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Opportunities for Non-Traditional Pathways to Postsecondary Education in Ontario: Exploring the Dual Credit and School Within a College Programs

Community Partnerships Office and
Academic & Student Affairs Special
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Executive Summary

The Dual Credit and School Within a College (SWAC) programs are both dual enrolment/dual credit programs that address access by creating new pathways to postsecondary education for non-traditional students. The programs allow students who are still in grade 11 and grade 12 to take one or more courses at a local college and earn both a high school credit toward their high school diploma as well as a college credit from the college offering the course. Though these programs have been offered internationally for over three decades, there is still little research and little conclusive evidence that demonstrate their effectiveness.

This project looks at the educational outcomes of students who participated in the Dual Credit and SWAC program at George Brown College in Winter 2012. It examines the effect of the outreach, transition and retention strategies designed to attract students to the programs and explores whether motivation and academic preparation are related to student outcomes. These programs were assessed using a longitudinal model that surveyed program participants at four time points: (1) the beginning of the program, (2) the end of the program, (3) six months post-completion and (4) one year post-completion. The project explores the barriers that students face and the types of outreach and connections that best promote access to postsecondary education.

In 2012, a total of 281 high school students participated in the Dual Credit/SWAC programs. 257 were enrolled in Dual Credit while 24 were enrolled in SWAC. Of these, 84% were in grade 11 and 12, and the remaining 16% were taking extra high school credits when they joined the programs. The mean number of responses to each of the four surveys was 94 (n=113 at Time 1, n= 134 at Time 2, n=47 at Time 3 and n=83 at Time 4). Upon entry into the program, many students were performing at a low academic level and over half cited facing barriers to achieving their educational goals. At T4, 61% of program participants were enrolled in or pursuing postsecondary education, 34% were working and 5% were still in high school. When compared to the general Ontario high school population (King et al., 2009), GBC's Dual Credit/SWAC students were 23% more likely to engage in college/apprenticeship and 6% less likely to have workplace outcomes. 90% of the students who were not engaged in postsecondary education at Time 4 reported that they planned to apply in the next year. Low grades were cited as the most common barrier to postsecondary education among students who were working at Time 4, congruent with the fact that those students had lower grades than students engaged in college and university. Though grades presented a major barrier to postsecondary education, it should be noted that the grade average of SWAC students rose 23% from their incoming average to the program average, compared to a 9% rise for those in a Dual Credit program. This suggests that while the Dual Credit program had positive effects, the SWAC program was especially impactful in increasing high school grades.

Students reported that teachers and guidance counselors were the most common way to receive information about and access to postsecondary education. In addition, a large number of students referenced "preparing for employment or a career" and "career advancement" as major reasons for engaging in postsecondary education.

92% of the students surveyed one year after completing the program agreed that it met their expectations. Respondents emphasized the benefits of learning through experience and the value of learning about college without the risk or pressure of committing to an unknown concept. There was no statistically significant relationship between self-reported motivation and commitment and academic performance. In general, motivation increased and remained high both throughout the program and one year post-completion. Academic performance was also fairly high in the Dual Credit/SWAC programs. Finally, the majority of Dual Credit (85%) and SWAC students (100%) agreed that the programs made a difference in whether or not they

chose to attend postsecondary education and assisted them in being ready to apply and attend postsecondary education (90%).

Limitations to this research include selection bias, as students underwent a selection process to participate in the program. Response rates also varied between points of contact due to the transient nature of the population. This resulted in uneven sample sizes, which made some planned statistical tests inappropriate.

Overall, results from this study corroborate findings from the literature and support prior recommendations relating to outreach and transition strategies for Dual Credit/SWAC. For example, similar studies also found a positive correlation between dual credit programs and positive outcomes in program participants, such as higher GPAs and a greater likelihood of pursuing college and persisting (Karp & Hughes, 2008; Whitaker, 2011).

Further research examining persistence rates in postsecondary education for Dual Credit/SWAC students may be useful in the future to determine the full impact of these programs. It would also be useful to conduct a system-wide measurement of the efficacy of Dual Credit/SWAC in Ontario colleges.

1. Introduction

The Community Partnerships Office at George Brown College (GBC) develops and delivers a number of government-funded initiatives that address access and barriers to postsecondary education by creating new pathways for non-traditional students. Two of these initiatives are the Dual Credit program and the School Within a College (SWAC) program. These programs allow students who are still in secondary school to take one or more courses at a local college and earn both a high school credit toward their Ontario Secondary School Diploma (OSSD) as well as a college credit from GBC.

The SWAC program model was developed as an intensive pathway for disengaged high school students to earn secondary-level credit courses while also earning additional college credits. The Dual Credit program is intended to assist secondary school students in their completion of their OSSD and in transitioning successfully to college and apprenticeship programs. Students also gain the opportunity to explore different careers. The major differences between the two programs are that SWAC is a full-day program with class in the morning at the host institution and co-operative education in the afternoon with employers. SWAC students, although registered as high school students, are completely immersed in college life. Students in the Dual Credit program simply come to the college for the specific postsecondary-level course in which they are enrolled, usually once a week. SWAC is focused on engaging students who have been disengaged and at risk of not graduating, while the Dual Credit program targets students who may be at-risk, need learning opportunities outside of high school and would benefit from a college or apprenticeship experience. SWAC students tend to have a lower number of high school credits when entering the program than do Dual Credit students. The general focus of each program is also different. SWAC is designed for maximal credit accumulation to bring students as close to graduation as possible, while Dual Credit is focused on giving students a taste of college life.

Dual credit students must be registered in high school in either grade 11 or grade 12 to participate. However, students who have left high school without completing may enroll as SWAC students, at which point they will be registered in a high school. Students must complete an application and an interview process in order to be selected for the SWAC program, whereas Dual Credit students are recommended by teachers, guidance counselors, principals or student success teams. Programs last one semester, operating on the same schedule as high schools in Ontario (Ontario Ministry of Education, 2013). The programs are funded jointly by the Ontario Ministry of Education and the Ministry of Training, Colleges and Universities and are only offered by community colleges.

