

**Effects of School-to-Work Programs on Cognitive Engagement:
Examining the Students' Perspective**

Dean Doucette

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Abstract

The aim of this study is to examine the effects of school-to-work programs on cognitive engagement from the students' perspective. The study was guided by the question: "How do students perceive their cognitive engagement in learning when participating in school-to-work transition programs"? Using a case study methodology, data were collected from ten students at a rural high school using semi-structured interviews, and were analyzed using the constant comparative method. The results show an increase in cognitive engagement and the motivation to graduate as a result of participation in the school-to-work program. This increase in cognitive engagement is attributed to the students' career preparedness, and the hands-on practical experiences gained from the program. By studying the students' perception of their own engagement we gain a better understanding of the contributing factors that lead to increased cognitive engagement and motivation levels.

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Dedication

I would like to dedicate this paper to my loving family Christine, Elise, and Chloe. Your inspiration, encouragement and endless patience made this possible.

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List of Acronyms and Abbreviations

SE	=	Student Engagement
CE	=	Cognitive Engagement
STW	=	School-to-Work Transition Program
OYAP	=	Ontario Youth Apprenticeship Program
SHSM	=	Specialized High Skills Major
Co-op	=	Cooperative Education
PE	=	Psychological Engagement
AIW	=	Authentic Instructional Work
BE	=	Behavioral Engagement
ESM	=	Experience Sampling Method
ELS	=	Educational Longitudinal Study

Chapter 1

Introduction

Engagement in learning is a key factor in determining a student's academic success and a topic that has a significant interest to me. Based on observations and conversations with the students during my 23 years of teaching, I have seen many students in my technological education classes that exhibit signs of disengagement from courses that are academic in nature, but are fully engaged in activities in my class, especially those that are more hands-on. Many of these students have little interest in post-secondary education, but may have aspirations of an apprenticeship program or other employment directly out of high school. During my teaching years, I experienced how providing students with a measure of ownership and relevance can increase engagement and it is my belief that the school-to-work transition programs currently running in Ontario schools are exciting opportunities for students to direct their own education towards an occupation that interests them, thus making learning more meaningful and relevant and increasing their engagement in learning.

In the pages that follow, I will first provide an overview of the topic of student engagement; the current literature on the topic; the theoretical framework used, the findings of the study and its implications for future studies.

Overview of Student Engagement

Student engagement (SE) in its simplest form is defined as active participation in school (Finn, 1993). In the early stages of educational development participation is measured by a set of behaviors that includes "attending school, arriving at class on time, paying attention to the teacher, and completing assigned work" (Finn, p. 1). As students progress through school these behaviors increase and at the highest level students are completely engaged when they feel a sense of belonging in the school, perceive learning as being relevant to their future, take ownership over their education, and demonstrate a continually positive attitude towards school and a desire to participate meaningfully in their own learning (Finn, 1993; Johnson, 2008; Kenny, Bluestein, Haase, Jackson, & Perry, 2006; Willms & Flanagan, 2007). Studies show that students who exhibit these behaviors have a higher likelihood of positive school outcomes such as grades consistent with abilities, a post-secondary destination, and graduation (Finn, 1993).

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In contrast, students who have not developed these behaviors early in their education are at risk of continually experiencing low achievement (Finn, 1993). As a result of continual failures, many of these students, particularly males (Archambault, Janosz, Morizot, & Pagani, 2009; Bowlby, 2005), become disengaged from formal learning. Once in high school, this disengagement can result in credit loss, behavioral problems, and possibly leaving school before completion.

