analysis is used to confirm and clarify the policy objective of increased access and participation in college as the central area of concern for the study. An assessment of institutional goals and commitment to dual credit provides insight into the level of consistency between institutional policy and direction. It also contributes to an understanding of the implementation and impact of dual credit at a single college by providing specific student and program data. Analysis involved an examination of relevant policy and planning documents from the government and partner institutions, as well as course materials, student records associated with dual credit and program evaluation documents. Specific documents included discussion papers and policy documents from the Ministry of Education and Ministry of Training, Colleges and Universities. Reports on dual credit activity have been commissioned by the Ministries and also by the provincially funded School-College-Work Initiative (SCWI). Other documents included college and school board strategic and operational plans as well as planning and reporting documents associated with regional planning teams of the SCWI.

Student grades are significant in providing information on academic achievement in order to address questions related to grades as an indicator of success. Documentation on grades was used to compare student achievement in dual credit with high school courses and to compare dual credit grades to grades of college students. Grades of students participating in dual credit courses contributed as well to the analysis of the types of student groups participating in dual credit and which groups appear to benefit most from the programs.

Grades and other information gathered in program records on student characteristics enriched the context and analysis of the case study when combined with data generated through surveys and interviews.

3.6.2 *Surveys*

A survey was selected as a key method of data collection in the research design in order to effectively gather input from a fairly large number of student participants and parents/guardians. The use of survey data is viewed as providing insight into perceptions, beliefs and motivations as they relate to the specific context of the study. Consistent with the research perspective of the study, including the use of mixed methods, the assessment of survey data by the researcher is primarily interpretive rather than being viewed as establishing causal explanations at the level or standards expected of purely empirical research. The objective in using the survey was to understand how the experience of dual credit at St. Lawrence College can contribute to answering the research questions of the study.

The student survey (Appendix A) administered to high school students registered in dual credit programs was intended to determine their motivation and expectations in enrolling in the program as well as perceptions and experiences in the program. Surveys and letters were distributed in personally addressed envelopes with pre-addressed return envelopes enclosed. For tracking purposes and data analysis, each survey was coded with each individual student's number, the course code and campus. The survey was based on and intended to align with an existing ministry survey used for post-program evaluation. An effort was made to "drill down" on questions in the ministry survey asking more specific questions in an effort to better understand perceptions and expectations of the experience. Survey questions were structured to address the primary research questions related to the

success of dual credit, factors contributing to success, and what student groups benefit most from the programs.

General theme areas in the surveys were consistent with concepts and studies explored in the literature review, deemed by the researcher to provide the greatest depth of understanding for the case study. Specifically, college impact models allowing for flexibility in attributing importance to factors associated with individuals as well as institutions and structures, provide a theoretical basis to appreciate the complexity and context of the case study. Astin and Tinto in the literature on student development, appreciate the need to consider the relationship between environmental factors or institutional strategies and individual motivation or involvement. Applying this thinking to dual credit research, Karp and Hughes support the importance of engagement and support strategies to enhance academic and social integration of students, yet conclude that student characteristics, confidence and motivation may be underestimated in efforts to understand the dynamics of dual credit and its reported success. Additional issues from the literature review with particular significance given the unique nature of the Ontario dual credit initiative include the influence on postsecondary decision making and the types of student groups participating and relative program benefits. These latter issues are of interest given the lack of integration between colleges and universities in Ontario relative to other jurisdictions, and the broader role and mandate of Ontario colleges as comprehensive institutions and not primarily providing a transfer function to access degree programs.

Informed by this context the surveys were structured to provide insight into the following areas in order to address the research questions:

- motivations for participation
- challenges experienced
- perceptions regarding success factors and benefits
- impact on postsecondary decision making
- benefit relative to postsecondary destination

Survey questions were reviewed by staff at the school board and college for relevance and tested on several students randomly. For parents/guardians of students in dual credit programs, a modified version of the student survey was distributed to determine parent expectations and perceptions of dual credit programs (Appendix B). Survey responses were structured according to a Likert scale with some ranking of pre-determined multiple choice answers as well. A four point scale to determine agreement or disagreement with statements was used to minimize ambiguity of responses.

3.6.3 Interviews

Interviews were conducted with administrators and faculty members from the school board and college to assess program intent, expectations, best practices and perceptions of program success in terms of meeting objectives. As a means of data collection, the interview was deemed to be the appropriate instrument as the information sought was knowledge and opinions developed through expertise and experience from the past and present. This is consistent with the primary purpose of interviews which has been described as finding out what is “in and on someone else’s mind” (Merriam 1998).

Faculty and teachers from the college and high schools identified by administrators as being involved in dual credit programs received via email letters of invitation to participate in

interviews with the researcher. The letter clearly indicated that participation was voluntary and not a mandatory requirement. They also received a follow-up email invitation directly from the researcher with a Letter of Invitation (Appendix F) and Consent Forms and a request to respond in order to arrange interviews. Interviews were conducted primarily face-to-face on the college campus by the researcher, lasting approximately 30 minutes. A semi-structured approach was used in order to more fully elicit and understand the unique ways in which individual respondents perceive dual credit programs and their impact on student access and participation in postsecondary education. In the interest of maximizing the nuances of informant perspectives, interviews did not all follow the same pattern of questioning. By using a mix of more and less structured questions, the interviews provided the researcher flexibility in engaging emerging views of respondents and new ideas.

Interviews were supported by interview guides (Appendices C,D) distributed in advance, which were designed to explore similar areas to those examined through the surveys. With consent, interviews were audio-taped and the tapes transcribed for content analysis aligned with themes emerging from questions established in the interview guide. Individual transcripts were made available to each informant for review and comment.

Consistent with the research questions of the study and literature from the review deemed most relevant to the case study from the researcher's perspective as discussed with respect to survey design, interviews were intended to gain understanding and probe informant views in the following areas:

- Understanding of the goals and objectives of dual credit
- Insight into success factors
- Perceived benefits
- Areas of improvement
- Benefits to student groups by postsecondary destination

Interviews explored similar themes to the surveys in terms of perceived benefits, success factors and the types of students served by the program. Conducted with college and school board staff, the findings offered a different perspective from which dual credit can be analyzed in comparison to perceptions and expectations of students and parents. In addition to being asked about common themes of success factors and benefits, college and school board staff were interviewed to provide input on their understanding of the goals and objectives of dual credit, and challenges or areas of improvement they for the program. This input was helpful in developing an appreciation of the diversity of perspectives on what constitutes success for the program and students, and it also provided insight into the extent to which program implementation was meeting expectations of stakeholders.

3.7 Data Analysis

Informed by the review of literature with respect to theories of student change and existing research on dual credit, data analysis was organized to provide multiple sources of input in developing answers to the research questions:

- 1) What are the perceptions of those involved in dual credit regarding program success?
- 2) What elements of dual credit programs contribute to their success?
- 3) What student groups is dual credit best serving?

The analysis was intended to assess and compare findings from the three primary sources of documentary analysis, surveys, and interviews. Triangulation of data provides rich layers of perspective to provide comparative assessment of findings against the research questions to interpret meaning and develop understanding of the dynamics and impact of dual credit.

The following table summarizes data sources and associated links to the research questions. Surveys and interviews were designed, and findings analyzed, using themes deduced from the literature as conceptually significant in contributing to the objectives of the study.

Table 3

Linking Data Sources to Research Questions

Data Source	Question 1	Question 2	Question 3
Documentary			
Policy/ Planning	X		
Course material/eval.	X	X	
Student records			X
Survey Theme			
Motive to enroll	X		
Academic and Social integration	X	X	
Postsecondary decision making	X	X	
Self confidence /motivation	X	X	
Benefit by PS destination			X
Interview Theme			
Knowledge of DC goals/objectives	X		
Success Factors		X	
Benefits	X	X	
Areas for improvement		X	
Student groups served			X

3.8 Summary of Methodology

This chapter has explained the research perspective and the mixed methods used in this study of the impact of dual credit programs in increasing access and participation in college. The choice of a case study of a single college and its experience with dual credit is intended to provide insight into factors contributing to success through the researcher's interpretation of participants' perceptions and experiences. The literature review has confirmed that a case study approach seems to be an effective way of conducting research on dual credit. It is a prevalent approach within educational research, typically adopted to provide a detailed description of a particular program, organization or event. This involves an empirical investigation of a specific phenomenon within its real-life context using multiple sources of evidence. Such an orientation is considered appropriate and consistent with research conducted in the early stages of a phenomenon such as dual credit in the Ontario context. Consistent with an interpretive research perspective, the intent is to provide analytic

generalization as opposed to statistical generalization to the extent that the benefit is in the reader applying their own meaning to the findings based on their own experience and context.

CHAPTER 4

REPORT OF FINDINGS

In addressing the overarching research question of, What is the impact of Dual Credit programs in increasing access and participation in college?. The study adopted data collection methods and developed instruments to investigate three subsidiary research questions:

- 1) What are the perceptions and expectations of those involved in Dual Credit regarding program success?
- 2) What elements of Dual Credit programs contribute to their success?
- 3) What student group(s) is Dual Credit best serving?

4.1 Dual Credit Objectives and Scope

In order to articulate the context upon which perceptions and experience with Dual Credit programs in Ontario are based, an examination of all publicly available policy and planning documents from the government, college and respective school boards was conducted. As an explicit policy initiative of the Ontario government it is useful to confirm the intended goals and outcomes and assess evidence reflecting college and school board interpretations and actions. An understanding of the parameters of Dual Credit at this level is viewed as a first step in answering the research questions.

In terms of guiding policy documents for Dual Credit, it is the Ministry of Education which produces the most specific guidelines in order to articulate the conditions under which credit may be counted toward the Ontario Secondary School Diploma. It is clearly stated that DC programs are intended to assist secondary students in the completion of their OSSD and successful transition to college and apprenticeship programs (MED October 2008). Furthermore, the primary focus is on those students facing the biggest challenges in

graduating, defined as including disengaged and under-achieving students with the potential to succeed but who are at risk of not graduating from high school, and students who have left high school before graduating. There is specific reference to targeted groups such as aboriginal, first generation, ESL/FSL, and special needs students. Guiding principles for all Dual Credit programs include partnership and shared accountability, ministry approved credit courses, appropriately qualified educators, a dedicated role for secondary teachers, provision of supports and services for student success, exchange of academic progress information, no fees to students. Dual Credit courses may take place in college and school board locations as appropriate, and may be based on advanced standing agreement, team teaching of matched curriculum, or college delivered courses with dedicated role for high school teachers. This differs from other jurisdictions that in addition to offering dual credit, offer a broader range of credit based transition programs including comprehensive models such as Tech Prep, Early and Middle College High Schools.

While the school boards in the study relied primarily on Ministry of Education directives to guide action, no such specific policy exists for the colleges from the MTCU. College documentation refers primarily to pathways and access to postsecondary education in describing goals and objectives for Dual Credit. From formal policy and pilot programs beginning in 2004 Dual Credit has grown dramatically in a short time in Ontario and now involves all 24 colleges and all 70 Ontario school boards. In the 2007-2008 academic year, 150 programs were offered serving over 4,300 students. For 2008-2009 the SCWI plans on funding 171 programs and approximately 4,500 students. (MED 2008)

At St. Lawrence College, dual credit programming began on an informal basis in 2004 with a single cohort model supporting one semester of delivery of a focus program of the local public board. Since that time dual credit participation grew across the college with

the following annual levels of enrolment involving the two public and two Catholic school boards with high schools in the college's geographic area. The college strategic plan for 2004-2008 specifically references the priority of developing pathways and providing greater access to college.

4.2 Fall 2008 Dual Credit Activity and Achievement

For the time period of the study, 93 students initially enrolled in 112 course registrations for the St. Lawrence College dual credit initiative. Students participating in the cohort model were enrolled in more than one course, accounting for higher course registrations than students. At the end of the semester, 91 grade records were issued to 82 students. Eleven students officially dropped courses by the required date. Adjusted for students dropping from the program, out of the initial 112 registrations, 76 courses were passed and 15 failed. On a student basis, 73 students received passing grades and the 15 failures were attributed to 9 students. This represents an 89% completion rate for the 82 students maintaining registration in the courses, and a 78% completion rate for all students initially enrolling.

In terms of actual grade achievement, Figure 1 provides a graph reflecting the distribution of dual credit grades. With almost half of all dual credit grades being at the "A" level, participants are performing at a higher level than would be expected from a normal distribution.

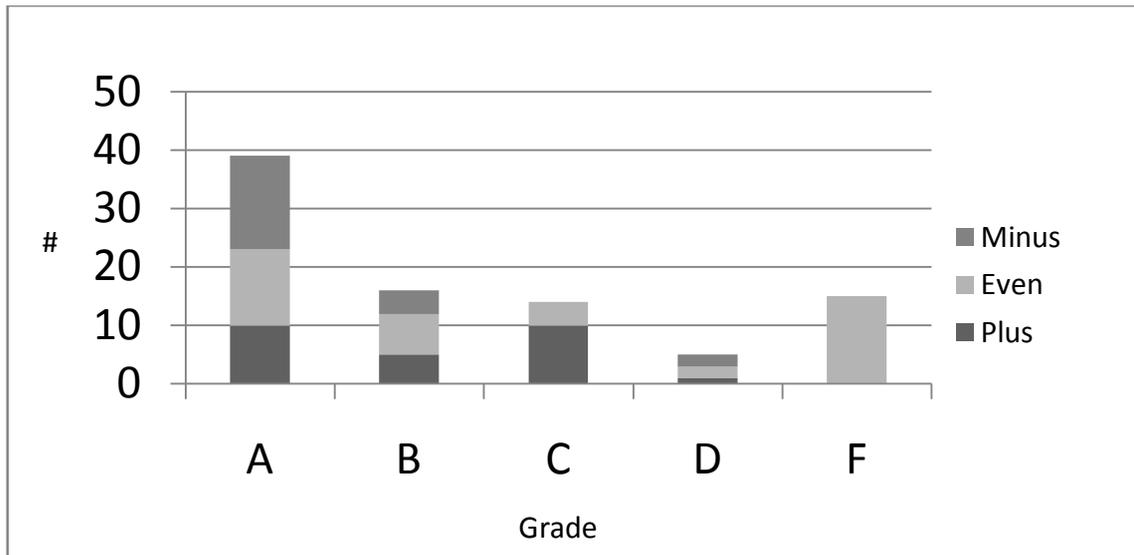


Figure 1. Dual Credit Grades Fall 2008

A comparison of dual credit grade achievement with the high school grades of the same population provides an interesting contrast which contributes to an understanding of student success in the program. Table 3 reflects the distribution of grade averages of for all dual credit participants for which high school transcripts were accessible.

Table 4

Dual Credit Participant High School Grade Averages

High School Grade Range	Number of Students	% of Total Number (64)
80% +	3	5%
70 -79%	36	56%
60 - 69%	24	38%
50 -59%	1	2.%

Whereas almost half of the grades awarded to students completing dual credit courses were at an “A” level, less than 5% of students registering in dual credit had a high school grade average of 80% or higher. While caution is required when comparing a single course

with a cumulative academic history, this confirms some of the basis for perceptions of success. It also reflects the academic characteristics of dual credit participants during the period of the study, suggesting they are primarily middle-achievers.

Table 4 provides for comparative purposes the grades achieved by dual credit students grouped according to the overall population issued grades, survey respondents, and the two program models of cohort and singleton. The table excludes 11 students who formally dropped the dual credit course(s) and were not issued grade records, but does include those who failed their course(s).

Table 5

Dual Credit Grades by Delivery Model

	Total Fall 2008	Singleton	Cohort	Survey Respondents
Number of grade reports	91	44	47	21
Grade average	70.5	71.2	66	66.5
Median Grade	74.5	73.5	77.5	73.5

The grade results show the median grades of cohort students higher than singleton participants, by 4 percentage points. Conversely, singleton students had a higher average dual credit grade than cohort participants by over 5 percent. While more cohort students tended to have higher grades compared to singletons, there was also a comparatively higher percentage of failures amongst the cohort group affecting overall grade averages. The 11 students dropping from dual credit courses all began in the singleton programs, and while there is no documentation as to the reasons for dropping, difficulties in scheduling and getting to class were reported in the surveys and interviews and may be a factor. Other

factors will be discussed in the analysis of findings related to characteristics of the delivery model.

College grade records for the fall 2008 semester provided data on both dual credit grades and the grades of college students in the same courses. Grade averages were compared for the 22 distinct courses that had dual credit student participation. For half of the courses, dual credit students had higher average grades than college students in the same courses. Three courses had the same average grade for dual credit and college students, and the remaining eight, or 35% of courses had college students achieving higher average grades than dual credit students. Table 5 reflects that on an aggregate basis dual credit students had slightly higher average grades than college peers and significantly higher median grades.