Preliminary exploration of data collected on the Dual Credit and SWAC programs by the Community Partnerships Office at George Brown College revealed that student participants are ethnically diverse, identify financial constraints as getting in the way of pursuing postsecondary education, and are personally motivated to attend postsecondary education yet need help with their academic goals (Pipitone & Segedin, 2011). Educators recognize that students must be motivated and academically prepared for the Dual Credit and SWAC programs to be successful in helping them transition to postsecondary education.

Overall, this project looks at the educational outcomes of students who participated in the Dual Credit and SWAC program at George Brown College in Winter 2012. It examines the effect of the outreach, transition and retention strategies designed to attract students to the programs and explores whether motivation and academic preparation are related to student outcomes. This project began with a literature review, which provided guidance in constructing the four surveys administered to program participants at the beginning of the program, end of the program, six months post-completion and one year post-completion.

2. Review of Literature

Exploration of Dual Credit and SWAC Programs

Dual Credit programs have existed in Canada for close to 15 years and in Ontario for almost ten (SCWI Newsletter, 2006). In early 2011, over 10,000 students were registered in over 400 dual credit courses across 24 colleges in Ontario. The School Within a College program, on the other hand, was developed more recently, in 2008 by the Ontario Ministry of Education. By 2010, 21 SWAC programs were in operation across Ontario, with 892 students registered (SCWI Newsletter, 2011). In the early years of Dual Credit implementation, there was little coordination and support between government, secondary and postsecondary systems to ensure the effective delivery and evaluation of these access pathways (Watt-Malcolm, 2011). Consequently, in an effort to better coordinate the objectives within these programs, the Dual Credit and SWAC programs became part of the larger School to College to Work Initiative, which is now entrenched in the province of Ontario's Ministry of Education's Student Success/Learning to 18 (SS/L18) Strategy. Providing students with the tools to complete their secondary schooling successfully and reach their postsecondary goals, the SS/L18 Strategy focuses on maintaining a coordinated support system that encourages the development of innovative and flexible educational opportunities for students (Canadian Council on Learning, 2008).

The majority of research on dual credit programs has focused on the American setting. However, more research is being performed with Canadian dual credit programs as of late. Dual enrolment programs, as they are called in the United States, have been offered there for over three decades. Some states are only now beginning to operate dual credit/enrolment programs in their jurisdictions, while others, such as New York and Florida, have delivered dual enrolment programs for over 20 years as a strategy to increase college graduation rates and build a stronger workforce (Hoffman, 2005). But even with the growing popularity of dual credit programs in Canada and of similar dual enrolment programs in the US, there is still little research and conclusive evidence that demonstrates the effectiveness of such programs, especially for increasing students' access to postsecondary education and subsequent completion (High School Leadership Summit, 2004; National High School Center, 2007).

Past studies of dual credit programs have generally been descriptive, focused on student attitudes and opinions. The Ministry of Education's *2009-10 Dual Credit Student Data Report* provides data on the growing number of students participating in dual credit programs across Ontario, identifying completion rates, success rates and lessons learned. Similarly, studies by Humber College and Fleming College discuss how dual credit programs influence students' knowledge and awareness of career options, their decisions to pursue postsecondary and their confidence levels (Harrison, 2011; Fleming Data Research, 2011). A recent case study showed that the dual credit course at St. Lawrence College was considered a success by students, parents and staff (Whitaker, 2011). As well, George Brown College's review of its SWAC program in 2011 showed a 92% retention rate, an 85% credit completion rate, and a large percentage of students indicating that they were more inclined to consider enrolling in a postsecondary program as a result of their participation in the SWAC program (Pipitone & Segedin, 2011). While these studies provide a variety of relevant data, there is a lack of available information on the academic and postsecondary trajectories and transition outcomes of student participants.

Studies in the United States continue to investigate the effectiveness of dual enrolment programs (Clark, 2001; Bragg, 2001; Karp & Hughes, 2008). A study by Karp and Hughes (2008) attempts to better ascertain the impact of dual credit programs by tracking students participating in dual enrolment programs in New York City and Florida State from high school to college. In addition, the authors have accessed information on participants' high school grades and college transcripts, and reviewed and compared data on those students who took dual enrolment courses with those who did not. The study also controlled for students' pre-existing characteristics (grades and socioeconomic background) while participating in dual enrolment. The findings

suggest that there are positive outcomes for students who participate in dual enrolment in comparison to those who do not, including higher GPAs, a greater likelihood of pursuing college and of persisting once in college full-time. In terms of Canadian data, a recent study looked at dual credit students at Fleming College and found that students who had participated in dual credit had similar levels of academic success to non-dual credit students despite their at-risk status (Philpott-Skilton, 2013).

Academic Preparation

Being academically prepared to attend a postsecondary institution is a critical component of achieving access and is strongly correlated with persistence and success once a student has been admitted. Students from underrepresented groups often are underprepared academically for college programs and require academic upgrading and contextualized supports to succeed in the postsecondary environment. The Higher Education Quality Council of Ontario (2008) found that non-completion of high school and delayed (non-sequential) completion are also factors deterring students from postsecondary participation, with those non-completers who return to secondary school and move on to postsecondary education finding it more difficult to return to and complete their education than students who complete their secondary education sequentially.

Motivation

Motivation, or aspiration, for higher education is identified as another important factor influencing participation in postsecondary education. Studies of young people out of high school have identified a lack of motivation as being more important than other factors in influencing their decisions not to go on to postsecondary education (Berger et al., 2007). Motivation is often hard to determine (Winn, 2002) and can be tied up with other factors, such as parental income, and studies show that individuals from lower-income families are more likely to report not being motivated to go on to postsecondary education.

Outreach, Transition and Retention

Successful recruitment, transition and retention strategies for underrepresented students need to begin in high school, preferably in the early years, to create a sense that postsecondary education is a possibility. Since preparation for postsecondary education begins when critical course choices are made early in high school, early outreach and engagement are essential to ensure that students develop a sense of their potential, know the opportunities available to them at the postsecondary level and understand the steps they need to take to get there. These early, introductory steps build comfort and familiarity with the new environment (Engle, 2007). A focus on informing and building capacity to disseminate critical information to guidance counselors and high school teachers is important to ensure that the systems in which these young people are being educated are able to support and develop their future educational aspirations. Early engagement and meaningful contact with all students at the critical juncture of transition from secondary to postsecondary education can have an impact on students' desire to continue and commit to the institution and course of study. Studies have shown that the greatest proportions of students who leave postsecondary education are likely to do so within the first semester (Thayer, 2000). This underscores the importance of retention strategies. Helping students find their place and maintain enrollment in postsecondary education depends on individualized support and intervention early in the transition process to orient and integrate students who otherwise tend to face barriers of isolation and lack of preparation.

3. Methodology and Data Collection

This project examined the educational outcomes of students who participated in the Dual Credit and SWAC program at George Brown College in Winter 2012. It investigated the effect of the outreach, transition and retention strategies designed to attract students to the programs and explored whether motivation and academic preparation were related to student outcomes.

Informed by the literature review, four questionnaires were developed and administered to Dual Credit and SWAC program participants at four specific time points: one month after beginning the program (Time 1 or T1), upon completion of the program (Time 2 or T2), six months after program completion (Time 3 or T3) and one year after program completion (Time 4 or T4). The sample came from the same population at each time point, but due to the transitory qualities of the population only 12 students completed every questionnaire. The questionnaires consisted of multiple closed- and open-ended questions, with some questions modified from the Youth in Transition Survey (YITS) developed by Statistics Canada. The YITS survey was “designed to examine the major transitions in the lives of youth, particularly between education, training and work” (Statistics Canada, 2007). It also helps provide insight into youth educational perspectives, attitudes and behaviours, making it appropriate for use in this study.

The surveys assessed retrospective engagement and satisfaction with the programs, any challenges students faced and successes they achieved, continued aspirations and motivations, and whether or not they pursued and enrolled in postsecondary programs. The Community Partnerships Office student database was used to review and track student demographics, attendance, grades and completion rates.

Participants were recruited from both the Dual Credit and School Within a College programs delivered by the Community Partnerships Office at George Brown College. The sample was made up of participants who provided a telephone number as well as consent to contact at T1 (n=281 at T1, n=250 at T2, T3 and T4). The T1 and T2 surveys were administered in class, while the T3 and T4 surveys were done over the phone. Contacting students in T3 and T4 proved to be difficult, as six months to one year had passed since completion of the program. Please note that not all survey questions have a full participation rate as some respondents chose not to answer all questions. See Appendix A for full surveys.¹

Table 1: Margin of Error: T1-T4

	Population	Responses	Margin of Error* (+/-)
<i>Time 1 Survey</i>	281	113	7.1%
<i>Time 2 Survey</i>	250	134	5.8%
<i>Time 3 Survey</i>	250	47	12.9%
<i>Time 4 Survey</i>	250	83	8.8%

*Margin of error was calculated using the Margin of Error Calculator from the American Research Group

Sample sizes were very different. Initially, the only students who were to be contacted were students who had previously completed a survey (e.g., the only students contacted for T3 would be students who completed T1 and T2). However, the sample sizes were so small that the pool was increased to include students who had not completed any previous surveys. These small sample sizes were a result of sampling a highly transient population (e.g., many students changed phone numbers and email addresses after high school), as well as

¹ Appendix A is available in a separate document upon request to HEQCO.

student absences during the in-class surveys. As a result, not all statistical analyses that had been originally planned were performed.

4. Findings

Demographics

Students surveyed at T1 were 53.6% male and 46.4% female. Most of the students enrolled in the Dual Credit/SWAC program lived at home at T1. 79% of students lived at home and did not pay rent, while 14% lived at home and paid full or partial rent. 62% of the students were not working at the time, while 37% were employed part-time and 1% were employed full-time. 41% of students described their financial situation as a little or very tight, with 3% of students living from hand-to-mouth every day (see Table 2). 84.5% of participants were Canadian citizens, 10% were landed immigrants and 5.5% identified as “Other” (refugee status or did not specify). About 10.2% of respondents considered themselves to be a person with a disability. Of these, 7% self-identified as having a learning disability, 1.8% reported having reading challenges and 1.8% reported a physical disability.

Table 2: Demographic Information: T1 Survey (n=113)

Program	
<i>Dual Credit</i>	91.5%
<i>SWAC</i>	8.5%
Gender	
<i>Male</i>	53.6%
<i>Female</i>	46.4%
Household	
<i>Live alone</i>	6%
<i>Live with one parent</i>	36%
<i>Live with both parents</i>	50%
<i>Other (e.g., with legal guardian, unstable housing)</i>	8%
Financial Housing Situation	
<i>Live at home and do not pay rent</i>	77%
<i>Live at home and pay partial rent</i>	10%
<i>Live at home and pay full rent</i>	4%
<i>Live alone and pay market rent</i>	3%
<i>Live alone and do not pay market rent</i>	2%
<i>Other (rooming house, etc.)</i>	4%
Employment Status	
<i>Not working</i>	62%
<i>Employed part-time</i>	37%
<i>Employed full-time</i>	1%
Financial Situation	
<i>Rarely worry about financial situation</i>	29%
<i>Worry a little about financial situation</i>	31%
<i>A little tight but I know it will get better</i>	23%
<i>Very tight, really have to watch every dime spent</i>	12%
<i>Living from hand-to-mouth every day</i>	3%

Citizen Status	
<i>Canadian citizen</i>	84.5%
<i>Landed immigrant</i>	10%
<i>Other</i>	5.5%
Program	
<i>Dual Credit</i>	91.5%
<i>SWAC</i>	8.5%
Disability Status	
<i>No disability</i>	89.8%
<i>With a disability</i>	10.2%
<i>Learning disability</i>	7%
<i>Reading challenges</i>	1.8%
<i>Physical disability</i>	1.8%
<i>Addiction</i>	1%
<i>Other</i>	1%

Academic Preparation: Pre-Program Performance (T1)

Prior to Dual Credit/SWAC, 78% of participants attended classes all year with no interruptions. At the beginning of Dual Credit/SWAC, 93% of the students indicated that they felt prepared for the program (see Table 3).