Table 6

Dual Credit and College Grades for Same Courses

	College	Dual Credit
Average grade	69.4	70.5
Median grade	69	74.5

4.3 Survey Findings

For purposes of analysis, survey findings are presented both on an aggregate basis and are broken down by the two primary models that the Dual Credit programs can be characterized as based on the literature. For the singleton model which inserts high school students into a single college course running on the college campus as part of regular full time college programming, 13 surveys out of a population of 50 were returned. From the cohort model which has a group of high school students taking a dual credit program on the college campus but with no co-mingling of college students, 8 surveys were returned from a population of 26.

Parent surveys were completed by nine parents. Parent surveys were distributed through students and were accompanied by consent forms required by parents for students who were minors at the time of the survey. The low response rate may be attributed to challenges in surveys reaching parents. The total population of potential respondents was uncertain as students not requiring consent may not have given the survey to parents. Also there was no way of determining if all students had parents or guardians. Nevertheless one parent survey was distributed with each student survey for a maximum potential population of 76. Parental survey results are reported in the findings recognizing that they are not intended to provide statistical evidence, but do provide some insight into the perspective of parents as a stakeholder group experiencing Dual Credit at a different level than students and staff.

4.4 Student Motivation for Participation

Survey respondents were asked to determine motivations to participate relative to stated objective by the government. Respondents were given 5 statements to choose from and asked to rank in order of importance which one most applied to them. The statement ranked the highest was deemed to be the one receiving the most first and second place rankings. On the basis of 21 student responses the statements were ranked as follows:

- 1) I can experience the college environment – 9 first, 5 second
- 2) It gives me credit at the college – 8 first, 4 second
- 3) It gives me something new to experience – 6 first, 3 second
- 4) I can experience college academic standards – 5 first, 4 second
- 5) It gives me different course options for high school – 1 first, 2 second

In the smaller sample of parent responses the top ranked response was the same as the student response and second place went to “experience college academic standards”. The statement on getting credit at the college was ranked third by parents..

4.5 Challenges Experienced with Dual Credit

Students and parents were next asked to rank in order of significance any challenges experienced in the program. A similar method to the first question of adding first and second choice items was used to rank responses. On the basis of 21 student responses the statements were ranked as follows:

- 1) Higher academic standards – 7 first, 3 second
- 2) Different teaching style – 4 first, 4 second
- 3) Adjusting to new environment – 2 first, 3 second
- 4) New terms and language – 2 first, 3 second
- 5) Fitting in with other students – 2 first, one second
- 6) Getting to class - 2 first, one second

The parent sample ranked slightly different:

- 1) Different teaching style
- 2) Adjusting to new environment
- 3) Higher academic standards

4.6 Benefits and Success Factors

In order to understand participant perceptions more fully regarding benefits of the experience and program elements contributing to success, they were provided a series of statements to which they were asked to indicate their level of agreement. Through the use of a four point Likert scale they were asked to respond on a scale from agreement – 1 to disagreement – 4. Students were asked 12 questions and parents 11. After gathering and

tabulating survey results, the questions and corresponding responses were clustered into themes for analytical purposes. As described in the discussion of methodology for the study, themes were deduced from an assessment of the literature on student development and dual credit research to determine the concepts most suited to assessing the research questions from the researcher's perspective. College impact models of student development emphasizing the dynamics and relationship between institutional or environmental factors and individual characteristics appear to offer the greatest potential in interpreting data and developing understanding of the dual credit experience. Astin, Tinto and Pascarella provide conceptual frameworks that have been applied to dual credit by Karp, Bailey, Hughes and others to extend thinking and research on dual credit. Themes established for conceptual consideration of the data were:

- Academic Integration
- Social Integration
- Awareness / Decision making
- Confidence / Motivation

4.7 Academic Integration

The following statements from the student survey are linked to an indication of academic integration:

5.1.b) I have benefitted from the curriculum taught in the course.

5.2.d) My academic performance in the course is better than in my regular high school courses.

5.2.e) The course has been a positive academic experience for me.

4.7.1 Benefit from Curriculum (5.1.b)

On the first statement regarding benefitting from the curriculum, there was a high level of overall agreement with 11 students indicating strong agreement and 10 agreeing. There was no disagreement from students on this question. The responses to this question were consistent for both program models.

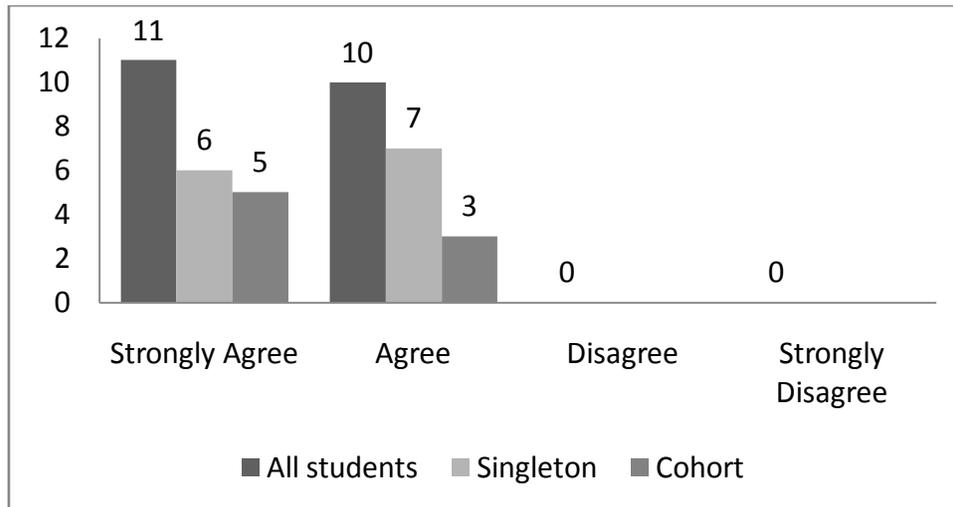


Figure 2. Question 5.1.b. I have benefitted from the curriculum taught in the course

4.7.2 Performance at college vs HS (5.2.d)

For the second statement regarding comparison of academic performance in the college course to high school performance, there was more of a mixed reaction with more students (11) agreeing with the statement and 10 disagreeing. In terms of the two delivery models there was only a slightly higher level of agreement expressed by the singleton group compared to the cohort.

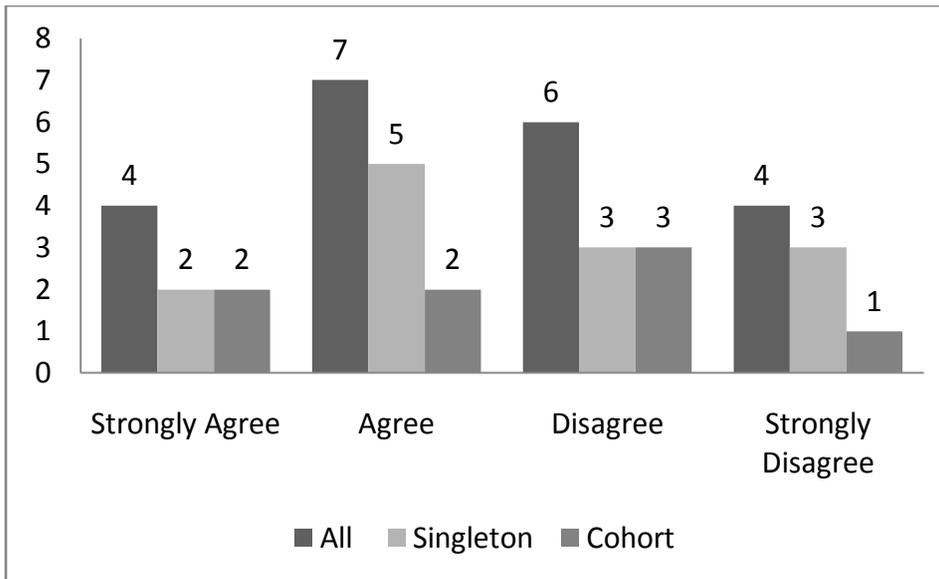


Figure 3. Question 5.2.d. My academic performance in the course is better than in my high school courses

4.7.3 Positive academic experience (5.2.e)

The final statement related to academic integration regarding whether the course was a positive academic experience received unanimous agreement from all students with 14 strongly agreeing and seven agreeing. The results were similar across program models and for parental responses as well.

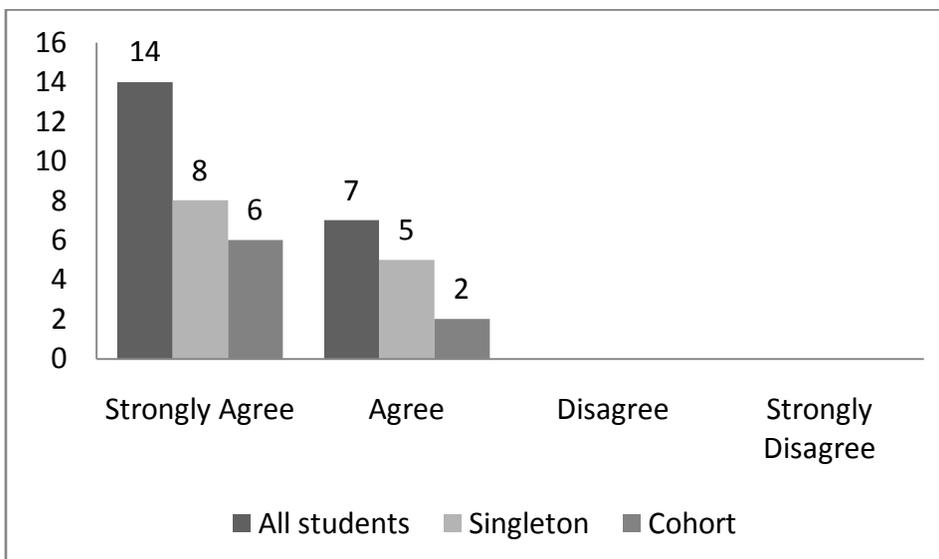


Figure 4. Question 5.2.e. The course has been a positive academic experience for me

4.8 Social Integration

The following statements from the student survey are linked to an indication of social integration:

5.1.a) I have benefitted from opportunities to experience college life outside of the classroom.

5.1.d) College students were positive role models.

5.2.f) The course has been a positive social experience for me.

4.8.1 Benefit from college life (5.1.a)

On the statement concerning the extent to which students were participating and benefitting from college activities and services outside of the classroom, there was mixed reaction with 2/3 agreement and 1/3 showing some level of disagreement. There was slightly higher agreement with this statement from the singleton group at 69% compared to 63% agreement from cohort respondents.

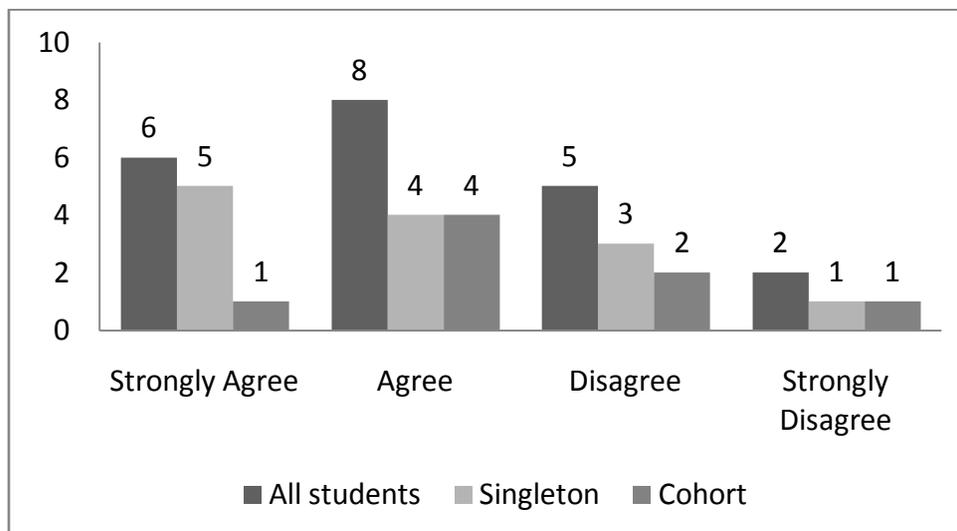


Figure 5. Question 5.1.a. I have benefitted from the opportunities to experience college life outside of the classroom

4.8.2 College students as Role Models (5.1.d)

Regarding the statement on student views of college students as positive role models, there was more disagreement than agreement with 12 students disagreeing and nine students agreeing. There was a higher level of disagreement with the statement from the cohort respondents with 38% disagreeing compared to 46% or just below half of the singleton student respondents.

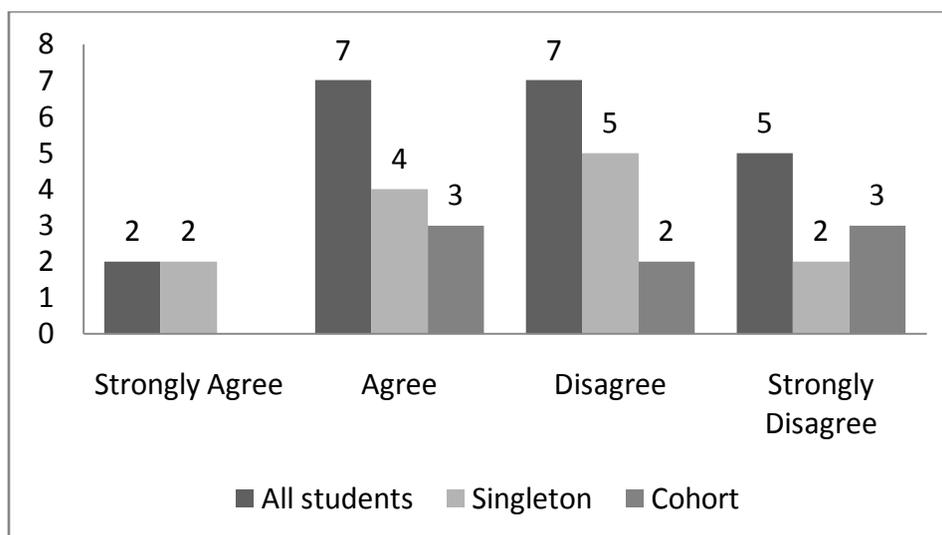


Figure 6. Question 5.1.d. College students were positive role models

4.8.3 Positive Social Experience (5.2.f)

With respect to the statement on whether students perceived the course as a positive social experience, there was greater agreement than disagreement. Of a total of 15 in agreement, 11 strongly agreed. There was a significant difference in agreement on the statement between respondents from the two delivery models. All students in the cohort group strongly agreed with the statement, compared to 54% of the singleton group indicating some level of agreement.

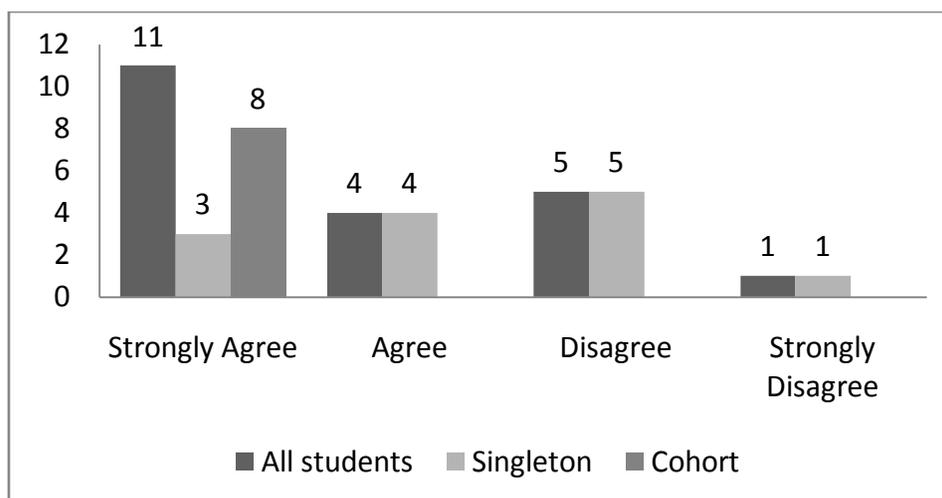


Figure 7. Question 5.2.f. The course has been a positive social experience for me
In response to the same question on the parent survey only one respondent indicated that the dual credit program was not a positive social experience for their child.

4.9 Awareness / Decision Making

The following statements are related to the extent to which participation in Dual Credit had an influence on student awareness of college and their decision making in terms of considering college as a postsecondary destination.

5.1.f) I am more likely to attend postsecondary education as a result of the course.

5.2.a) I have a better understanding of college than I did before taking the course.

5.2.b) I am more comfortable in making a decision about my future beyond high school since taking the course.

4.9.1 *More likely to attend Postsecondary (5.1.f)*

For the statement regarding the impact of the course in terms of positively influencing the decision to participate in postsecondary education, there was a high level of agreement with 17 students agreeing and 4 disagreeing. The responses by group indicate variation in that 100% of the cohort students strongly agreed with the statement compared to 69% of the singleton students.