Table 3: Program Information: T1 Survey (n=113)

High School Attendance	
<i>All year (no interruptions)</i>	78%
<i>Withdrawn for over 1 year</i>	5%
<i>Withdrawn for more than 6 months</i>	6%
<i>Withdrawn for more than 3 months</i>	5%
<i>Withdrawn for less than 3 months</i>	6%
Preparedness for the Dual Credit/SWAC Program	
<i>Yes, feel prepared for the program</i>	93%
<i>No, do not feel prepared for this program</i>	7%

84% of the Dual Credit/SWAC students were in grade 11 or 12 at T1. The remaining 16% were taking extra credits or doing an extra year of high school. 40% had an Individual Education Plan, which is a plan detailing the special education program needed by the student. IEPs are required for any student who has been formally identified as exceptional, as well as students who have been determined by the school principal to require assessment on the basis of modified expectations or who regularly required accommodations (Ontario Ministry of Education, 2004). 17% of students were enrolled in ESL classes at school. 64% of students were first-generation students, meaning that neither of their parents had a college or university degree. The most common highest educational level for both mothers and fathers was a high school diploma (36%) (Table 4).

Table 4: Educational Background: T1 Survey (n=113)

Current Education Level	
Grade 11	9%
Grade 12	75%
Other (e.g., extra credits, extra year)	16%
Have an Individual Education Plan in Secondary School	
Yes	40%
No	60%
Enrolled in ESL classes	
Yes	17%
No	83%
First-Generation Student	
Yes	64%
No	36%
Highest Education Level of Mother	
High school diploma	36%
Some postsecondary education	20%
College diploma, trade/vocational certificate, or registered apprenticeship	18%
University bachelor's degree	12%
Graduate degree (master's or doctorate)	5%
Other (e.g., less than high school, never been to school, unsure)	9%
Highest Education Level of Father	
High school diploma	36%
Some postsecondary education	13%
College diploma, trade/vocational certificate, or registered apprenticeship	18%
University bachelor's degree	12%
Graduate degree (master's or doctorate)	5%
Other (e.g., less than high school, never been to school, unsure)	16%

The Toronto District School Board provided the participants' grade averages in all English, math, science and civics courses taken in high school since grade 9, in addition to the average mark for courses taken in the first half of the 2011-2012 academic year, immediately preceding participation in the DC/SWAC program. Grades were categorized into low, average and high using GBC's grading classification system (Table 5).

As shown below in Table 5, participants' historic performance in core subject areas (English, math, science and civics) was relatively low in high school. This was especially true in math where, on average, participants scored 56 out of 100. It is therefore not surprising that a large proportion of participants in the DC/SWAC program (46.6%) self-reported underperforming in high school during the first half of the 2011-2012 academic year, immediately prior to DC/SWAC, with marks ranging from 0 to 62. Not all grades could be included due to missing data.

Though nearly half of the population underperformed in the months leading up to the program, 93% reported feeling prepared for Dual Credit/SWAC (see Table 3). This may be due to the population that is targeted by Dual Credit/SWAC recruiters. In order to be admitted into the program, prospective SWAC students must pass an interview and demonstrate that they are ready to recover credits and move towards graduation. Dual Credit students must be chosen by guidance counselors, teachers or administrators as appropriate candidates for that program.

Table 5: Available High School Grades (n=161)

Average Grade for all English, Math, Science and Civics Courses taken in HS prior to DC/SWAC	
<i>Avg. English grade</i>	62%
<i>Avg. math grade</i>	56%
<i>Avg. science grade</i>	60%
<i>Avg. civics grade</i>	63%
Average Grade Average in First Half of 2011-2012 Academic Year Preceding DC/SWAC	63%
<i>% Participants with low, average and high grades</i>	
<i>Low (0-62)</i>	46.6%
<i>Average (63-72)</i>	17.4%
<i>High (73-100)</i>	36.0%

When asked about the current level of support from parents and peers at T1, 57% of students indicated that the level of support they received from their parents was strong, while 35% indicated that they received strong support from their peers. 71% of students indicated that access to financial resources would help them succeed in a future postsecondary program. 68% also indicated family support and trust as influential in their postsecondary education success (see Table 6).

Table 6: Support: T1 Survey (n=113)

Level of Support	
<i>Peers (strong/some)</i>	35%/42%
<i>Parents (strong/some)</i>	57%/26%
Top Three Supports that would Help Succeed in Future Postsecondary Program	
<i>Financial resources</i>	71%
<i>Family support and trust</i>	68%
<i>Peer encouragement/support</i>	22%
<i>Teacher encouragement/support</i>	45%
<i>Good health</i>	40%
<i>Moral/spiritual supports</i>	22%

*Total may add up to more than 100% because of multiple responses

In the T1 survey, the majority of students in the Dual Credit/SWAC program learned about the program through institutional connections (95%). Within these connections, most students used guidance counselors (63%) and high school administrators or teachers (50%) (see Table 7).

Personal connections were the second most commonly cited by students. Within these connections, friends and acquaintances were drawn upon most often to learn about the program (80%). The internet was the most common media connection used (46% of students who media connections noted using the internet).

Table 7: Program Connections: T1 Survey (n=113)

Institutional Connections (95%)	
<i>High school guidance counselor</i>	63%
<i>High school administrator or teacher</i>	50%
<i>College instructor/professor</i>	2%
<i>College staff</i>	1%
<i>Youth worker</i>	1%
<i>Parole officer</i>	0%
<i>Other (e.g., co-op teacher)</i>	12%
Personal Connections (39%)	
<i>Friend or acquaintance</i>	80%
<i>Neighbor</i>	0%
<i>Parent or guardian</i>	9%
<i>Relative (cousin, aunt, uncle, etc.)</i>	7%
<i>Other</i>	5%
Media Connections (31%)	
<i>Internet</i>	46%
<i>Brochure or handout</i>	37%
<i>Promotional video</i>	9%
<i>Other (e.g., GBC website, teacher)</i>	17%

Participants were asked about what they hoped to achieve as a result of completing their program at T1, as well as retrospectively at T4. The most popular answers remained the same at both intervals. These included to “better plan my future and develop personal strategies for what I want to achieve” (76% at T1 and 89% at T4) and to “give me a chance to learn new skills” (70% at T1 and 94% at T4) (Table 8).

Table 8: Anticipated Results: T1 (n=113) and T4 (n=84)

Anticipated Results of Completing Program	T1	T4
<i>Give me a chance to learn new skills</i>	70%	94%
<i>Better plan my future and develop personal strategies for what I want to achieve</i>	76%	89%
<i>Help me connect with other resources that could provide general advice</i>	36%	87%
<i>Feel better about myself (increased self-esteem)</i>	32%	76%
<i>Help me with my with academic work</i>	49%	79%
<i>Better ability to stick to a task or get job completed</i>	39%	78%
<i>Help me connect with resources that could provide financial assistance</i>	30%	50%
<i>More confidence about what next steps are</i>	52%	82%

Post-Program (T2)

Overall, the majority of the students surveyed at T2 were satisfied with the courses taken during the Dual Credit/SWAC program; 73% of all students were very satisfied, while 24% of students were somewhat satisfied. Overall, 95% of students rated the teaching method used by their instructors as good or very good.

Although the courses taken by students varied, most students indicated that the courses were very or somewhat helpful in developing a wide range of skills, from writing, reading and speaking skills to thinking critically, solving problems effectively and increasing self-confidence (see Table 9).

Table 9: Skills Developed: T2 Survey (n=134)

Skills Developed During Program	Very/Somewhat Helpful
<i>Writing skills</i>	71%
<i>Reading skills</i>	72%
<i>Speaking skills</i>	73%
<i>Computer skills</i>	56%
<i>Technology skills</i>	66%
<i>Think critically</i>	95%
<i>Solve problems effectively</i>	91%
<i>Work effectively with others</i>	86%
<i>Learn on your own/improve your study process</i>	97%
<i>Increase your self-confidence</i>	95%
<i>Manage your time efficiently</i>	87%

Motivation

At T1, participants reported different sources of internal and external motivation. Almost all participants reported feeling that Dual Credit/SWAC would help them achieve their personal/development goals as a source of internal motivation. Externally, the most common motivation for participating was feeling that it would help them plan a career (78%) or help them achieve academic goals (70%).

Table 10: Aspirations and Motivations: T1 Survey (N=113)

Internal/Personal Motivations	
<i>I felt it would help me with my personal development goals</i>	93%
<i>My teacher convinced me to participate</i>	57%
<i>My parents convinced me to participate</i>	28%
<i>Other (e.g., prep for college, need credits, work/postsecondary experience)</i>	28%
<i>My friends were participating so I decided to participate too</i>	18%
External Motivations	
<i>I felt it would help me plan my career</i>	78%
<i>I felt it would help me with my academic goals</i>	70%
<i>I felt it would help me acquire specific work-related skills</i>	46%
<i>I felt it would help me get a job</i>	30%
<i>I needed a few more credits to graduate from high school</i>	23%
<i>Other (e.g., extra credits, great opportunity, college experience)</i>	10%
<i>I had no choice – It was a requirement of the program I enrolled in</i>	5%

Participants were asked about how their motivation to attend postsecondary education had changed at T2, T3 and T4. By the end of the program (T2), 51% of participants reported being more motivated to attend postsecondary education. Feelings of motivation seemed to stabilize as time went on after program completion. At T3 and T4, many participants noted that their motivation to attend postsecondary education was unchanged since the last time they were surveyed. This number increased at each time point.

Table 11: Motivation: T2 (n=134), T3 (n=47) and T4 (n=84)

Current Level of Motivation	T2	T3	T4
<i>I have become more motivated to attend postsecondary education</i>	51%	38%	42%
<i>My motivation to attend a postsecondary program has not changed</i>	48%	54%	57%
<i>I am less motivated to attend a postsecondary program</i>	2%	6%	1%

Educational Goal

Participants were also questioned about their educational goals at each time point. At T1, the most popular educational goal was a college diploma (35%), followed by a graduate degree (31%) and a university bachelor's degree (23%). At T4, college was still the most popular goal (49%), followed by a university bachelor's degree (28%) and a graduate degree (13%).

Table 12: Educational Goals at T1 (n=113) and T4 (n=77)

Educational Goals	T1	T4
<i>High school diploma</i>	6%	5%
<i>College diploma, trade/vocational certificate, or registered apprenticeship</i>	35%	49%
<i>University bachelor's degree</i>	23%	28%
<i>Graduate degree (master's or doctorate)</i>	31%	13%
<i>Don't know</i>	6%	3%

Barriers to Education

At T1 and T2, participants were asked about barriers they faced to pursuing postsecondary education. Results were re-categorized into six broad areas (Table 13).

Between the two time intervals, the number of participants reporting no educational barriers increased by 16%, while every other category of barriers decreased. These results may be due to the different sample populations at the two time intervals rather than a real decrease in the proportion of participants experiencing barriers. In both surveys, financial and academic reasons were cited as main barriers. A comparatively lower proportion of students also mentioned lack of knowledge about programs and lack of motivation as barriers to achieving their educational goals.

Table 13: Barriers to Educational Goal: T1 (n=113); T2 (n=134)

<i>Barriers</i>	<i>Barriers to Educational Goal</i>	<i>T1 n=113</i>	<i>T2 n=134</i>
	<i>None</i>	32%	48%
<i>Financial</i>	<i>It costs too much to go to college or university</i>	34%	32%
	<i>I need to work and earn money now</i>	39%	20%
<i>Academic</i>	<i>Not able to get into a program because my marks are too low</i>	24%	17%
<i>Personal</i>	<i>I don't have enough interest or motivation</i>	10%	5%
	<i>School is too far and I want to stay close to home</i>	1%	3%
	<i>I have to take care of my children and have no time for school</i>	4%	1%
	<i>My physical/mental health is getting in my way</i>	6%	5%
<i>Knowledge</i>	<i>I don't have enough information about the programs</i>	11%	7%
<i>Other</i>	<i>Other</i>	5%	6%

At T3 and T4, participants were asked whether the barriers they faced had changed. A higher proportion of respondents reported reduced barriers or no barriers preventing them from reaching their goals at T4 than at T3. As well, more respondents reported new barriers.