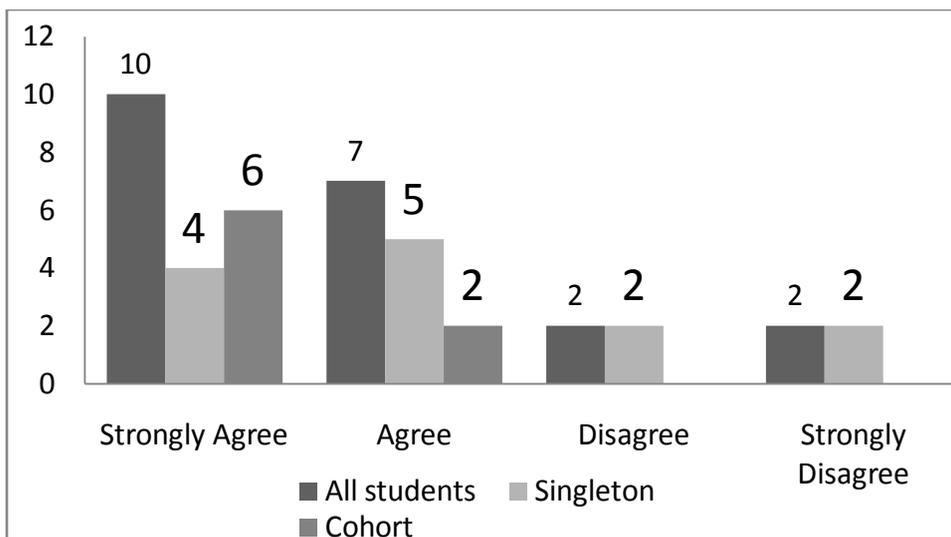


Figure 8. Question 5.1.f. I am more likely to attend postsecondary education as a result of the course

For the same question on the parent survey 78% of respondents (7 out of 9) agreed with the statement.

4.9.2 *Better understanding of College (5.2.a)*

In terms of the statement about improvement in student understanding of college as a result of the course, there was a high level of overall agreement with 2/3 of respondents indicating strong agreement with the statement and only one response showing disagreement. Results were very similar across both groups with 100% of the cohort group in agreement and one respondent in the singleton group indicating disagreement with the statement.

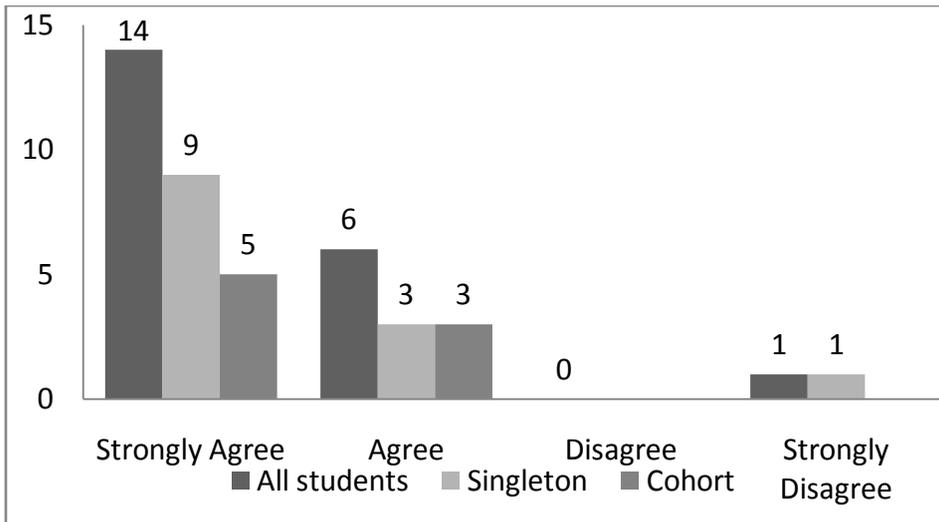


Figure 9. Question 5.2.a. I have a better understanding of college than I did before taking the course

4.9.3 Comfort in decisions about the future (5.2.b)

On the third statement related to Awareness/Decision-making gauging increased comfort in decisions about the future as a result of the course, there was a high level of agreement with 18 respondents agreeing. Levels of agreement were consistent across groups with 85% of singleton and 88% of cohort respondents agreeing with the statement. Parental agreement on a similar question (5.1.d) was 100%.

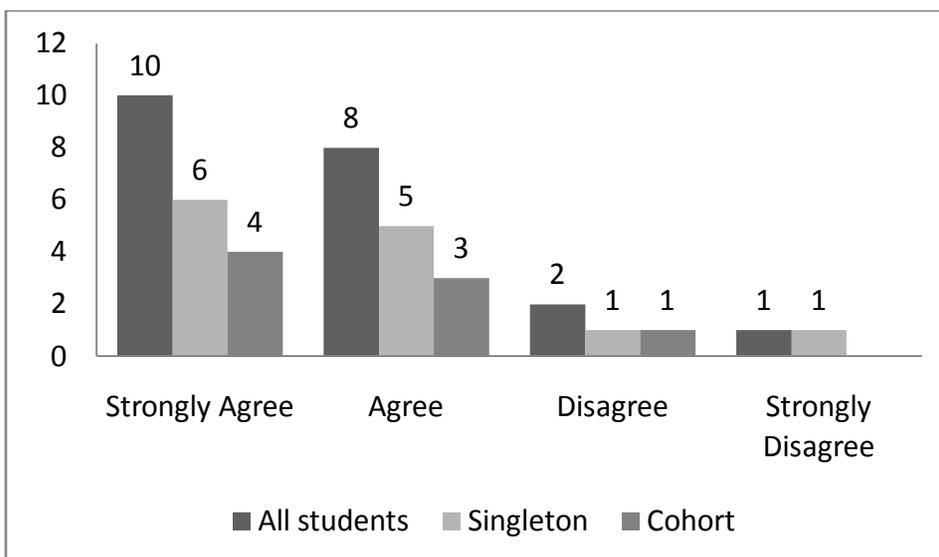


Figure 10. Question 5.2.b. I am more comfortable in making a decision about my future beyond high school since taking the course

4.10 Confidence / Motivation

The following statements are intended to reflect the extent to which students have experienced an increase in self confidence and personal motivation as a result of the course.

5.1.c) I am more motivated to finish high school as a result of the course.

5.1.e) I was treated more as an adult by the teachers.

5.2.c) I have more confidence in myself as a result of the course.

4.10.1 More motivated to finish high school (5.1.c)

On the statement regarding course impact on motivation to complete high school, 2/3 of overall student responses were in agreement with most strongly agreeing with statement. In terms of responses by program model there was some variation in that just slightly over half (54%) of the singleton student respondents agreed while 88% of the cohort group indicated they were more motivated to finish high school as a result of Dual Credit.

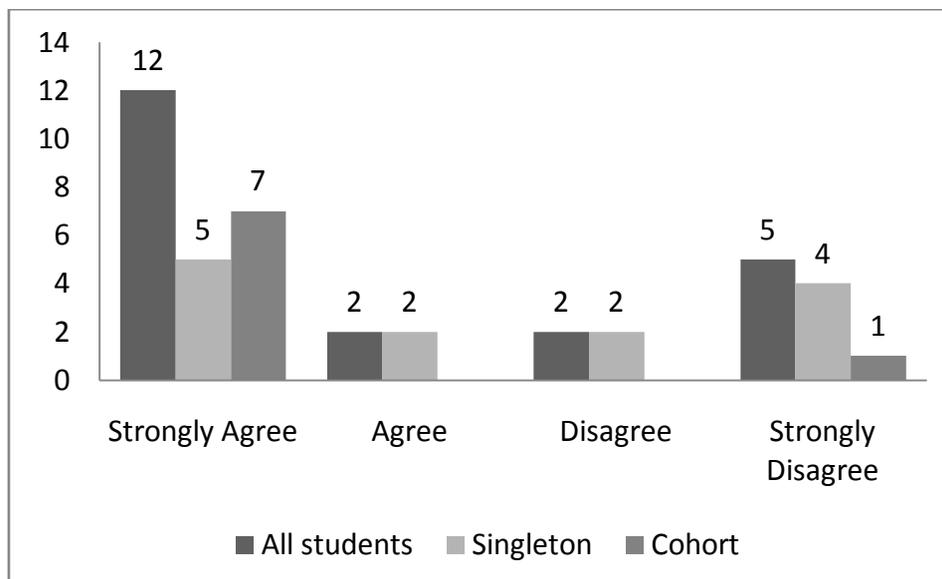


Figure 11. Question 5.1.c. I am more motivated to finish high school as a result of the course

On a related question on the parent survey, 6 out of 8 respondents believed Dual Credit would enhance their child's success in completing high school.

4.10.2 Treated as an adult (5.1.e)

The statement exploring students' perceptions of being treated more as an adult by the teachers in the program received a high level of agreement with almost half the respondents agreeing strongly and 4 indicating disagreement. In terms of the responses by program model, there was a fair degree of consistency with 85% of the singleton students and 75% of cohort students agreeing with the statement.

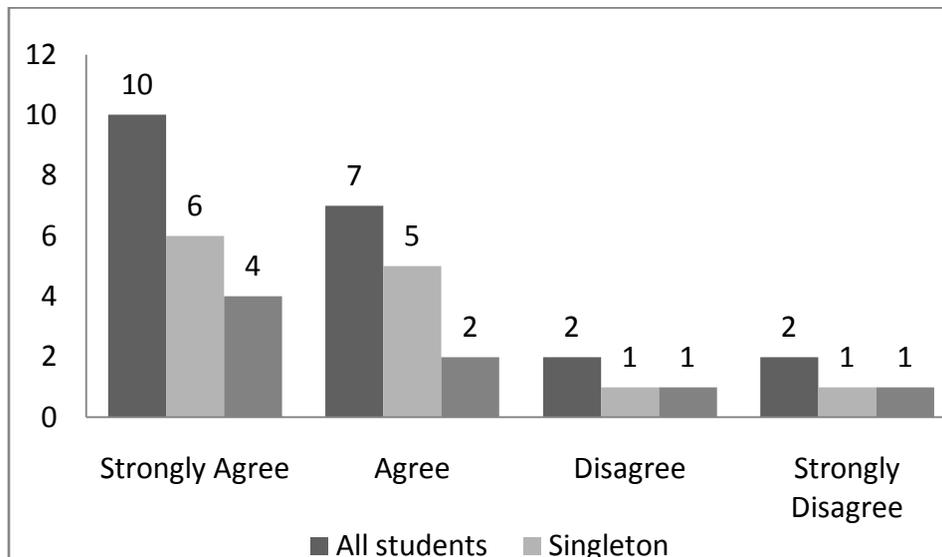


Figure 12. Question 5.1.e. I was treated more as an adult by the teachers

4.10.3 Increased confidence (5.2.c)

In response to the general statement regarding increased confidence as a result of the course, 15 respondents were in agreement and 6 were in disagreement. The level of agreement was fairly similar between the two models with 69% of singleton and 75% of cohort students agreeing with the statement. Responses for a similar statement (5.1.e) on the parent survey were 100% in agreement.

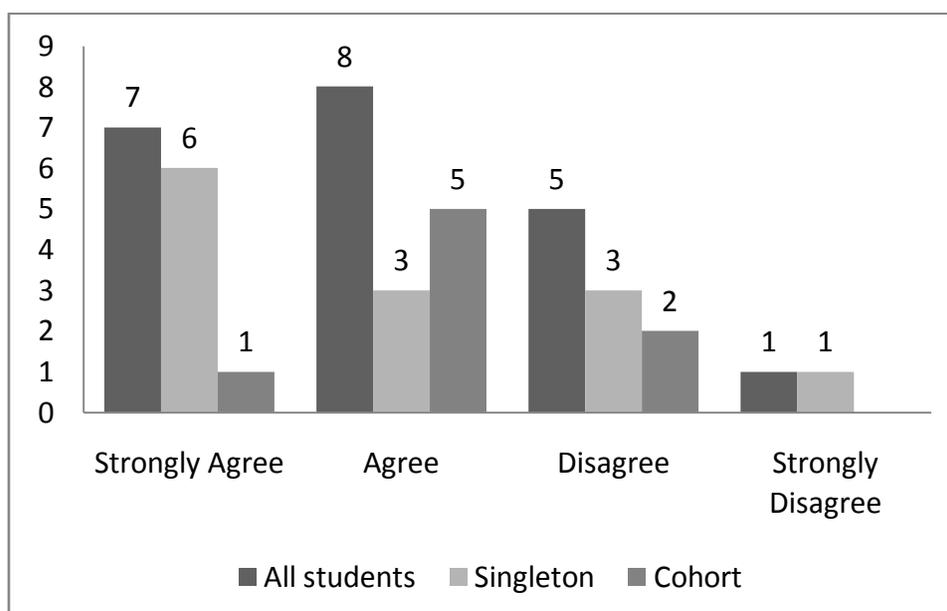


Figure 13. Question 5.2.c. I have more confidence in myself as a result of the course

4.11 Who Benefits from Dual Credit

In order to determine perceptions regarding the type of student most likely to benefit from Dual Credit programs, students were asked to rank four categories of students: 1) all students, 2) university bound, 3) college bound, 4) workplace bound. Students were not guided in terms of specific criteria to base their response on, and therefore were providing an opinion based on personal experience of participating in the program. Categories were ranked based on the number of first and second place rankings assigned by students. Findings were as follows:

- 1) College bound – 9 first, 3 second
- 2) All students – 8 first, 2 second
- 3) Workplace bound – 3 first, 5 second
- 4) University bound – 2 first, 3 second

College bound students received the most first place rankings and university bound students received the fewest first place rankings as the groups benefitting from Dual Credit.

The responses indicate that students surveyed believe Dual Credit has benefits for all students but particularly those who are college bound.

4.12 Aggregate Survey Results

In terms of aggregate survey results, a scale of agreement provides a graphic comparison of relative levels of agreement with statements from the student survey between the two dual credit program models. It also reflects the level of variation between the groups on specific questions. The diagram reveals the highest level of agreement from all students on two statements related to academic integration and two statements related to improved awareness and decision making with respect to postsecondary education. More specifically there was a high level of consensus between students in each delivery model in terms of their agreement that they benefitted from the dual credit curriculum, that it was a positive academic experience, and that they had a better understanding of college and were more comfortable in making decisions about their future as a result of the course. The strongest disagreement in overall student responses was expressed towards the statements that academic performance at college was better than high school, and that college students were positive role models. The finding on student perceptions of their academic performance relative to high school will be discussed further in the analysis of findings and at the time of the survey was not informed by final dual credit grades. It may have been influenced by any feedback received through formative assessment on a formal or informal basis while the course was in progress and the students personal perspective on the experience.

As the scale of agreement indicates, there was convergence, or similarity in response between the two student groups for questions on which they both agreed and disagreed. These were primarily in the areas of Academic Integration and Awareness and Decision Making. The greatest amount of divergence expressed between the two groups appeared for

statements on: greater likelihood of attending postsecondary education as a result of the course, the course as a positive social experience, and students being more motivated to finish high school as a result of the course. For all three statements there was significantly higher agreement expressed by the cohort group than students in the singleton group of respondents. Figure 14 provides a graphic representation of the comparative scale of agreement by student group with respect to the survey questions.

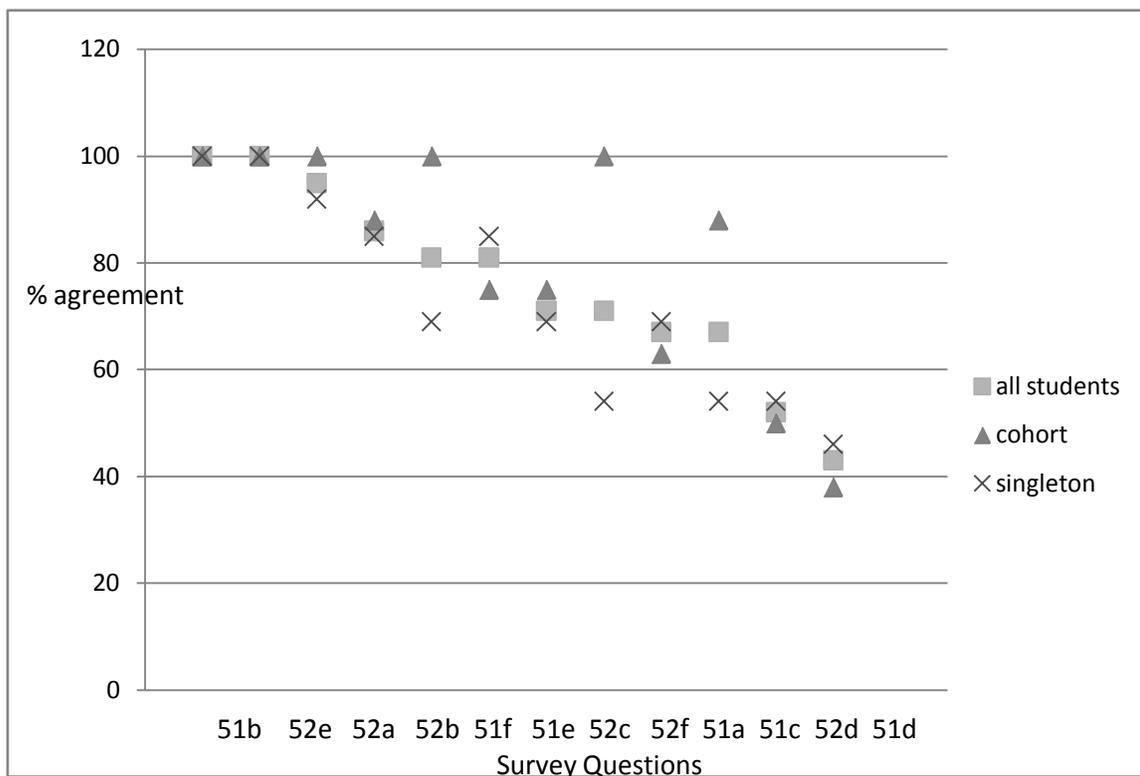


Figure 14. Comparative Agreement by Student Group

4.13 Parent Results

In terms of reporting findings from the small number (9) of returned parent surveys, it can be observed that for survey questions seeking level of agreement or disagreement with statements regarding dual credit, parents generally reported higher levels of agreement than students on similar questions. In comparing this component of the student and parent

surveys, there were 6 questions common to both and 4 distinct questions asked of parents.

Table 6 provides a summary comparison of levels of agreement on similar questions.

Table 7

Comparing Student and Parent Agreement

Statement	Question #	% agreed
More likely to attend postsecondary education.	Student: 5.1.f	81%
	Parent: 5.1.f	78%
Enhance success/more motivated to finish high school.	Student: 5.1.c	71%
	Parent: 5.1.c	75%
Helps with postsecondary decision making	Student: 5.2.b	86%
	Parent: 5.1.d	100%
Improved student confidence	Student 5.2.c	71%
	Parent 5.1.e	100%
Positive academic experience	Student 5.2.e	100%
	Parent 5.2.c	100%
Positive social experience	Student 5.2.f	71%
	Parent 5.2.d	89%

The table below summarizes parental levels of agreement with statements unique to their survey.

Table 8

Parent Survey Responses

Statement	% agreed
5.1.a Course will prepare child academically for postsecondary education.	89%
5.1.b Course will improve child's ability to adapt to postsecondary education.	89%
5.2.b Higher value placed on college as a result of course.	78%
5.2.e If I were to do it over again, I would still want my child to participate.	100%

4.14 Interview Findings

In order to interpret interview findings to address the research questions of the study, responses were reviewed and assessed for common threads or patterns. The interviewer was looking for patterns and consistency in responses as well as any differences in understanding or perspective and any variation between high school and college respondents. A number of questions were designed to elicit responses regarding perceptions of program success and contributing factors. As outlined in the research methodology, questions focused on the following areas:

- Understanding of the goals and objectives of dual credit
- Insight into success factors
- Perceived benefits
- Areas of improvement
- Students who benefit by postsecondary destination

In order to represent each of the four area school boards partnering with the college, a staff member from each board was interviewed with two interviews done from the board

working with the college's primary campus. This public board had the most students participating in Dual Credit and is the board with the longest history in working with the college on Dual Credit. School staff were identified by board administrators as the most appropriate individuals to comment on Dual Credit initiatives. All were teachers on assignment to provide Dual Credit program coordination between the college and their respective boards. For the college, 11 interviews were conducted with representation from each of the three college campuses delivering Dual Credit. Each of the two delivery models were represented by the teachers interviewed as well. College informants were teachers directly involved in Dual Credit course delivery. The tri-campus coordinator for the college was also interviewed. In terms of reporting interview findings, quotes from the interviews will be attributed to informants using the following identifying codes:

School Staff - (SS)

School Teacher - (ST)

College Staff - (CS)

College Faculty - (CF)

4.15 Summary Findings

While there was a high level of congruence in the perceptions and expectations articulated by all interview participants, it was also clear that perspectives were shaped by their respective roles and responsibilities. School board staff, for example, were able to offer insight based on observed student behaviour back in high school during the Dual Credit experience, while college staff spoke from a context that provided closer first hand observations of the student experience inside the classroom during Dual Credit course delivery.

From all those interviewed there was understanding and support for Dual Credit as an effective means of enhancing student success. From the high school perspective, the program was particularly beneficial in terms of the effect on low to middle academic achievers and so called disengaged students with a lack of current or future focus. The benefits were consistently described as enhancing confidence and motivation, and supporting decision making regarding postsecondary education. School board staff spoke of the fresh start of a new environment and a growth in maturity as students rose to the challenge of the college experience. They also reported that students reacted well to college expectations which treated them more like adults, providing more independence and encouraging greater responsibility. The perceived attitudinal changes were viewed as contributing to greater focus on high school completion.

Both school board and college staff reported the benefits of not only “trying on” the college experience generally, but also providing students the opportunity to explore a particular subject area in which they may have a career interest. This was seen as contributing to better decision making on career choices and similarly whether college provided the correct pathway for the student. The combination of having the college experience demystified through direct participation and achieving academic success in a college course was viewed as a key factor in the view of dual credit as a bridge between high school and college.

College interviews placed a greater emphasis on the challenges in dealing with student adjustment to different expectations at college compared to high school. Comments here related to both a lack of adequate academic preparation for particular subject areas and different practices with respect to assessment and evaluation. While the benefits of having students step outside their comfort zone were acknowledged, the risks to students if they

cannot adjust successfully were commented on as well. It was also noted that although additional support was available for dual credit students, part of the success of the program was viewed to be student ability to blend in and perform alongside regular college students without being singled out for special attention.

4.16 Specific Findings

4.16.1 Goals and Objectives

Informants were asked about their understanding of the goals and objectives of Dual Credit to ensure perceptions of success were based on a common understanding of program intent. All were able to articulate views of Dual Credit consistent with Ministry objectives of contributing to high school completion and postsecondary participation, although there was some variation in the points of emphasis. College participants often reference objectives associated with greater college awareness and high school participants place more emphasis on better understanding the spectrum of pathways and the benefits to disengaged students. Interview respondents consistently spoke of Dual Credit in terms of an experience intended to support improved transition from high school to postsecondary.

I think the goals and objectives of the program are to open postsecondary pathways for students, and they can see that there is more than one traditional pathway, which has been university, and the pathways of apprenticeship and college are both viable first choice career options, and particularly for students whose families have not participated in postsecondary, for students who are disengaged, or for those who don't see themselves as capable of going on to postsecondary education. Dual Credits provide that opportunity for them. (ST)

Comments from a school board consultant refer to engaging students through exposure to college, and more generally non-traditional learning experiences to keep them motivated:

Certainly exposure to college and more authentic exposure to college than just your routine trip in and out with an organized open house or whatever, but more importantly from our experience at the school board and working with schools, is engagement of students, so looking at programs and how to expose students who might not otherwise have any exposure to college or very limited exposure, but then also engage students in learning pursuits that are outside the norm or outside tradition that might keep them working towards graduation or help them get focused so they can feel graduation is a possibility and or that there is something after graduation that can keep them moving as well. (SS)

Comments from college professors address creating awareness of college and the value of clarifying student expectations in order to facilitate successful transition to college:

...one is to give the high school students the ability to understand what college life is all about, how a college program actually works...the different teaching styles, and it's also a very good experience for young people to have an understanding of what postsecondary education is going to be and the different changes they are going to have to expect. (CF)

Well I think it [the objective] is partly to foster the transition to college so it brings students from high school environments into our environment here, gives them a taste of what it's like to actually do program work at the college level. (CF)

Commentary also referenced the value of exposing students to college even if it contributes to a decision not to come to college or a particular program:

I think the goal would be to give the high school student the exposure to the college environment which I think is great, so kind of encourage them to end up here if that's what they decide to do, or in a case that I am recently dealing with, a student has decided that accounting is not a career path for her – and that's good too. (CF)

4.16.2 Perceptions of Success

In terms of perceptions of success, there was unanimous agreement from all respondents that the Dual Credit programs were a success. While there was consensus on the perceived success, a variety of benefits were identified by the informants.

Absolutely... In speaking with students...many who were involved thought that perhaps they wouldn't be successful in a college level course and they were.

(SS)

Outstandingly yes! We have not had a student who finished the program fail. We have had occasionally a student who had to withdraw from the program for medical reasons, but never as a result of disliking the program they selected. Never as a result of not having a positive experience at the college and every student that we have had involved in dual credit has been successful. Quite often we see some of the highest marks in the class when they are in a group of regular college students. Just the students who have never thought that they were going to go anywhere, do anything, and at most hoped they would get a secondary school diploma have benefitted.(SS)

Comments from college staff are in agreement that dual credit is successful, however it is evident there are differences in how they define success. Success may be viewed as academic success, greater confidence to finish high school, or enhanced awareness and likelihood of attending college:

Oh I think it is [successful]. I have three students in it and all three have indicated that they want to come into ECE (college diploma program). (CF)

They are [a success] for my students...They are in the top 5 at least, if not the top 3 in the class. They are very motivated, creative – they're interested in it right from the start...and their work is comparable if not better in some cases (than college students) (CF)

Three out of four students without this opportunity may not have picked up these credits which will... give them a high school certificate and maybe give them a taste for education where they say you know what, I can do this and I think I am going to get a diploma. (CF)

4.16.3 Success Factors

Further questions were designed to probe the perceptions of success deeper in order to better understand success factors or elements of the programs that actually make them successful. Many of the responses to the question of contributing factors spoke to the different environment offered at the college. In this sense environment was described as the experience of being in the different surrounding of the college as an institutional alternative to high school. Commenting on the benefits of having courses delivered on the college campus, school board staff observed:

That seems from an engagement perspective to really work well with high school students. We always say novelty is half the battle with teenagers in particular. We know it makes a big difference for them. (SS)

We have heard about the model where the college teacher comes to the high school...and we could very easily do that, but then it just becomes a transfer of curriculum, and for us it's the whole experience. I think what our students like is that it is really differentiated in that they get the experience of coming into this building. It's a transition thing. It's a social thing. (SS)

It was observed that part of the benefit of the new experience was that dual credit provides an opportunity for students to choose and explore courses they are interested in as possible career destinations.

All of a suddenthey [students] are starting to take a course that fits with their interest at a postsecondary level. It's a lot more fun than taking something that they don't have any interest in. So right off the bat they get

turned on; and if you can give them a course they are committed to, they are committed to it. That's what I think is one of the success factors.(SS)

Comments from interviews also highlight that part of the new experience is the different relationship between students and teachers. Elements related to relationships cited as success factors included the benefit of new beginnings and the students being treated more as adults.

I think for some students, it's a fresh start. For struggling students who may not have had the most positive experience in school to date, this is a fresh start. These (college staff) are new people who don't have any preconceived ideas of, you know- the good, the bad, the ugly. I think they are seen as a student with a clean slate. They perceive themselves that way. (SS)

We don't babysit them as much [as high school] but I think they see that we are now expecting them to be more adult. You [students] come to us if you have problems.. but you have to take the initiative. They feel a little bit more in control. They are not being hounded and being watched over quite the same way as they are in high school. It gives them a sense of being treated as an adult. (CF)

Taking a college level course was reported to be a success factor for students in dual credit as it was seen as challenging students with new expectations requiring them to perform according to different standards.

...they [students] are failing high school credits, but then they come to the college, it's a harder program, it's more demanding, it's more work that they have to do and they have to juggle two timetables, and suddenly they are getting 80s and 90s. They come back to high school and their marks change because it's a psychological shift – I really am quite capable of doing this. (SS)

Many informants made reference to the effect of dual credit on building student confidence in their ability to succeed. Increased confidence was also reported as being a key factor in increased motivation. When probed to understand what factors contribute to enhanced confidence there were various responses, however the most clear sign of success was defined in terms of academic performance. Without knowing anything about motivation levels of students prior to program entry, what is known is that all participating dual credit students were motivated to enroll in the program and in experiencing success in this new postsecondary environment, their confidence and motivation levels likely increased.

Interview feedback revealed interesting comments on the risks to student success if the program or experience was too difficult on the student or proper supports were not in place. Placing greater demands on students who may not have a strong record of success or motivation could potentially have a negative impact on their performance, proving counter productive to the stated goals of the program, leading to less likelihood of going on to postsecondary education.

We had some [dual credit] students that are identified as having an IEP. So for those students we need to work on a little more support from college staff...because I know that the supports that those students are given in high school varies a lot from what those students would receive at the college level. A lot of them (college faculty) say that you must self-advocate...but most of them are not ready for that. (SS)

I think the folks in the middle are going to go with it however it works. I think the ones that are the high achievers probably are finding high school boring....The ones who are low [performing], I think it is good to expose them, so that they know that if they can just make it through, there is something open to me. I think the danger however, would be if they don't experience success, then they will feel they can't do it. (CF)

4.16.4 Areas for Improvement

Another way of assessing factors contributing to success was through asking questions about areas for improvement in the programs. It is assumed that areas identified for improvement are those perceived to be things that if improved would have an impact on program success in achieving intended outcomes.

Primary themes identified as areas of improvement were student support, orientation / preparation of students and faculty, and coordination between high schools and college. References to student support were mainly in the context of the program model where students were immersed in college courses alongside college students. It was perceived that some of the Dual Credit students would benefit from additional support to adapt to new expectations, delivery modes, curriculum or assessment methods. At the same time it was acknowledged that one of the elements of success for the program was the treatment of Dual Credit students as college students. For some college faculty, Dual Credit students were viewed as successful if they blended in so well that, to an observer or college students in their program, they would not be able to tell they were high school students taking a college course.

They were not treated differently than any other student. That was made clear to them privately that I would hold them to the same standards as the others (college students) with regards to due dates, tests, and assigned readings, and I think that's the way its got to be. If I had taken them, aside and said you are in college program x, but I am going to treat you differently, I am saying to them you are lesser and I don't think that's what these kids need to hear. (CF)

The perceived need to provide better orientation and preparation of students is based on the belief that in more clearly explaining and articulating expectations prior to program initiation, students are likely to experience greater ease of transition becoming integrated and comfortable at an earlier point in the course leading to better performance. Interview evidence confirms the existence of different expectations.

We ask them [dual credit students] if there were any differences in terms of expectations from the college courses and the high school courses, and many of them comment that what the college profs expect is very different than what was expected at the high school level. (SS)

There is a different expectation...The high school students come here and say, "I don't need to get that in on time. I can do it when I want". So there is that whole different expectation, and if we are not working with students and having that conversation with the high school teachers, then we are doing a disservice to the students in the program. (CF)

Preparation of faculty was viewed as an opportunity for improvement from the perspective of better awareness of Dual Credit goals and objectives on the part of college faculty and improved mutual understanding of curriculum and expectations of each institution. It was observed that college faculty could benefit from improved knowledge of student backgrounds including any special needs and academic records, and was also noted that time constraints and administrative challenges were likely factors. Other specific recommendations include review of curriculum to better match courses and pathways for dual credits, better orientation of students, parents and staff, and greater remedial and social support from the college.

The area we are working on right now, is articulated agreements between certain subject areas, and we are actually getting some traction in some of the trades areas. There is a certain amount of work to be done in aligning our curriculums. (SS)

In terms of interview findings on the question of who is best served by dual credit, there was a strong belief expressed by all groups that while there are benefits to be derived from the program for all students, it is clearly the low to middle achievers that benefit most. Actual program participants came from the full spectrum of academic achievement, however the most noticeable gains were observed from those who were not expected to be successful at the college level.

Definitely the lower or middle achieving students are the ones getting the biggest benefit because they are now seeing that they can be successful at postsecondary. I think those students who were high achieving going in, knew they were going to be OK, but it's really for those students who didn't have the confidence. (SS)

CHAPTER 5

ANALYSIS OF FINDINGS

In order to effectively communicate and understand the findings of the study it is important to restate the research problem, review the methodology adopted, and restate evidence from the literature review which may support the analysis. As described in Chapter 1, the purpose of the study is to understand the role of Dual Credit programs in increasing access to and participation in college. Dual credit is growing in popularity as a strategy to achieve higher levels of postsecondary attainment in a dynamic knowledge-based economy characterized by increasing skill requirements and a growing skills shortage. It is intended to provide access to postsecondary education to groups typically underrepresented by building earlier awareness and easing the transition from high school to college. The intent of the study is to examine whether or not, and to what extent, these initiatives influence behaviour and perceptions to better inform and prepare students for college. The current study provides a case study of Dual Credit programs offered during the fall 2008 semester at St. Lawrence College in partnership with four local school boards located in southeastern Ontario.