Table 14: Educational Barriers: T3 (n=46) and T4 (n=84)

Educational Barriers	T3	T4
<i>No, nothing has changed since last survey</i>	78%	44%
<i>Yes, encountering some new barriers in addition to old barriers</i>	11%	14%
<i>Yes, encountering some barriers but not as bad as before</i>	0%	23%
<i>Yes, now nothing is preventing me from reaching my goals</i>	11%	20%

Current Activities

Transition to PSE

In the T4 survey, participants were asked how committed they felt to their educational goals. 80% of participants felt very committed, 17% felt somewhat committed and 3% felt not very committed.

Table 15: Commitment: T4 (n=82)

Commitment to Educational Goals	
<i>Very committed</i>	80%
<i>Somewhat committed</i>	17%
<i>Not very committed</i>	3%

Participants who applied or were planning to apply to postsecondary education largely found out about their program of interest from books or websites (45%), followed by teachers/guidance counselors (18%), the high school (16%), family/friends (11%), their own interest (5%), school recruitment (4%) and parents (1%).

Table 16: Information Seeking: T4 (n=74)

Find out about PSE Program	
<i>Books/websites</i>	45%
<i>Teachers/guidance</i>	18%
<i>Information found at high school</i>	16%
<i>Family/friends</i>	11%
<i>Own interest</i>	5%
<i>School recruitment</i>	4%
<i>Parents</i>	1%

Participants were also asked how long they knew that they would attend postsecondary education. Most participants stated that they had known for one, two or three years (23%, 20% and 26%, respectively), while 27% stated that they had known for four or more years.

Table 17: How Long Students have known about PSE Attendance: T4 (n=74)

How long have you known?	
<i>1 year</i>	23%
<i>2 years</i>	20%
<i>3 years</i>	26%
<i>4 years</i>	16%
<i>5 years</i>	2%
<i>Longer than 5 years</i>	9%
<i>Unsure</i>	2%

Reasons for Applying to PSE

Participants were asked to rate whether reasons for applying to postsecondary education were major reasons, minor reasons or not reasons at all for them. At T3, the highest percentage of students rated the major reason to apply to postsecondary as to prepare for employment or a career (89%). At T4, the highest rated major reason was to improve chances for career advancement (84%) and to pursue an interest (84%). The biggest differences in reasons from T3 to T4 were found in the responses “could not find a job I wanted or liked” (22% rated this as a major reason in T3, while 40% did in T4) and “encouragement from others” (34% rated this as a major reason in T3, while 55% did in T4).

Table 18: Reasons for Applying: T3 (n=18) and T4 (n=48)

	Major Reason		Minor Reason		Not a Reason	
	T3	T4	T3	T4	T3	T4
<i>To prepare for employment/career</i>	89%	80%	0%	16%	11%	4%
<i>Could not find a job I wanted or liked</i>	22%	40%	39%	27%	39%	34%
<i>To improve my chances for career advancement</i>	72%	84%	28%	16%	0%	0%
<i>Potential to make more money</i>	67%	71%	17%	25%	17%	4%
<i>To get diploma</i>	84%	80%	17%	18%	0%	2%
<i>Encouragement from others</i>	34%	55%	50%	39%	17%	6%
<i>To prep for further PSE</i>	78%	79%	17%	19%	6%	2%
<i>To pursue an interest</i>	89%	84%	11%	16%	0%	0%

Postsecondary Education

Students were asked about their current activities at both T3 and T4. At T3, participants were fairly evenly split between college, high school and employment (35%, 31% and 28%, respectively). At T4, the highest percentage of participants was pursuing college (49%), with employment (34%) and university (12%) next, followed by high school (5%).

Table 19: Current Activity: T3 (n=45) and T4 (n=82)

Post-Dual Credit/SWAC	T3	T4
<i>Working or pursuing employment</i>	28%	34%
<i>High school</i>	31%	5%
<i>Pursuing or in college</i>	35%	49%
<i>Pursuing or in university</i>	4%	12%

Of the students who had not applied to postsecondary education, only 9% reported that they did not plan to apply within the next year.

Table 20: Applied to College or University: T4 (n=82)

<i>Yes</i>		62%
<i>No</i>		38%
<i>I plan to apply next year</i>	90%	
<i>I do not plan to apply next year</i>	9%	

92% of participants agreed that the program met their expectations and 85% agreed that the program made a difference in whether they chose to attend postsecondary education. 90% agreed that Dual Credit/SWAC assisted them in being ready to apply and attend postsecondary education.

Table 21: Expectations: T4 (n=83)

Program Met Expectations	T4
Yes	92%
<i>Somewhat</i>	3%
No	5%
Made Difference in Choice for PSE	
Yes	85%
No	15%
Assisted in Being Ready to Apply and Attend Postsecondary Education	
Yes	90%
No	10%

Pursuing PSE vs. Working

At T4, 84% of students in postsecondary education felt very committed to their educational goals, compared to 72% of students who were working. However, this difference was not found to be statistically significant using a Chi-square test for independence, $\chi^2(4, n=83) = 5.05, p=.28$.

Table 22: Commitment to Educational Goals: T4 (n=76)

	Working (n=28)	PSE (n=48)
<i>Very committed</i>	72%	84%
<i>Somewhat committed</i>	20%	16%
<i>Not very committed</i>	8%	0%

There were no large differences in motivation, educational goals or feeling whether it was possible to attend postsecondary education between students who were working and students engaged in postsecondary education at T4. However, a higher proportion of students in PSE than working students reported facing no or fewer barriers.

Table 23: Barrier Changes: T4 (n=76)

	Working (n=28)	PSE (n=48)
<i>Nothing is now preventing me from my goals</i>	12%	26%
<i>Yes, still encountering some barriers but not as bad</i>	32%	16%
<i>Yes, more barriers</i>	20%	10%
<i>No change</i>	36%	48%

When cross-referenced with T1, 63% of respondents at T4 were pursuing or enrolled in postsecondary education, compared to 37% who were working. 53% of students in postsecondary education at T4 reported no barriers to PSE compared to 18% of working students.