A case study adopting mixed methods to gather and assess data was adopted to explore the nature of dual credit implementation in Ontario recognizing the unique contextual elements of the initiative. To investigate the overarching research question “What is the impact of Dual Credit programs in increasing access and participation in college?” Data collection methods and instruments were designed to investigate three subsidiary research questions:

- *What are the perceptions of those involved in Dual Credit regarding program success?*
- *What elements of Dual Credit programs contribute to their success?*
- *What student group(s) is Dual Credit best serving?*

The case study relied chiefly on documentary sources related to the programs, surveys of high school students enrolled in Dual Credit programs at each of the three college campuses, and interviews with college and school board staff involved in planning and delivery of the courses. Data analysis was facilitated through a comparative assessment of findings according to themes and adopted from concepts and studies in the literature review, deemed by the researcher to provide the greatest depth of understanding for the case study. Such an approach is intended to provide rich layers of perspective through triangulation of data in order to interpret meaning and develop understanding of the dynamics of dual credit. Consistent with what Merriam (1998) describes as the characteristics of a qualitative research perspective, the approach is meant to be particularistic, heuristic and descriptive.

The work of Karp & Hughes (2008) to establish a theoretical model to better understand credit based transition programs offers useful insight into the findings and research questions of this study. According to their model, CBTPs can help promote successful transition from high school to college by preparing students both academically and socially. CBTPs do this by implementing multiple complementary program features combining college coursework and support services that promote three elements necessary for successful transition:

- 1) Academic skills improve
- 2) Exposure to social and procedural skills required of college students, prepares DC students for college

- 3) Success in college level courses breeds self confidence and motivation, thereby encouraging DC students to apply and enroll in college.

An improved understanding of the demands of college, coupled with academic success, tends to help students see college as a realistic goal, thus increasing the likelihood that students will apply, enroll and succeed in college. This informs the basic research question of the extent to which Dual Credit programs increase access and participation rates in college. After testing their model through five case studies of CBTPs including dual credit, they conclude that the model is sound, however the interaction of program components cannot be viewed in linear fashion and the importance and role of student motivation may be much greater and more complex than originally anticipated. In other words increasing the number and complementarity of program features or supports to academic and social integration does not necessarily lead to increased likelihood of success. Related to this, student motivation may be enhanced during or by the dual credit experience, but is also a factor in determining participation and as a pre-existing student characteristic is more difficult to view as directly related to dual credit program elements as was initially thought.

5.1 Summary Conclusions

The analysis of the research findings leads to the conclusion that for many students, dual credit programs do have a positive impact in terms of increasing access and participation in college. The evidence and analysis provided here is not intended to assess actual levels of participation and access on a longitudinal basis, but as an interpretive case study, is interested in the factors contributing towards dual credit as a successful transition program from secondary to postsecondary education. Dual credit programs may be seen as working in two equally important and related ways to create a positive impact. Firstly, in providing direct involvement with the college experience and academic programming, dual credit increases confidence particularly amongst low to middle academic achievers providing greater

motivation to pursue a college education than would be the case if they had not participated. Student expectations in terms of reasons for participating provide evidence of pre-existing motivation that is accentuated and reinforced by involvement and academic success in the dual credit program. Secondly, through this experience, dual credit students acquire and exhibit a greater awareness and understanding of the nature of college education and programs leading to specific career destinations, which contribute to more informed decision making regarding postsecondary destinations. In this regard, for some students dual credit increases their intention to participate in college, and for others there is still a benefit even if the outcome for the student is not to participate. While dual credit completion rates and grade records indicate that students from all levels of academic achievement find success, there is a perception and expectation expressed through survey and interview data that it is the lower and particularly middle academic achievers that stand to gain most and tend to demonstrate the greatest change in terms of improved performance and likelihood of college participation.

The findings suggest that the elements of dual credit contributing to success need to be understood in a broader context than a primary focus on institutional factors. Given that there is limited variation in perceptions related to the experience and benefits of dual credit between the two college-based delivery models investigated, it appears that success factors should be considered as related to specific program elements and design, as well as student characteristics and how they respond to the college experience presented to them. This is not inconsistent with college impact models of student development that in taking a sociological perspective emphasize the importance of institutional factors, but at the same time acknowledge and accommodate student characteristics as influential in understanding program success.

The findings of this study have similarities to the conclusions of Karp and Hughes (2008) that in understanding the success of credit based transition programs such as dual credit, it should be recognized that the role of student motivation is much greater and more complex than originally anticipated. Karp & Hughes base their study on multi-year programs beginning with college preparatory work earlier in high school and culminating in a dual credit experience similar to those examined in the present study. This comprehensive approach addresses issues of student preparation, curriculum planning and integration which are identified in the current study as opportunities for improvement.

While the findings are similar in terms of attributing a potentially greater role to the influence of student motivation in accounting for program success, this point may be more accentuated by differences in the program models studied by Karp and Hughes compared to the Ontario case explored here. In focusing on what Bailey and Karp describe as comprehensive and enhanced comprehensive programs, Karp and Hughes seem to assume a certain sophistication of institutional or environmental factors is important to create the conditions for success. Their research excludes the singleton model of programs which has been used here to characterize the programs in the current study. This may be due to their focus on programs facilitating transitions for low and middle achieving students, compared to the Ontario policy of targeting this group but also leaving the programs open to all students. Notwithstanding these differences, given the high levels of agreement by students and staff participating in Ontario dual credit programs that they are successful in contributing to greater access and participation in college, then it may be possible that student motivations and characteristics both prior to and during the dual credit experience have a greater impact than expected. This must be qualified by acknowledging that the findings are based on

perceptions and assessments of those involved and there is no intent to conduct longitudinal comparative outcomes on the quality of programs.

5.2 Perceptions Regarding Success

In order to investigate the core research question of the extent to which dual credit contributes to increased access and participation in college, the study sought to determine what success means from the perspective of those experiencing the program, and then looked for evidence of achievement. At the most general level, there was consensus across all groups of participants that dual credit programs were a success. This is consistent with previous research on dual credit which has also observed that while there is near unanimity in agreement over the positive nature of the programs in contributing to student success, there is less understanding as to why or how they are successful. The analysis examined policy and program documentation as well as knowledge of participants, to clarify intent and confirm understanding of program objectives before asking whether programs were a success in meeting goals. In order to develop an understanding of the factors behind the reported success, the intent was to pursue inquiry around perceptions of various aspects of the experience and arrive at a more emergent understanding of how students and parents view successful dual credit programs.

The survey enabled respondents to articulate their own view of success by first asking about motivations for participating in the program. This was based on the assumption that participants were likely to view the program as successful if it met their expectations in terms of the decision to participate. Other survey questions probing program elements contributing to success provided insight into how well programs facilitate the achievement of intended policy outcomes. The timing of the survey may have influenced the findings on respondent motives for participating. Administering the survey midway into the semester captured

students who had already achieved a certain level of success by virtue of persistence in the course. This may have had an influence in terms of producing more positive responses than had the survey captured those who dropped from the program in the early stages.

Just as the survey results clearly revealed that Dual Credit programs were deemed a success by students, a similar finding was derived from interview respondents who consistently report dual credit a success for all involved. From the interviews, while success is defined in terms of high school students passing the college courses, there is also a strong current of feedback suggesting success is also about students having a better understanding of college on which they can make more informed decisions regarding postsecondary options even if the experience confirms that college is not for them.

With respect to academic achievement in dual credit courses as an indicator of success, the findings from student records provide documentary evidence in several ways that students are experiencing success. As reported in the report on findings, there was an 89% completion rate for students attempting dual credit in the fall 2008 semester. A similar comparison for college students attempting first year courses shows an 87% completion rate for St. Lawrence College students. Given that the dual credit students may have a greater representation of so called “at-risk” students compared to college students due to target groups for recruitment, the higher completion rate provides a measure of success. In terms of comparative performance of dual credit students to college students in the same courses, the evidence suggests that there was a range of performance with some dual credit students near the top of their class, others struggled, and the majority performed in the middle. The grade average of 70.5% and median grade of 74.5% for dual credit students compared to college students in the same courses having a slightly lower average at 69.4% and greater differential in median grades at 69%, gives some indication that dual credit students may be higher

achievers academically than may be assumed from the target groups identified for the program.

High School records available for 70% of participants indicate that 56% of students had grade averages in the 70s and 38% in the 60s. While grade averages alone can be misleading in terms of identifying disengaged students due to other influencing factors, it appears that a large majority are middle academic achievers. As middle achievers, it may be that when challenged academically in a supportive environment, they have the capacity to respond positively. This is reflected in the dual credit grade results where almost half of the grades awarded were A level, but less than 5% of participants had high school averages above 80%. Based on high school records available for comparison with dual credit performance, 70% of students received a higher grade in the dual credit course compared with their high school average. While the average dual credit grade at 70.5% was lower than the 71.6% high school average, and higher than the 69.4% average of college students in the same course; the median grade in dual credit at 74.5% was almost 2% higher than the median high school average of 72.7%, and almost 5% higher than the median grade of college students in the same course. As a group of primarily middle academic achievers, dual credit students were experiencing success in terms of comparative performance with college peers and their high school courses.

Perceptions of success as evidenced by survey and interview findings further enhanced this positive view of dual credit student and program success. There was an overall high level of agreement from all research participant groups on the success of dual credit. Survey responses indicated unanimous agreement that the program provided a positive academic experience and that dual credit curriculum benefits all participants. Findings that dual credit provided benefits beyond the academic experience support the view that the social

experience and greater awareness of college expectations contributed additional dimensions of success that influence positive perceptions of the programs.

5.3 Motivation to Participate

In terms of survey responses ranking different motivations for participation, students tended to find most valuable the opportunity to experience the college environment; and to a lesser extent were participating purely for academic reasons. The more general response of “the experience” may include academic reasons to participate as well as others, however the survey was not designed to probe respondent definitions for responses. A desire for the general experience may be influenced by a lack of familiarity or previous experience, just as an expressed desire based on a more specific reason may be based on more informed and therefore selective reasoning. A further characteristic of student survey respondents that may influence responses regarding reasons for participation is that they are in the program by choice. Dual credit programs in Ontario are non-mandatory and therefore populated by students who have an internal commitment to participating. Being there because they want to, rather than because they have to, brings a much higher level of motivation. While it was beyond the scope of the research to assess individual student characteristics prior to participation, it is possible that those choosing to participate may be exhibiting to some extent more risk tolerant behaviour than non-participants as they are willing to step out of the familiarity of the established environment. The willingness to voluntarily take the risk of exploring the unknown in the final year of high school may provide further motivation to succeed.

Interview findings present evidence in support of the view that students choosing to participate in dual credit do so for the broader experience as well as academic reasons. School board staff commented on the fresh start the experience provides for many students

and both college and school informants reference the apparent interest or curiosity in “trying on” the college experience to get a better sense of how it fits. In this regard, students exhibit different motivations in the sense that some are seeking an alternative due to dissatisfaction with elements of the high school experience, while others may be happy with high school but want to explore options to enhance awareness and inform postsecondary education decision making. Put another way, students may be motivated to participate in dual credit both because it represents college and because it is not high school. Future research would benefit by comparing the experience of students on the basis of negative or positive motivators.

The observation that an internal commitment to participate in dual credit courses may be strengthened due to students making the choice to be there, is consistent with literature on student change suggesting those motivated by a desire for involvement in a new experience are more likely to be successful in terms of persistence and program or course completion. College impact models agree that motivation is a key factor in determining the level of student involvement which is closely related to student learning and development. In displaying the self confidence to choose to participate in dual credit, students are coming into the programs demonstrating a key attribute to success which if supported by positive experience with environmental factors fostering academic and social integration continues to build momentum towards successful outcomes.

5.4 Challenges

The survey was designed to inquire about challenges encountered in the dual credit program before questions asking informants to evaluate the experience. Higher academic standards were reported the most frequently as a primary challenge, while adjusting to the new environment, including new terms, teaching methods, and college students was mentioned but not at the same level of concern. Although the survey did not address

expectations prior to the dual credit course, it is reasonable to assume that academic challenges are fundamental to any learning process, but environmental challenges not necessarily so. With respect to theory and research on student persistence, rigorous and challenging academic standards are generally viewed as contributing to student success. The findings can be seen as supporting this view to the extent that students unanimously agreed that dual credit was a positive academic experience at the same time as it was challenging.

Further illumination of the challenges identified by students in their dual credit experience is reflected in the interview findings and is consistent with arguments made in support of greater K-16 integration. Inadequate alignment in curriculum, teaching methods and assessment between high school and college is often viewed as a barrier to enhancing the confidence of students in their decision making regarding applying and enrolling in college. The findings with respect to challenges may also indicate that there is an opportunity to develop more effective communications between all stakeholders – including students, teachers, parents and administrators in order to more effectively articulate expectations for dual credit students in adjusting to the new environment.

5.5 Dual Credit Success Factors

If dual credit programs are deemed as successful as the findings of the study indicates, the next question to be addressed is “What elements of dual credit programs contribute to their success?” As a research question the intent is to probe deeper into perceptions and initial evidence of success in order to examine and better understand contributing factors. In this regard, the study attempts to go beyond research of a primarily descriptive nature and provide more evaluative analysis. It was observed in the literature review that the descriptive nature of much existing dual credit research is not an uncommon

characteristic of early research into new policy and programs as there is a need to define the scope and nature of the phenomena. This observation applies to the Ontario experience with dual credit, still in the relatively early stages as a pilot initiative.

In an effort to build on this, a qualitative case study approach is adopted to further develop an understanding of the relationship between factors identified through descriptive research. As a research perspective, the qualitative approach supports the use of theory to contribute to understanding and the creation of meaning from the often complex research context. The use of theory may be of particular benefit for research having a potential influence on policy. As Karp and Hughes point out in their study of dual credit and related programs, an inadequate theoretical foundation may create greater risk of unintended consequences in policy ultimately affecting students and program outcomes. The benefits of theoretical thinking in advancing understanding of dual credit was acknowledged and discussed in the literature review in choosing to consider theories of student change as well as research on dual credit. Given the research questions and methodological considerations of the study, concepts adopted were consistent with College Impact models of student change as they are deemed more eclectic than traditional development theories in considering a broader range of variables than a more singular focus on changes within the individual student. Analysis of dual credit success factors was conducted by relating findings to key themes deduced from the literature as having a significant role in successful transitions:

- Academic Integration
- Social Integration
- Awareness of college
- Confidence/Motivation

Academic and social integration is viewed as significant to the extent that the more students become engaged in academic activities and develop relationships and connections with the institution both inside and outside the classroom, the greater their likelihood of persistence. Learning the expectations of college and becoming familiar or aware of the overall environment may help students succeed, because many do not persist for non-academic reasons. Each of these factors work together to have an impact on student confidence and motivation, and ultimately influence the decision to participate in college.

5.6 Academic Integration

The three questions related to academic integration were:

5.1.b) I have benefitted from the curriculum taught in the course.

5.2.d) My academic performance in the course is better than in my regular high school courses.

5.2.e) The course has been a positive academic experience for me.

As reported in the findings, students were in unanimous agreement that they benefitted from the curriculum taught in the course and that the course had been a positive academic experience. There was a mixed response to the question on how academic performance in the college (dual credit) course related to high school performance, which reflects challenges students encountered in terms of different academic standards. This is consistent with responses to the survey question regarding challenges experienced in the program. The top two areas identified as presenting the biggest challenges to students were higher academic standards and different teaching styles. Given that students indicated a high level of agreement that they benefitted from the curriculum and the academic experience, the mixed reaction to the comparative question of performance may be an indication of the rigour of the college curriculum which can be viewed as a contributor to academic integration. Students

therefore appear to support the notion that high standards and challenging curriculum are part of the benefits and the positive experience of dual credit. This finding appears to hold true even for students experiencing difficulty with the academic expectations and curriculum as these same students also agreed that dual credit was a positive academic experience.

In terms of comparisons between the two program delivery models, there was a high level of consistency in levels of agreement on the questions related to academic integration. This finding should not be unexpected given that the students are all experiencing college academic standards and curriculum with differentiation in the cohort group and delivery schedule. There is no evidence to suggest that either learning alongside college students or high school peers in the dual credit program had any significant impact on student perceptions of the academic experience. Spending more hours per week in college courses does not appear to make any difference either given the consistency in response between singleton students at 3 hours per week and cohort students spending over 20 hours per week at the college.

Data gathered from staff interviews support this finding but also point to academic integration as an area for improvement. Interview data indicate that while there is a wide range of individual academic performance levels, with some struggling and experiencing greater challenges adapting than others, this actually contributes to a greater sense of achievement and perceived benefit when they succeed. The challenge however, which was reinforced in interviews with several college faculty members in particular, was that given the model of most dual credit programs where high school students become immersed in courses alongside college students, there is a risk that students may not always receive the support needed to enhance academic integration. This may be problematic particularly when considered in light of stated objectives for dual credit that the focus be on disadvantaged

students and those at risk of not graduating. It may be an unintended consequence of the program design that dual credit students feel greater success when they engage as a regular college student and do not receive additional support even though they do not have the same level of preparedness as college classmates.

On the positive side in terms of student support, a new policy was implemented in 2008-2009 requiring that a student support teacher from the school board be assigned to all dual credit courses to assist students. Students also have access to the full range of academic and support services available to college students and are referred to these as required. Given the evidence indicating the value students place on independence in succeeding in dual credit courses, the challenge may be in convincing students of the importance and advantages to using the supports available.