Financial barriers to postsecondary education were still top of mind for respondents at T4. The *need to work to earn money* was cited as a barrier by almost one-third of respondents, regardless of whether they were working or pursuing PSE. A slightly higher proportion of working students than students pursuing or engaged in PSE (18% and 11%, respectively; Table 24) still believed that the cost of college or university was too high.

As well, the percentage of working students who reported marks as a barrier to postsecondary education was 11% higher than that for students pursuing or engaged in PSE. The perception that working students at T4 faced a barrier of low marks appears to be accurate. Students working at T4 had lower grades both before and during Dual Credit/SWAC than students in college and university at T4 (Table 25).

Table 24: Barriers at T1 by Current Activities at T4 (n=30)

T1	T4	
	Working (n=11)	PSE (n=19)
No Barrier – <i>Nothing in my way</i>	18%	53%
Financial		
<i>It costs too much to go to college and university</i>	18%	11%
<i>Need to work and earn money now</i>	27%	32%
Academic		
<i>Not able to get into a program because of my marks</i>	27%	16%
Other		
<i>Not enough interest or motivation</i>	18%	11%
<i>Physical or mental health is getting in the way</i>	9%	5%
<i>I don't have enough information about the programs</i>	9%	5%

Table 25: Grades by Current Activities: T4 (n=72)

	Mean Grade before Dual Credit/SWAC	Mean Dual Credit/SWAC Grade
<i>Working</i>	55%	65%
<i>College</i>	66%	76%
<i>University</i>	79%	83%

In terms of whether the Dual Credit and SWAC programs made a difference in students choosing postsecondary education, the percentage of students who were working at T4 and who reported that the program made a difference was 15% higher than for students engaged in postsecondary education at T4. 90% of students who were working at T4 reported that they planned to pursue postsecondary education in the next year.

Table 26: Dual Credit/SWAC Made a Difference in Choosing PSE by Current Activities at T4 (n=80)

	Working	PSE
Yes	96%	81%
No	4%	19%

SWAC and Dual Credit Differences

Though Dual Credit and SWAC are similar programs, differences still exist between the two. The structure and participants are different, as SWAC immerses students completely in college life and is focused on higher credit accumulation, while Dual Credit is focused on giving students a taste of college life. Prior to entry, the mean grade of the total population of Dual Credit students was 16% higher than the mean grade of the total population of SWAC students. However, this gap appears to have closed by the end of the program, when the mean program grade was only 3% higher in Dual Credit.

Table 27: Mean Grades of Students both prior to and once in Program (n=138 (Dual Credit); n=24 (SWAC))

Dual Credit/SWAC	Dual Credit	SWAC
<i>Grade average prior to Dual Credit/SWAC</i>	65%	49%
<i>Grade average earned at Dual Credit/SWAC</i>	74%	71%

*Please note the smaller SWAC sample size is reflective of the smaller SWAC class size of 24 participants compared to Dual Credit's 250.

Table 28: Currently Activity: T4 (n=71 (Dual Credit); n=10 (SWAC))

Post-Dual Credit/SWAC	Dual Credit	SWAC
<i>Working or pursuing employment</i>	28%	50%
<i>High school</i>	6%	0%
<i>Pursuing or in college</i>	52%	50%
<i>Pursuing or in university</i>	14%	0%

The last major difference was in the influence of Dual Credit/SWAC on participants' decision to attend postsecondary education. 100% of SWAC students affirmed that SWAC made a difference in their choice, compared to 82% of Dual Credit students. 18% of Dual Credit students noted that the program did not make a difference in whether they attended postsecondary education. Some comments from Dual Credit students asserted that they already had their minds made up about postsecondary education:

No, I always knew I wanted to do it, I just wanted experience. (Dual Credit student)

No, I've known for a long time. (Dual Credit student)

No, I always knew. (Dual Credit student)

Table 29: Did DC/SWAC Make a Difference in whether you Chose to Attend PSE? T4 Survey (n=71 (Dual Credit); n=10 (SWAC))

	DC	SWAC
Yes	82%	100%
No	18%	0%

5. Discussion

The objective of this research was to examine the effectiveness of the Dual Credit and School Within a College (SWAC) programs at George Brown College in helping students transition into postsecondary education. The project also explored barriers and types of outreach and connections that best promote access to postsecondary education.

Dual Credit/SWAC students

The School Within a College and Dual Credit programs at George Brown College are directed primarily towards students who are “at risk of not graduating, disengaged and underachieving” (Community Partnerships Office, n.d.). Indeed, the profiles of program students prior to enrolling in Dual Credit and SWAC at George Brown College show this to be true.

Students in the DC/SWAC programs had low entering high school marks, low parental education levels, and faced barriers to accessing postsecondary education. The GPA prior to entering Dual Credit and SWAC was 63%. This is at the low end of the “average” range based on George Brown College’s grading system. The average grades in math and science (56% and 60%, respectively) were also both in the low range. The most frequently reported barriers were financial barriers (the cost of education as well as the need to earn money now) and academic barriers (insufficient grades).

Outreach and Transition

Institutional connections (95%), especially with high school guidance counselors and administrators, were cited as the primary source of information about the Dual Credit/SWAC program. Of those who pursued postsecondary education, close to half of DC/SWAC participants used books or websites to find about their programs of interest, while teachers/guidance counselors and information provided by high schools were the second and third most commonly cited sources. In addition, 70% of students who received support when applying to postsecondary education received it from a teacher or instructor. This emphasizes the important role of teachers and guidance counselors as gatekeepers of information about transition strategies such as DC/SWAC and postsecondary education. Equally important is the role of postsecondary education institutions as a source of program-specific information for students, teachers and guidance counselors.