With respect to opportunities for improvement, interview findings suggest that academic integration could be significantly improved if there was better coordination and planning between school boards and the college in terms of ensuring that students have appropriate prerequisites and a clearer understanding of college academic standards in delivery and assessment. This recognition along with student feedback regarding challenges experienced in taking dual credit underscores the lack of alignment and separation between distinct educational sectors. The study provides insight and better understanding of how greater academic integration supports the transition from secondary to postsecondary education and identifies specific areas where improvements would contribute to a more comprehensive approach in support of intended outcomes.

5.7 Social Integration

Findings related to social integration, which is viewed as equally important to optimal conditions for student success, were informed by the following survey questions:

5.1.a) I have benefitted from opportunities to experience college life outside of the classroom.

5.1.d) College students were positive role models.

5.2.f) The course has been a positive social experience for me.

According to the survey data, on an aggregate level, students did not perceive those elements of the dual credit experience that were related to social integration to be as positive as they did for academic integration. Whereas there was unanimous agreement that students benefitted from the curriculum and had a positive academic experience, there was a much less agreement and a divergence of views on social integration. While 66% of students reported some level of agreement on benefitting from college life outside the classroom, and 71% agreed that it was a positive social experience, more than half felt college students were not positive role models. In terms of comparing student responses between the two delivery models, the one statement for which there was noticeable divergence in response was the general question of whether the dual credit was perceived as a positive social experience. All students in the cohort group strongly agreed with the statement while just over half of the singleton group indicated some level of agreement.

The findings may be partly explained by the structure and scheduling of the dual credit programs in the study. For the singleton model, students took mostly one and sometimes two college courses at the campus while still attending high school courses. There is not the same amount of time available to mix with students, build relationships and connections, or get involved in extracurricular activities that are available to college students who have all their classes on the same campus. Being part-time at the college and knowing you are not fully part of the full time student body also presents social challenges. The cohort model in the study saw a full class of high school students spending most of the week

on campus, but unlike the first model they did not mix in the classroom with college students. These students may have more time to engage in social activities however perhaps because of the cohort model they did not have the opportunity to initiate social relationships with college students in the classroom that their counterparts had. It is highly likely that the higher agreement amongst cohort students that the dual credit was a positive social experience is a reflection of their comfort in taking a program with high school peers whom they are more familiar with. The social bonds of the dual credit cohort students may in fact be strengthened by entering the experience together, whereas for the singleton model where high school students were integrated with a college class, college students were viewed as part of the new experience and therefore another element requiring adaptation. It was observed in the interviews that cohort students desired and would benefit from opportunities to have greater exposure to college students.

The low levels of agreement on the statement regarding college students as positive role models is likely related to the reduced opportunities for social integration. The slightly lower level of agreement amongst the cohort students is more a reflection of their relative isolation from college students by virtue of the design and structure of the program delivery model than anything else. There was no evidence from the interviews with staff to suggest that college students were not positive role models, and according to one college faculty member there was a conscious effort to establish an informal mentoring relationship with high school students to assist them in adjusting to the new environment and expectations.

From the interview feedback, the observation that better coordination between high schools and the college may lead to improved student success could be equally applicable to social integration as it is to academic integration. The observation made by several interview respondents that better orientation and advance preparation would improve the student

experience by addressing social and cultural aspects of college as well as academic matters, confirms that both aspects of integration are viewed as important and an area for potential improvement. The social networking aspect of social integration through which students learn and adapt through various informal as well as formal mechanisms is an important success factor and potential area for improvement in the program assessed in this study.

5.8 Awareness and Decision Making

As programs designed to facilitate greater access and participation in postsecondary education, the extent to which dual credit programs increase awareness of college and improve decision making with respect to postsecondary options can be seen as an important element of success. This theme is addressed through interview data as well as in survey responses to the following questions:

5.1.f) I am more likely to attend postsecondary education as a result of the course.

5.2.a) I have a better understanding of college than I did before taking the course.

5.2.b) I am more comfortable in making a decision about my future beyond high school since taking the course.

The high level of agreement from students to all three questions indicates that the experience of dual credit contributed to a better understanding of the college, leading to more informed decision making, and a greater likelihood of postsecondary participation. The highest level of agreement for all students was expressed in response to question 5.2.a regarding greater awareness of college, with only one response in disagreement. Having direct experience in taking the college level course from college faculty at the college appears to have had a significant impact in terms of developing student perspective on what college is like. The finding that 86% of student respondents indicated they were more comfortable in deciding on their future as a result of the course further supports the view that

in providing greater exposure to college courses and environment, the experience becomes demystified in the sense of validating or adjusting preconceived notions which affect behavior. In better informing students of the range of options beyond high school, the findings support dual credit as an effective mechanism to build more seamless pathways and improve the transition for students.

With over 80% of respondents agreeing that they are more likely to attend postsecondary education as a result of the Dual Credit, there is direct evidence that the programs are effective in increasing access and postsecondary participation. The finding strengthens the case for dual credit as positively influencing postsecondary education participation, given that some may have already decided to participate prior to the course and the experience strengthened student resolve. Responses to this question demonstrated considerable divergence between the two delivery models with 100% of the cohort students indicating strong agreement and 69% of the singleton students agreeing. While it is difficult from the evidence to draw any meaningful conclusions from this, the result may be related to the highly focused academic nature of the cohort program where students are taking a high school “Focus” program on the college campus. It may be that the entire program which integrates several high school and colleges courses, may have strongly confirmed interest in pursuing further study in a specific field. It is more difficult for the cohort student to differentiate between the college curriculum and high school curriculum, whereas the singleton students are basing their response on experience in participating in a single college course which they may be attending for different reasons than those participating in a Focus program. Cohort student participation may be more motivated by interest in the subject area of the curriculum rather than interest in the college experience. The motivation to “try on” the college experience as a priority over exploring a subject area may have characterized

more of the singleton students, some of whom may not have been any more persuaded to participate or decided it was not the next step for them at the time.

The theme of improved awareness and decision making comes through the interview results with staff in a variety of ways. College and school board staff offer anecdotal evidence that the experience of numerous former dual credit students was influential in terms of confirming that college was the appropriate destination for them, or changing their thinking on pathways and choosing apprenticeship or college rather than university. Conversely, there was evidence that some students considered to be university-bound took dual credit as a form of enrichment as the course was an alternative experience to regular secondary curriculum and provided access to resources not available in high school. Although the priority target group for dual credit is understood to be disadvantaged students or those not most likely to pursue postsecondary, it is apparent from the interviews, that teaching staff at high school and college believe it will benefit all students to the extent that they are more informed about available pathways regardless of their current direction or academic standing. This theme will be addressed further in consideration of the question of who is dual credit for however it is worth noting that the view of “benefit for all”, speaks to the perspective that different postsecondary pathways should not be viewed as a hierarchy with grades as the defining criteria upon which student decisions on participation are made. A more supportive view in terms of student success goals is to help inform students of the various career options accessible through different pathways recognizing that students may pursue one or several directions in order to prepare for desired careers.

5.9 Confidence and Motivation

The final theme reported in the survey findings which is also supported by interview results is concerned with the extent to which dual credit programs have an influence on

students' confidence and motivation. This is clearly linked to the other themes of academic and social integration as well as awareness and decision making and has an impact not only on postsecondary participation, but high school completion as well. Survey respondents were asked to provide their level of agreement to the following questions related to confidence and motivation:

5.1.c) I am more motivated to finish high school as a result of the course.

5.1.e) I was treated more as an adult by the teachers.

5.2.c) I have more confidence in myself as a result of the course.

There was considerable overall agreement with each statement with over 80% feeling they were treated more as adults, 76% more motivated to finish high school, and 71% having more confidence generally as a result of the dual credit. Being treated more as adults speaks to the perceived difference in the approach to teaching and learning between high school and college. Colleges are more associated with a focus on adult learning than high school and tend to place more onus on the student to take responsibility for their own learning. The logical conclusion is that students receive this as positive reinforcement which in turn builds confidence, supports academic and social integration and better prepares them for the transition to postsecondary education. For questions 5.1.c and 5.2.c the level of agreement is significant in that it implies a single course can have such a major impact in terms of an individual's personal confidence and motivation to finish high school.

In terms of comparisons between the two delivery models, the one statement where there was a difference in response was the one regarding students being more motivated to finish high school as a result of the dual credit course. Just over half (54%) of the singleton respondents agreed while a large majority (88%) of the cohort students agreed. Perhaps a single course at the college was not enough to influence singleton students in any significant

way regarding attitudes effecting high school completion. Conversely for the cohort students, spending more time and focus on the dual credit may have heightened desire and motivation to finish high school. The question of motivation and confidence is interesting in light of these findings as it has been observed (Karp & Hughes, 2008) that the concepts may be a proxy for other student characteristics that may not be accounted for in the study. That is to say, pre-existing characteristics of students may have an impact on the expected outcome of dual credit courses for participating students which in turn may influence perceived success having experience with the program. Notwithstanding this possibility, given the primary target group for dual credit of disadvantaged or students at risk, it speaks to the value and benefit of the programs that they can have this influence on students which would tend to have motivational and confidence issues as a major barrier to success.

Interview results provide further support for the role dual credit plays in terms of contributing to student confidence and motivation. College and school staff commented on the observable change in confidence particularly with respect to students who match the profile of those whom the program is designed to benefit most. Given the relationship between student confidence, motivation and academic performance it appears that the exposure to a new environment rather than being a barrier for struggling students becomes an enabling factor for success. Interview informants from the schools characterize the dual credit opportunity as a fresh start where students are not judged on the past and have an opportunity to reinvent or assert themselves in new ways. Remaining in the high school environment may not be conducive to students seeking or requiring the fresh start as behaviours are influenced by the perceptions of themselves and those of teachers and peers which may not easily support new directions. Dual credit while only temporarily extracting students from the established high school environment, may be significant enough in terms of

impact to affect qualitative change in behaviour and attitudes with respect to learning and education. While it was beyond the scope of the study to track Dual Credit students beyond high school, the evidence suggests that these students are much better positioned to participate and succeed than had they not been involved in dual credit initiatives.

5.10 Dual Credit for Whom

This is an important consideration when answering the final subsidiary research question of, “what student group(s) is dual credit best serving?” After exploring perceptions regarding program success and investigating factors, an analysis of who is best served by dual credit will assist in assessing the impact on access and participation in college. Findings related to this question were drawn from survey and interview data. Given the focus of the study on perceptions of those involved in dual credit, the intent was to examine who benefits on the basis of postsecondary destination and perceived level of academic achievement. Additional student characteristics such as socio-economic status, parental education levels, ethnicity or affiliation with traditionally underrepresented groups were not included in the research design. Research was more concerned with the extent to which dual credit programs were successful in engaging more students in college.

Survey findings on student responses were mixed to the extent that when asked to rank who benefits most, the highest number of first place rankings went almost evenly to the “college bound” and “all student” categories. The first place rankings for these groups were at least three times the rankings assigned to the workplace and university bound categories. Results are consistent with the policy objectives of dual credit programs to support increased postsecondary participation, in that all students receive a greater understanding of college and college bound students benefit from the advance preparation which shortens the learning curve when they enroll full time at college giving them a “head start”.

The “all student” category produced interesting findings when ranked by survey respondents in terms of benefit to the extent that it received an equal distribution of high and low rankings relative to the other categories. It appears that opinion was split as to whether the value of dual credit is primarily in creating greater awareness of college as a postsecondary destination that all students would benefit from, or whether the greater value lies in assisting those interested in college who may benefit from the assistance in enhancing their preparedness.

This finding may be influenced by several factors. The student recruitment process for dual credit is largely one of self-identification with students responding to the call for interested participants. Although the program objectives have a stated focus on certain groups, students are not asked to provide an assessment of their intended or preferred postsecondary destination. This is consistent with the benefit of the programs in terms of enhancing awareness of college to better inform decision making. Findings on awareness confirm dual credit courses are successful in this regard. The structure and design of the dual credit options available to students in the study may have influenced results as well. Several survey respondents were enrolled in the school board focus program which primarily attracts students because of the specialized program curriculum. The college as the delivery location and the dual credits offered through this integrated model may be secondary factors in terms of student decision making regarding participation.

Interview data support the finding that while dual credit programs are of benefit to all participants in terms of developing greater awareness of college specifically contributing to expanded knowledge of options, it is students traditionally “at risk” or requiring a non – traditional approach who are viewed as benefitting most. It is difficult to characterize these students strictly on the basis of academic achievement as many are viewed as having greater

capacity for academic performance which is constrained by other social or individual factors. This may partly explain the finding based on dual credit and high school grades of participants, that most students are not low academic achievers. Dual credit programs as an academic and social experience create conditions for students to gain or re-establish confidence and motivation to succeed. For students struggling with high school, but deemed to have the capacity for improved performance, dual credit may have the greatest impact in terms of showing them they can succeed. As a bridge between high school and college the significance of experiencing success is in both high school completion, and increased likelihood of postsecondary participation.

Students typically characterized as high academic achievers are not viewed as benefitting as much by dual credit as they are more likely to remain at a similar level of performance and therefore do not experience the same changes that struggling students may. High achievers are perceived to have more clarity and confidence in their plans for postsecondary education. Dual credit is not viewed as the same sort of developmental opportunity for high academic achievers as it is for disengaged students who are intended to benefit from an enhanced likelihood of high school graduation and postsecondary participation. This is consistent with the dominant view of Dual Credit programs in the U.S. where most research supports the view that the programs are most effective for low to middle academic achievers.

The findings from the study support the view that while dual credit ought to remain open to all students, there is variation in the benefits and degree of success for individual students depending on student characteristics, performance and experience prior to and during the program. For conceptual purposes, the overall impact of dual credit can be considered on a continuum where program features result in varying levels of benefit for different students. From the basic benefit to all students of enhanced awareness of the college environment,

students may then experience higher levels of impact through the benefits of improved academic achievement and likelihood of postsecondary participation. The following diagram provides a heuristic device developed by the researcher to distill what has been learned from the St. Lawrence college experience of dual credit. It is only an aid to thinking and developing understanding, and is not a graph where individual students can be plotted onto a point on the line.

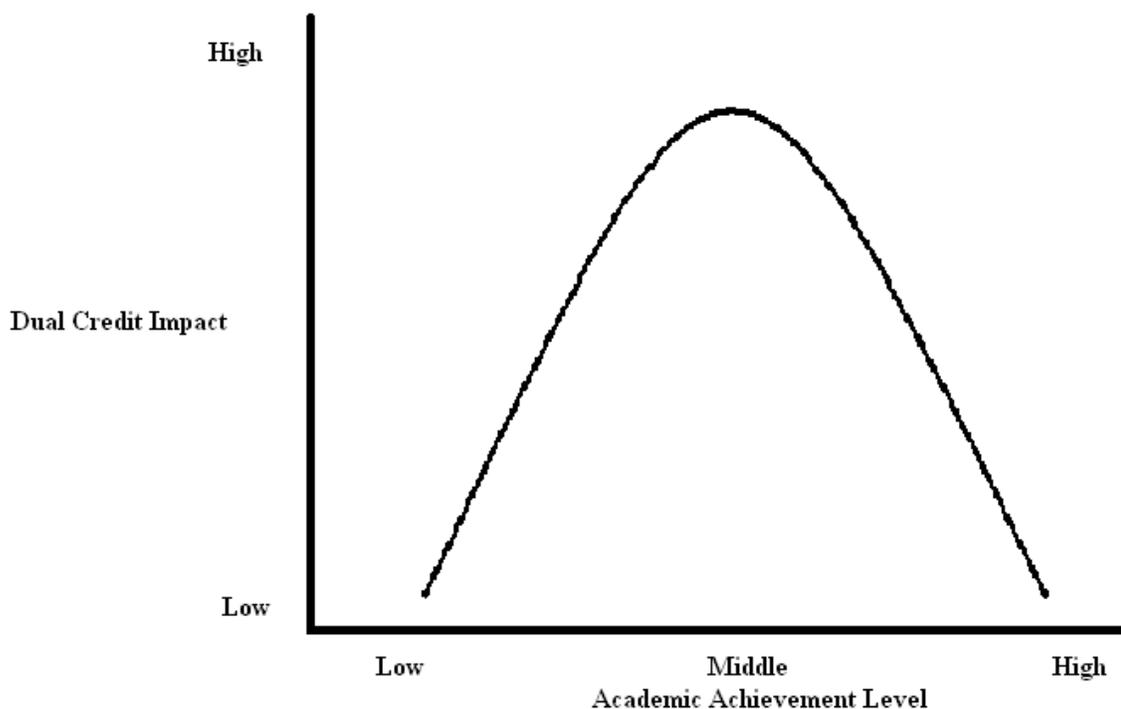


Figure 15. Relative impact of dual credit by academic achievement level of participants.