At T4, students engaged in postsecondary education were asked how long they had known that they would attend postsecondary education. Typically, many students know during or before beginning high school that they will attend postsecondary education (Finnie, Childs & Wismer, 2010). However, a much lower number of currently engaged Dual Credit/SWAC students knew prior to grade 9 that they would attend. Rather, the percentage of program participants who only knew that they would attend postsecondary education at the end of or after high school was 17.4% higher among Dual Credit/SWAC students than in the population surveyed by Finnie, Childs and Wismer (2010), recipients of the Canada Millennium Scholarship Foundation’s Access

Bursary (Table 30). As a result, greater emphasis should be placed on early outreach strategies that engage students in or before grade 9 to start them thinking about postsecondary education.

Table 30: When Students Knew that they would Attend Postsecondary Education: T4 (n=82)

	Always known, or before Grade 9	Grade 9-10	Grades 11-12	At the End of and after High school
<i>Finnie, Childs and Wismer (2010)</i>	48.6%	23.8%	20.8%	6.8%
<i>GBC DC/SWAC</i>	27.2%	28.8%	19.7%	24.2%

Dual Credit/SWAC Student Outcomes

At T4, 61% of program participants were enrolled in or pursuing postsecondary education, 34% were working and 5% were still in high school. When compared to the general Ontario high school population (King et al., 2008), GBC's Dual Credit/SWAC students had 23% higher college/apprenticeship engagement and 6% lower workplace outcomes (Table 31). These high rates of college and apprenticeship engagement are consistent with the mission of the School to College to Work Initiative, which intends to assist secondary school students in the completion of their Ontario Secondary School Diploma and in their successful transition to college and apprenticeship programs. Findings from this study also point to the need for increased efforts in assisting high school students in general to transition to postsecondary education, as more than one-third of students are choosing employment over higher education attainment. This outcome may be partly explained by comparing responses from students engaged in PSE and working at T4. Working students reported more barriers to postsecondary education. Low grades were cited as the most common barrier to postsecondary education among students who were working, congruent with the fact that these students had lower grades than those of students engaged in college and university. Other barriers such as lack of motivation, lack of knowledge about programs, physical/mental health and the cost of higher education were mentioned by more working students than PSE students, though the numbers were small. Ongoing student advising that focuses on addressing students' academic and non-academic concerns should continue to be a priority for George Brown College. As well, increased focus on maintaining high school teachers and guidance counselors abreast of the resources and supports available in college is also important as they in turn can disseminate this information to their students.

Table 31: Outcomes for Students: T4 (n=82)

	High School	Workplace	College/ Apprenticeship	University
<i>King et al., 2008 (Data retrieved from OUAC and OCAS)*</i>	n/a	40%	26%	34%
<i>GBC Dual Credit and SWAC</i>	5%	34%	49%	12%

*Provincial secondary school data files from 2001-2002 to 2006-2007

Motivation

In general, motivation remained high throughout the program and the year post-completion. Motivation was not found to be correlated with students outcomes at T4 (working or pursuing PSE).

Program Effectiveness

92% of students agreed that the Dual Credit/SWAC program met their expectations a year after completing the program, with an emphasis on learning through experience. Students discussed learning about college by experiencing it:

“It encouraged me because I got more experience in how the college works and what I have to do to get good marks. I learned everything about college.” (Dual Credit participant, now enrolled in college)

This shows the importance of integrating exposure to different experiences into learning about postsecondary education. Students also emphasized the value of learning about college without the risk or pressure of committing to a completely foreign concept:

“It opened up my eyes. It seems scary from a high school perspective but when you do Dual Credit, you get to experience without the pressure of paying money.” (Dual Credit participant, now enrolled in college)

Finally, the majority of Dual Credit (85%) and SWAC students (100%) agreed that Dual Credit/SWAC made a difference in whether or not they chose to attend postsecondary education and assisted them in being ready to apply and attend postsecondary education (90%).

6. Limitations

There were some limitations to the research and its findings. The population proved to be very transient and difficult to access. Many students moved after high school and changed their phone numbers, becoming very difficult if not impossible to reach for the purposes of this study. This in turn resulted in uneven sample sizes at different survey points and few students who participated in all four questionnaires.

SWAC/Dual Credit students are subject to a selection process to gain entry to the program, which could account for the lack of relationship between motivation and commitment and academic performance. Dual Credit students are selected by teachers, while SWAC students undergo a rigorous application and interview process. Because of this selection process, the effect of commitment and motivation may be diminished as students who have low commitment and motivation would be unlikely to gain entry into the program.

7. Conclusions and Recommendations

The objective of this research was to examine the educational outcomes of students who participated in the Dual Credit and SWAC program, to explore the effect of the outreach, transition and retention strategies designed to attract students to the programs, and to consider whether motivation and academic preparation were related to student outcomes.

Findings from this study suggest that the Dual Credit/SWAC programs are effective strategies for helping students access and ease their transition into postsecondary education, accumulate credits and improve academic performance. When compared to the general Ontario high school population as a whole, a greater proportion of Dual Credit/SWAC students pursue college after high school in spite of the barriers they identify. The programs have been successful at soliciting higher grades from students in-program when compared to pre-program. Students who did not engage in postsecondary education one year after the program tended to have lower grades than the total population and noted more barriers, often including low marks. Teachers and guidance counselors were identified as primary sources for information about the Dual Credit/SWAC and as the second major source to find out about programs by those planning to apply to postsecondary education.

The following recommendations stem from the aforementioned results:

- Early outreach: in or before grade 9.
- More resources directed towards teachers and guidance counselors to aid student access to information about postsecondary education.
- Increased information about the cost of postsecondary education, scholarships, bursaries and loans, and general financial aid available to students.
- On- and off-campus employment opportunities available to students to address their concerns about the need to earn money. This also includes information about employment services available to college students (job search, access to job posting boards, résumé writing, etc.).
- Increased student advising by college staff about postsecondary education options and supports available, as many Dual Credit/SWAC students are facing academic, financial, and other personal barriers preventing them from pursuing higher education.

Further research examining persistence rates in postsecondary education for Dual Credit/SWAC students may be useful in the future to determine the full impact of these programs. It would also be useful to conduct a system-wide measurement of the efficacy of Dual Credit/SWAC for all Ontario Colleges. For future studies, contacting students using more recent modes of communication is recommended. Many students left the program and could not be contacted afterwards due to changes in email addresses and phone numbers after high school.

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