The high point of the line reflects the view that dual credit programs are most likely to have the greatest impact on students characterized as middle achievers. In programs open to all students, they would at a minimum all achieve the minimal level of benefit. High achieving students would be less inclined to experience the same degree of developmental change characterized by academic improvement, increased confidence and motivation as lower achieving students; and would likely remain at the low end of the continuum. Low and

middle achievers, which are often those deemed disengaged in high school, would with the proper support and motivation move to the higher end as an outcome of dual credit participation.

Given the structure of the programs in the present case, it cannot be assumed that low and middle achievers would necessarily progress through the full range of benefits. The delivery models provide support during the program as required, however as evidenced by survey and interview feedback, students are perceived as successful by themselves and staff when they can perform academically at the same level as college students. This may benefit middle achievers more and actually have a negative effect on lower achieving students without additional intervention or remedial support. As suggested in the theoretical discussions, just as integration becomes reinforced by positive experiences, the opposite may be true as well. Students having difficulty adjusting to new academic requirements and standards may lose interest and motivation, leading to less interest in postsecondary participation. There was no direct evidence of this in the findings, although it was identified as a potential issue in interview feedback.

The lack of evidence in this regard may be partly attributed to the profile of participating students. There did not appear to be a high level of involvement of low academic achievers in the dual credit program. High school records indicated that most dual credit participants could be characterized as “B” students or middle academic achievers. Evidence of this is the 71.6% high school average of dual credit students based on available records, and the 70.5% average and 74.5% median grade for those completing dual credit. Further evidence of the academic achievement levels of dual credit students is drawn from a comparison of dual credit grades to the grades of college students in the same courses. Findings based on fall 2008 grades indicate higher average and median grades for dual credit

students than college students. Supporting the view of dual credit students as being higher academic achievers than may be expected based on programs objectives, is the finding that just under half the grades awarded for dual credit courses were at the “A” level. The skewed distribution of grades in this regard does not match normal distribution for college students where more grades fall in the middle. Without controlling for relative degrees of difficulty for individual courses, caution is required in reaching strong conclusions based on the evidence. There does however appear to be enough evidence to support the view that dual credit programs for the period under study were populated by students functioning at a fairly high level given their academic performance in the context of the challenges of integrating in the new environment.

Recruitment processes for dual credit may have an impact on the types of students selected for participation. School board staff are aware of the risks as well the benefits of participation for students depending on their individual circumstances. Selection decisions are influenced by an assessment on student likelihood of success. While this translates into near unanimous agreement that the programs are a positive experience for participants, it may also indicate an unintended consequence of selecting greater numbers outside the target group in order to provide a safer more traditional root for the struggling students the program is designed for. As Dual Credit participation increases, this may become more of an issue if policy becomes more focused on targeting low and middle achievers.

5.11 Conclusions

The study has attempted to contribute to knowledge and understanding of the role of Dual Credit programs in increasing access to and participation in college. More specifically, by examining the perceptions and expectations of students, parents, faculty and staff involved in dual credit at one Ontario College, an effort was made to examine the extent to which the

initiative influences behaviour, attitudes and decision making regarding college participation. In order to investigate the research questions, surveys and interviews were conducted to determine understanding of program objectives, motives for participating, challenges and benefits, success factors, and which student group(s) are best served. The findings reflect the input from stakeholders involved in the program and conclusions were drawn from comparing and contrasting the views expressed by the respective participant groups.

In order to enhance the interpretive capacity of the investigation to develop a rich understanding and appreciation of the relationship between the complex variables involved in the case study, an effort was made to assess findings within the context of related theory. From a review of the literature on dual credit as a strategy to promote student success through effective transition from secondary to postsecondary education, it was determined that theories of student change provided an appropriate framework to examine the program and its effects. More specifically, the research design was consistent with College Impact models of student change which adopt a sociological perspective considering the impact of institutional initiatives in addition to other factors. Analysis of research findings was framed within associated concepts and theoretical considerations to explore the questions of:

- *What are the perceptions of those involved in Dual Credit regarding program success?*
- *What elements of Dual Credit programs contribute to their success?*
- *What student group(s) is Dual Credit best serving?*

With respect to the concepts of academic and social integration as key factors leading to greater engagement and success, there appears to be very high level of academic integration and a positive albeit less significant element of social integration. Students reported increased motivation and confidence as a result of their participation and there was no significant

variation in perceptions based on the program delivery model students were involved with. This finding was supported by interviews with school board and college staff. Observations on the program elements perceived as contributing to success tend to focus on the experience of being in a new environment, and the academic challenge within this environment.

In reporting on challenges experienced in the program, there was consistency between survey feedback and interview results that the same factors identified as contributing towards success were also the areas of biggest challenge. Students who were able to rise to the new academic challenge of college curriculum and adapt to the new environment without being singled out from college peers for additional support were viewed as highly successful. This view is reinforced by the perception that being treated more as an adult is a characteristic of the college environment which students must adapt to.

Given the input of staff interviews that there exists room for improvement in terms of program planning with respect to curriculum integration and student and staff preparation, the current program design may not be supporting equally the full spectrum of students that it seeks to serve. That is to say, if the intent is to engage students who may be at risk in high school, or are traditionally under-represented in postsecondary participation, then these students may need greater support either prior to dual credit participation or during the program. The Karp & Bailey typology of dual credit programs described in the literature review supports the view that comprehensive programs, characterized by greater curricular and co-curricular support and integration create better conditions for success than singleton programs such as the predominant model in the present study. Although the research findings conclude there is a high degree of success in the dual credit programs as currently structured at the college, there is no evidence to suggest students would not benefit from greater curricular integration and earlier exposure to the requirements and expectations of the

college environment. Such measures may serve to increase interest in dual credit by preparing a broader range of students for participation without minimizing the academic and social challenges derived from actual experience in the college environment.

Consistent with College Impact perspectives on student change that accommodate the importance of individual student characteristics as well as sociological factors, the findings indicate that motivation is an important factor influencing expectations and perceptions of program success. It appears that student motivation is equally important as institutional or structural components of dual credit program components. Motivation can be a difficult thing to assess in that it deals with how individual students respond to different environmental influences and is affected by past experience and personal characteristics. It can be concluded from the research that motivation should be considered as a pre-existing student characteristic as well as something shaped and influenced by institutional program factors. In making the decision to participate in dual credit as a non-mandatory program, students demonstrate a distinct and common level of motivation. Given the broad range of students that dual credit attracts and is open to, participating students may have more in common in terms of a shared motivation for involvement, than they do in terms of respective levels of academic achievement or preferred postsecondary destinations. It can be assumed that students are entering the program highly motivated as they have decided that the benefit of the new experience is worth the risk of the leaving the traditional pathway. In this regard, they have made an investment in the program up front, increasing their likelihood of success even before the program begins. The psychological head start when reinforced by positive experiences associated with academic and social integration, cannot be underestimated as having a significant influence on student success.

This is similar to the view of Karp & Hughes (2008), that the impact of pre-existing motivation may play a more significant role than assumed by studies of dual credit placing an emphasis on institutional features and interventions. The authors approached the study from more of a sociological tradition informed by the work of Bailey and Karp that established the continuum of transition programs and viewed increasing complexity of program features as directly related to improved student outcomes. Based on an initial conceptual model designed to understand how program features contribute to student success, Karp & Hughes theorize that college course work and support service together promote three elements necessary for successful transition from high school to college. First, academic skills improve. Second, success in a dual credit may breed increased self confidence and motivation, encouraging students to graduate from high school. Third, exposure to the social and procedural skills required of college students will prepare them for college. Conclusions based on five case studies of credit based transition programs led to a revision of the original model deemed to place too much emphasis on the effect of college courses, and underestimating the importance of student motivation. More specifically, the studies did not show conclusive evidence that high levels of program sophistication and complexity would necessarily lead to greater student success in accessing and persisting in college. While dual credit participants may receive numerous benefits that non-participants do not, there was also evidence that many students deemed to be successful across the five case studies exhibited the common characteristic of starting out academically motivated.

The current study draws similar conclusions with respect to understanding the impact of dual credit in contributing to increased access and participation in college. Exposure and involvement in the new environment, and the challenge of college curriculum and academic standards, lead to greater awareness of college expectations and requirements, having a

positive impact on participant confidence and motivation, and in many cases, academic achievement as well. This also contributes to more informed decision making regarding postsecondary participation generally, and college specifically.

The high degree of success reported in the findings is quite remarkable given the relatively short intensity of participation provided by the design of the programs. This may lend support to the observation that pre-existing student characteristics should be considered as equally important success factors as specific program features. Evidence is provided of specific motivating factors and student expectations coming into the program which are confirmed and reinforced by positive experience once engaged with the program. The open nature in terms of student recruitment attracts a broader range of students than would be the case if the programs were targeted solely to lower academic achievers or students at risk.

While the current structure supports success in achieving the multiple objectives of improved high school graduation rates, greater awareness of postsecondary destinations, as well as increased postsecondary participation rates, it appears that the greatest benefits may go to middle achieving students. Identified opportunities for improvement indicate the programs could be strengthened by offering more curricular and co-curricular support including more integrated planning and coordination. This would provide enhanced support and transition particularly for those students most at risk or at the greatest disadvantage in terms of likelihood of postsecondary participation.

CHAPTER 6

CONSIDERATIONS FOR RESEARCH AND POLICY

This study has offered insight into the nature and impact of Dual Credit by looking at the experience of St. Lawrence College and partner school boards during the September – December 2008 college semester. The intent is to provide an understanding of the program’s dynamics and the extent to which the initiative as delivered in this specific case is meeting objectives. Based on available institutional records and the views of those directly involved in the programs the research is based on a snap shot or sample the dual credit experience within defined parameters. As a contribution to knowledge about this innovative model of high school to college transition, the benefit lies not in establishing causal explanations or specific models for replication elsewhere, but in providing a perspective based on a specific set of circumstances that can provide context for others in thinking about how similar programs work and how they may be improved. Given the limitations of the study, and the emergent nature of findings facilitated through exploration of the research questions, a number of interesting considerations of both a conceptual and practical nature arise which are beyond the scope of the study. As with many research endeavours, the study has value in both the answers it provides and questions raised. In this regard the following chapter will articulate a number of implications for theory, research and practice that may be worthy of further exploration given the findings of the study.

6.1 Theory and Research

As noted at the outset, dual credit research is at a preliminary stage in Canada. In the U.S. where programs have a longer history, it is noted that research is still primarily descriptive, describing inputs and outputs. Opportunity exists to conduct more extensive analytical research on implementation as well as outcomes. Furthermore, many studies focused on examining outcomes, do not focus on enhancing understanding of how programs are working to produce reported success. Defining success by quantitative measures such as increased postsecondary participation rates, improved college retention, or GPAs, plays an important role in evaluating program outputs and results, however it is limited in terms of its ability to understand the relationships among the many factors with potential impact on the outcomes. The research perspective adopted by this study is intended to get inside the “black box”, understanding the relationship between inputs and outputs.

In order to do this, the study attempts to demonstrate the benefit of using theory where it is helpful in providing concepts that organize data and evidence to make a plausible case for connections between variables. Using theory to facilitate understanding of the complexities of a phenomenon, particularly when not all potential elements are readily understood, supports the heuristic intent of case study research. The study benefitted from the flexible use of theory adopted by the research orientation adopted. The intent is only to provide meaning to the specific case, which may offer insight but is not to be generalized to other cases. With this understanding, a number of concepts were adopted from College Impact theory. This selective mix of thinking on student change encompasses ideas and frameworks from numerous scholars informed by more of a sociological tradition who share a broad view that examining the impact of social and institutional structures on behaviour, provides more

enlightened understanding. As an institutional intervention intended to have an influence on student behaviour, dual credit programs seem to fit well with this perspective.

The concepts of academic and social integration, and student involvement popularized by Tinto and Astin are examples of theory that formally and informally have influenced this study. While useful in informing thinking about Dual Credit to conduct research that moves beyond simple description, the challenge is to not impose constructs that restrict or limit interpretations of meaning. Too great a reliance on pre-established theory may detract from the special features of qualitative case study research characterized as particularistic, descriptive and heuristic. In this regard, concepts related to Tinto's integration theory and Astin's theory of involvement were informative in terms of framing the analysis, however it became apparent that the nature of the findings specific to the case study required other considerations to assist in developing insight into the dual credit experience. The study attempted to find the right balance to build on foundations provided from previous thinking on related issues while allowing room for emergent findings given the specific context of Dual Credit being examined. The conclusion that pre-existing individual student characteristics may play a stronger role than anticipated by college impact models does not diminish the sociological approach of this tradition, but rather demonstrates parsimony in its application and the benefit derived from flexibility in the approach.

The findings of the study highlight a number of areas for additional research which may further illuminate understanding of the effect of Dual Credit on postsecondary success. The limitations or parameters of the study were such that consideration of student characteristics prior to involvement in the programs was limited. The findings of the study presented suggestions from several sources leading to the conclusion that student characteristics, behaviours and experiences prior to dual credit participation may play a role

in program and student success that was not considered. The comparison of high school grades to dual credit grades did not indicate any significant change in academic performance. Some students performed above high school grades, some below with the median level showing a marginal decline. Notwithstanding this, there was a very high level of agreement demonstrated by students surveyed that the programs were successful in terms of academic and social integration, student motivation and confidence, and influence on postsecondary decision making. Similarly, very positive feedback was received in staff interviews, claiming a high level of success for students while at the same time acknowledging a variety of challenges, shortcomings and opportunities for improvement. Furthermore, the singleton model of dual credit as a one semester experience with high school students immersed alongside college students, does not lend itself to the provision of special support for dual credit students who may represent targeted groups traditionally under- represented in postsecondary education. The high level of reported success by those directly involved as participants and staff in the programs, in light of the full body of evidence, suggests that more research on pre-existing student characteristics may contribute to an enhanced understanding of program dynamics and the relationship between influencing factors.

Specifically, the conclusion that dual credit students tend to exhibit a high level of motivation at the recruitment or pre-enrolment stage, would benefit from further exploration of participant academic achievement, socio-economic background, gender, age, parental education, and identification with target groups. Given the broad spectrum of students attracted to dual credit due to open eligibility criteria, a contribution to knowledge could be made by research comparing the experience of students in these various groups with future postsecondary destinations and attainment. This could also support investigation of the value

and benefits of keeping the programs open to all students as opposed to more specific targeting.

An understanding of the impact and effect of dual credit could also be advanced by research investigating whether after controlling for differences between groups, dual credit students perform significantly better on relevant measures of success than non-participants. Do they apply to postsecondary institutions at the same rate as a result of participation? Do they exhibit the same level of knowledge and confidence in their decision making with respect to postsecondary destinations? Continued investigation along these lines should also include comparative assessments of different dual credit models and an evaluation to determine whether some models are more effective than others in terms of addressing each of the different policy objectives or purposes that may be adopted for the programs. While the intent of this study is to better understand factors leading to greater access and college participation from the perspective of participants in specific programs, continued tracking of participants beyond secondary graduation would provide insight into actual destinations, postsecondary participation, retention and graduation rates.

6.2 Policy and Practice

In addition to considerations for further research, the findings and conclusions raise a number of interesting issues for policy and practice related to dual credit. In terms of overall program objectives, the current open policy on recruitment, allowing students from all academic backgrounds to participate, seems to be working well. Available high school records confirm dual credit participants are recruited from the continuum of low to high achievers and overall achieve comparable levels of success to college students in the same classes. Survey and interview results provide suggestions that dual credit can provide something for everybody in terms of increased likelihood of attending college, creating

greater awareness of postsecondary destinations, and improved decision making which may exclude the suitability of college as an option. For a program initiative in a relatively early stage of implementation, there is a certain logic to a policy of maintaining broad eligibility with multiple objectives. This encourages innovation and the ability to assess a variety of models while also tapping into a broad enrolment base to raise participant numbers and awareness. As the dual credit initiative matures and grows as a result of its current success, increased demand for resource investment coupled with improved knowledge of effectiveness due to experience and evaluation may suggest a review of policy direction.

The findings suggest that while all students benefit in terms of developing a greater awareness of college, it is the lower to middle academic achievers who stand to gain most in terms of affecting academic performance and influencing decision making on postsecondary destinations. Furthermore, the programs investigated here seem to be best suited to the middle academic achievers and pose some risk to lower achieving students due to the structure of the program. While this finding is based on interviews with staff involved in the program, there is evidence from student and parent surveys that the positive perceptions regarding the experience and the associated confidence generated, may compensate for any program weaknesses.

As longer term outcomes become known through tracking pathways of dual credit participants, it may become clearer as to whether current models are adequately serving the priority target groups of disadvantaged or “at-risk” students, and those deemed not likely to continue to postsecondary education. If outcomes do not demonstrate desired levels of program effectiveness, additional investment is required to address shortcomings. Primary challenges from the findings in this regard were associated with the level of program planning and collaboration between high schools and the college. With students indicating

challenges in making the adjustment to the new environment, and staff reporting there was little in terms of joint review of student profiles and backgrounds, or discussions of curriculum content or alignment; it can be observed that students were not always prepared for the courses and the courses were not prepared for the students. The findings show that with the exception of the dedicated high school teacher assigned to each dual credit student, there was little offered in terms of additional support by the college other than what was made available to college students.

Addressing these challenges would require either an intensification of planning and resources to support current program delivery models, or the development of more comprehensive models that begin to prepare students at an earlier stage in high school. A more sophisticated planning model would see the academic ground work beginning early on in high school with students having options of taking college preparatory coursework and other remedial activities as required to better orient them to the full college experience presented by dual credit. Such considerations are beginning to be incorporated under recent student success initiatives in Ontario however their full effects have yet to be seen at the postsecondary level. If postsecondary participation and access became the sole priority for dual credit programs, the exclusion of high academic achievers or those already bound for college or university would result in fewer participants in the shorter term. Improved planning and integration of the programs over time would likely expand enrolment as a result of success in providing opportunity to students not engaged in the pilot program models.

Other considerations in the Ontario context make an alternative case for leaving the current policy of open access for all students in place. From the college perspective, findings indicate that dual credit is viewed as a recruitment strategy leading to greater enrolment resulting from increased awareness and familiarity created by the experience. From a

resource perspective, the easiest strategy is to place dual credit students in courses with seats available as there is minimal incremental cost associated with the addition. For school boards, in providing students with opportunities to take credit courses at the college, they are leveraging the resources of the college to expand their inventory of courses and capacity to access facilities and labs which they are unable to provide themselves. As a broad policy issue, by not exclusively targeting certain groups, dual credit is less likely to be perceived as a remedial or second choice curricular pathway.

This is particularly relevant in the Ontario context where part of the objective is to view college as a viable alternative option for postsecondary education. The Ontario perspective to promote and inform students of the range of pathways after high school including the workplace, apprenticeship, college, and university encourages the view that each has value but they are different. This has particular relevance in the context of policy objectives promoting greater access to postsecondary education. Given the relatively bifurcated nature of the postsecondary system in Ontario, college is not viewed as a similar access point to the full range of opportunities as it is other jurisdictions with greater transferability from college to university. The lack of integration within the postsecondary sector in Ontario therefore necessitates a more restricted or qualified view of access. Access to the college sector does not mean access to university to the same extent it does elsewhere.

In terms of implications for policy and practice, the structural separation of sectors leads to a certain tension between dual credit objectives of creating greater awareness of college, and facilitating easier transitions towards the goal of greater postsecondary access and participation. The current Ontario system creates more competition rather than collaboration within the system, reinforcing the view that a choice must be made with students asked to make an “either-or” decision. In this context, the role of dual credit in

facilitating a greater awareness of college serves a somewhat different purpose than just preparing students for better transition to postsecondary education generally. If priority is to be given to better preparing students for success and access to a full range of academic and career opportunities, then just as dual credit between high school and college is an example of strategies to promote greater collaboration to achieve this goal, there is a similar case to be made for dual credit between college and university, and for other mechanisms to provide for greater transition and ease of mobility between postsecondary sectors.

An important consideration with respect to the opportunity of enhancing Dual Credit in this regard is institutional will to invest time and resources towards desired outcomes. In a society and culture which continue to value university as the destination of choice, there would be greater likelihood of buy-in from more of the key stakeholders if investments in establishing greater curricular alignment and support to facilitate K-16 transition were seen as benefitting all students regardless of destination. Developing pathways earlier in high school to prepare students for Dual Credit under the current college based model may not be as popular with parents and students who research shows predominantly see university as the preferred destination. Under the present system, secondary students choosing college typically make this decision at a much later point in high school than those going to university, and for many the decision comes well after leaving high school. In this respect college is often considered as a default selection rather than one based on the development of an informed perspective over time. Given this perspective, it may be that the collaboration and support necessary to invest in pathways to facilitate secondary to postsecondary education transitions may have a greater likelihood of success if there was greater integration within the postsecondary sector in Ontario. The bifurcation between colleges and universities

creates an additional barrier to any considerations of K-16 planning that is not experienced to the same extent in many other jurisdictions.

This study has sought to contribute to a better understanding of Dual Credit as an initiative bearing great potential as a means of enhancing student success throughout the educational continuum. Having grown in size and popularity, if the initiative is to develop to the next level beyond the pilot phase careful consideration is required of program performance and policy. The study supports previous findings that dual credit is widely viewed as a success for all involved. This is to a large extent due to broadly defined criteria for success. While the findings suggest a positive impact on creating greater access and participation in college, this has been found to be influenced by the characteristics and motivation of students as well as the program structure and content. In terms of further research and policy considerations, it would be useful now that the programs have been in place for several years, to assess whether their impact leads to greater persistence once enrolled in postsecondary education and ultimately higher graduation rates. As the goal of all education systems is student success, then it may be that the best place to focus policy and resources moving forward is on supporting to the fullest extent possible those least likely to succeed.

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Appendices

Appendix A

Student Survey**Dual Credit Programs and Transitions to Postsecondary Education**

1. Dual Credit course name or number _____

2. St. Lawrence College Campus (circle one):

Brockville Cornwall Kingston

3. Please check the statements below that applied to you in deciding to participate in the course and rank in order of importance those that apply .

	Check	Rank (1 is highest)
3.1 I can experience the college environment	_____	_____
3.2 I can experience college academic standards	_____	_____
3.3 It gives me credit at the college	_____	_____
3.4 It gives me different course options for high school	_____	_____
3.5 It gives me something new to experience	_____	_____
3.6 Other _____	_____	_____

4. Please check from the list below any challenges faced in your experience in the course and rank in order of importance those that apply.

	Check	Rank (1 is highest)
4.1 Different teaching style	_____	_____
4.2 Higher academic standards	_____	_____
4.3 Fitting in with other students	_____	_____
4.4 Adjusting to new environment	_____	_____
4.5 Getting to class	_____	_____
4.6 New terms and language	_____	_____
4.7 Other _____	_____	_____

5. Using the scale provided please indicate your level of agreement with the following statements regarding the benefits and success of the course.

5.1.a. I have benefited from opportunities to experience college life outside of the classroom.

Agree			Disagree
1	2	3	4

5.1.b I have benefited from the curriculum taught in the course

Agree			Disagree
1	2	3	4

5.1.c I am more motivated to finish high school as a result of the course.

Agree			Disagree
1	2	3	4

5.1.d. College students were positive role models

Agree			Disagree
1	2	3	4

5.1.e. I was treated more as an adult by the teachers

Agree			Disagree
1	2	3	4

5.1.f. I am more likely to attend postsecondary education as a result of the course.

Agree			Disagree
1	2	3	4

5.2.a. I have a better understanding of college than I did before taking the course.

Agree			Disagree
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1 2 3 4
 5.2.b. I am more comfortable in making a decision about my future beyond high school since taking the course.

Agree Disagree
 1 2 3 4

5.2.c. I have more confidence in myself as a result of the course.

Agree Disagree
 1 2 3 4

5.2.d. My academic performance in the course is better than in my regular high school courses.

Agree Disagree
 1 2 3 4

5.2.e. The course has been a positive academic experience for me.

Agree Disagree
 1 2 3 4

5.2.f. The course has been a positive social experience for me.

Agree Disagree
 1 2 3 4

6. Please rank the type of student most likely to benefit from the course

Rank (1 is highest)

- | | | |
|-----|------------------|-------|
| 6.1 | All students | _____ |
| 6.2 | University bound | _____ |
| 6.3 | College bound | _____ |
| 6.4 | Workplace bound | _____ |

Thank you for your feedback.

Seal survey and consent form in envelope provided and return to your college teacher.

Appendix C

Dual Credit Programs and Transitions to Postsecondary Education
Perceptions of Students in one Ontario College

Interview Guide
Faculty / Teachers

- 1) What course(s) are you involved with?
- 2) What do you see as the benefits of DC course from your experience?
- 3) What characteristics of the course make it particularly effective?
- 4) What could be done to improve the effectiveness of the course/ program?
- 5) Will the course/program lead help achieve the desired result of increased access and participation in postsecondary.
- 6) Do you see students in the courses coming from low, middle or high achieving segments of the student population?

Dual Credit Programs and Transitions to Postsecondary Education
Perceptions of Students in one Ontario College

Interview Guide - Administrators

1. Why did your institution get involved in dual credit programs?
2. What do you perceive to be the benefits of the program?
3. What design elements are particularly important in achieving objectives for the program?
4. Has the implementation of the program met your expectations? Please explain.
5. What challenges have you experienced in program implementation?
6. Do you have any plans for modification? Please explain

Appendix D

Letter of Invitation and Information
Student and Parent/Guardian Survey**Re: Invitation to participate in a Research Study which examines perceptions of
High School-College dual credit programs**

A research study is being conducted by a doctoral student at the Ontario Institute of Studies in Education at the University of Toronto in order to better understand the role of dual credit programs linking high school and college studies in making the transition from secondary to postsecondary education.

The purpose of the study is to understand the role of dual credit programs in increasing access to and participation in college. The study will explore the characteristics of the program and the extent to which goals and objectives are being met. Findings from the research will enable us to improve the design of programs in the future to better meet expectations of students, schools and colleges.

For this first stage of the research all students enrolled in dual credit programs at St. Lawrence College during the current academic year as well as their parent/guardians will be surveyed on their perceptions of these programs.

In order to assess fully the effects of the program, schools will provide access to student records, but only to grades and only by student number. The researcher will not have access to records by student name.

Your participation in the study is completely voluntary. If you choose to participate in the study you may withdraw at any time. The information that you provide will not be seen by any of the students' teachers or professors. The surveys will be anonymous and names will not be required on the survey. Only my thesis supervisor and myself as the researcher will have access to the information. Participating or not participating in this study will not affect student grades or standing in high school or the college now or in the future.

It is expected that the student and parent survey will each require 10 minutes to complete. Students and parent/guardians are free to choose, without reason or consequence, to refuse to answer any question or complete the survey. There are no risks associated with participating in this study. There is no compensation for participation. Students under the age of 18 require parental consent to participate in the study.

After completing the survey, students will be invited to volunteer to participate in a focus group interview. Only a random selection of those who volunteer will be interviewed. The interview will examine in more depth the answers to questions on the surveys. The focus group interviews are entirely voluntary and will run for approximately 1 hour.

All personal information will be kept strictly confidential. No participant will be identifiable in any reporting of the findings, in the thesis or in relevant professional publications and conferences in the future. The information gathered from the surveys and interviews will be kept in strict confidence, securely stored and accessible only to my thesis supervisor Dr. Dan Lang, and me. At the end of the study all of the information collected will be fully destroyed.

If you have any questions concerning participation in this study, please contact the researcher, Christopher Whitaker at 613-544-5400 ext.1145 or cwhitaker@sl.on.ca, or his thesis supervisor, Dr. Dan Lang, at 416-923-6641 ext.7116 or Room 6-278 OISE/UT, 252 Bloor Street West, Toronto, Ontario, M5S1V6 at any time.

This study has been approved by the Research Ethics Boards of the University of Toronto and St. Lawrence College. If you have any questions related to your rights as a participant in this study please contact the Ethics Review Office at the University of Toronto at 416-946-3272 or ethics.review@utoronto.ca.

Your participation in this study is very much appreciated.

Christopher Whitaker
Ph.D. Candidate, Theory and Policy Studies in Education
OISE/University of Toronto

**Informed Consent
Students 18 and older**

The purposes of this research have been clearly explained. I agree to participate in this study.

My signature below indicates that I have voluntarily decided to participate in this study and that I have read and understand the information provided above and the conditions under which I would be participating. I understand that I may withdraw from participating at any time.

Name of participant

Signature of participant

Date

**Informed Consent
Parental Consent for Children under 18 years of age**

The purposes of this research have been clearly explained. I consent for my child named above to participate in this study.

My signature below indicates that I consent voluntarily for my child to participate as a participant in this study and that I have read and understand the information provided above and the conditions under which my child would be participating. I understand that I have the right to withdraw him/her from participating at any time.

Name of parent

Signature of parent

Date

I would like to receive a copy of the Final Report: yes___ no ___

I have fully explained the purposes of this study to the above participant.

Christopher Whitaker

Date

Please keep a copy of this form for your records

Email / Letter of Invitation

Potential Administrator and Faculty Participants

Dear _____,

My name is Chris Whitaker and I am contacting you to seek to your assistance in gathering data for my dissertation within a doctoral program at the Ontario Institute for Studies in Education / University of Toronto. The study is intended to understand the role of dual credit programs in increasing access to and participation in college. The study will explore the characteristics of the program and the extent to which goals and objectives are being met. As an administrator / teacher involved in either the planning, development or delivery of dual credit programs your input and experience is valuable in terms of informing the research. In addition to these interviews, surveys are being distributed to student participants followed by further focus group interviews with students regarding survey findings.

The study is based on programs offered by St. Lawrence College in partnership with area school boards at each of the college's three primary campuses in Kingston, Brockville, and Cornwall. I would like to interview up to three staff at each institution involved in the planning and development of Dual Credit programs and up to 5 faculty members at each campus and each school board involved in the delivery of programs.

Interviews are expected to be 30 - 45 minutes in duration. The interview will be recorded on audio-tape and may later be transcribed. All responses will be treated as anonymous with no identifying reference with respect to either the individual or college. Individual transcripts will be sent to each interviewee for review and comment. The transcription and comments will be communicated by email to interviewees who will have two weeks to respond with comments.

Participation is completely voluntary. Your employer/institution will not be informed with respect to whether you decide to participate or not and there are no consequences for not participating. Participants are free to not respond to any questions or to leave at any time.

Neither your employer nor any other institution will have access to information that you provide. nor will it be possible to link any of that information to you personally. You will not be identified in either the completed thesis, or in any records of the research leading to the thesis. In the case of participants who are employed by St. Lawrence College, none of the information will ever appear in other files or records or be used for any purpose other than the conduct of this research. After the research is completed, the records of the research will be destroyed. If you are interested in receiving a report of the findings of this research, it will be made freely available.

If you are willing to be interviewed for this study, please contact me at cwhitaker@sl.on.ca. Once I have received responses from the required number of volunteers I will contact each one (by email) to establish a suitable location, date and time for the interview.

I am completing my doctorate on a part-time basis while I serve as the President and CEO of St. Lawrence College. I have over 20 years of experience working in postsecondary education and am interested in exploring integrated pathways such as dual credit programs for their potential to facilitate greater access and success at college.

This research is being conducted under the supervision of Dr. Dan Lang. If you have any questions or concerns about this research, he may be contacted at 416-923-6641 ext.7116 or Room 6-278 OISE/UT, 252 Bloor Street West, Toronto, Ontario, M5S1V6.

Letter of Information and Consent Forms**Administrator and Faculty Interview****Perceptions of the Role of Dual Credit Programs in Increasing Access to and Participation in College**

Thank you for expressing an interest in participating in an interview for the research study above. Please read this form carefully, and if you are still willing to participate, please sign the consent portion at the end of this letter.

As previously communicated, this study is being conducted by Christopher Whitaker, a doctoral student in the Higher Education Program at the Ontario Institute for Studies in Education, University of Toronto (OISE/UT). A survey has been distributed to over 100 students involved in Dual Credit programs between St. Lawrence College and partner school boards, and the results of the completed surveys have been compiled. The purpose of this interview is to explore the findings of the survey. The interview is anticipated to last 30 to 45 minutes.

The interview is being recorded and may later be transcribed. All responses will be treated as anonymous with no identifying reference with respect to the individual or their organization. Participation is completely voluntary. Your employer/institution will not be informed with respect to whether you decide to participate or not and there are no consequences for not participating. Participants are free to not respond to any questions or to leave at any time. The tapes from this session will be destroyed after they have been transcribed, and in no event will they be retained for longer than one year. The transcripts and interview notes will be destroyed within one year of the completion of the dissertation. There will not be an opportunity for participants to review the transcripts – these will only be reviewed by the researcher.

This research is being conducted under the supervision of Dr. Dan Lang. If you have any questions concerning participation in this study, you may contact the researcher Chris Whitaker at 613-634-4039 or cwhitaker@sl.on.ca or Dan Lang at 416-923-6641 ext.7116 or Room 6-278 OISE/UT, 252 Bloor Street West, Toronto, Ontario, M5S1V6.

This study has been approved and has received ethical approval through the Research Ethics Board of the University of Toronto and St. Lawrence College (pending). For information regarding your rights as a participant you may contact the Ethics Review Office at the University of Toronto at 416-946-3273 or ethics.review@utoronto.ca or Cam McEachern, Director Research and Planning, St. Lawrence College at 613-544-5400 ext. 1586 or cmceachern@sl.on.ca.

You may retain a copy of this statement of consent for your records. To participate in the interview a signed copy of the statement of consent, below, must be submitted to the interviewer.

Thank you for your consideration of participation in this research.

Sincerely,

Christopher Whitaker
Ph.D. Candidate, Theory and Policy Studies in Education
OISE/University of Toronto
Phone 613 544-5400 ext. 1145