Research conducted in the field of SE has shown that there are multiple factors in a child's life that can contribute to educational disengagement (Finn, 1993; Nakkula & Pineda, 2005; Rumberger, 2004; Willms & Flanagan, 2007). The most predominant factors can be separated into three distinct categories: 1) internal factors such as difficulties learning or other personality characteristics (Nakkula & Pineda, 2005; Quinn, 1991), 2) external influences such as race, socio-economic status, home life, peer groups, and a lack of positive community support (Finn, 1993; Nakkula & Pineda, 2005; Quinn, 1991), and 3) school related factors such as ineffective discipline techniques, ineffective teaching strategies, or uninteresting and irrelevant curriculum (Finn, 1993; Franklin, Streeter, Kim, & Tripodi, 2007; Quinn, 1991; Rumberger, 2004; Willms & Flanagan, 2007). Rarely does one risk factor accurately predict future negative outcomes, but a combination of factors is often detrimental to a student's development (Falls, 2008; Nakkula & Pineda, 2005; Quinn, 1991). This complex web of risk factors is made even more complex when schools fail to recognize the individual needs of students and adapt to meet those needs.

The following section provides a context for the problem of disengagement by first examining the process of disengagement leading up to a students' decision to leave high school, followed by an overview of the most common measures used to assess disengagement including early leaver rates.

The Process of Disengagement

The decision to disengage from learning is not one that a student suddenly makes. At-risk students will generally embark on a gradual process of disengaging from learning (Archambault et al., 2009; McMillan, 2010; Reschly, Huebner, Appleton, & Antaramian, 2008), which has been refer to by McMillan (2010) as "the long goodbye". This process can start as early as elementary school and steadily progress through high school. Indicators that students have become disengaged may include frequent absences, behavioral problems, risk taking behaviors

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(i.e. drug and alcohol use) or underachievement (Archambault et al., 2009; Finn, 1993; Quinn, 1991; Reschly et al., 2008; Willms & Flanagan, 2007). Another key characteristic of disengagement is a loss of credits. At the end of June in 2008-2009 only 71% of grade 10 students in Ontario had acquired the sixteen credits needed to graduate (Ontario the Ministry of Education, 2010b). Students exhibiting any combination of these indicators are considered at-risk of leaving high school before completion.

Early Leaver Rate

While many students considered at risk eventually complete high school, a large number leave before completion. In Canada, early leaver rates have been falling in recent years. The percentage of early leavers, defined as young people aged 20-24 years who do not have a high school diploma or are not enrolled in school, was 9.8% in 2004-2005 compared to 16.7% in 1990-1991 (Bowlby, 2005) and 13% in 1998 (Human Resources and Skills Development Canada, 2000). In Ontario, the early leaver rate was 9.1% in 2004-2005, compared to 14.7% in 1992-1993 (Bowlby, 2005). While it can be argued that these numbers demonstrate continual improvement in student engagement (Bowlby, 2005), they also show that nearly 10% of high school students are still becoming disengaged and leaving high school before completing their high school diploma. More recently, the Ontario Ministry of Education (2010a) reported a 79% graduation rate in 2008-2009, meaning that 21% of graduate age students did not complete high school. This would include eighteen year old students who have either left school, or are enrolled but have not completed all the requirements to earn a diploma.

The difference between the statistics from 2004-2005 and 2008-2009 is the age of the participant group. Graduation rates will be higher when studying a 20-24 year old demographic because many early leavers will either return to school or earn a high school diploma through alternative methods. This demonstrates that high schools are not meeting the needs of 21% of students forcing them to leave or obtain a diploma through alternative methods. These statistics clearly outline an ongoing problem in our schools.

Addressing the Problem

Schools have relatively little influence over the status risk factors such as home life, disabilities, race, mental illness or community influences (Finn, 1993). However, schools do have a measure of control over factors directly related to the education system (Finn, 1993). These include, but are not limited to, providing educational experiences that are interesting and

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relevant to a student's life and future goals. Research has shown an increase in cognitive engagement when students are provided with relevant and interesting learning experiences which results in increased graduation rates (Brown, 2002; Heafner & Friedman, 2008; Jensen & Burr, 2006; Kadakia, 2005; Shernoff & Vandell, 2007). Cognitive engagement (CE) is the dimension of engagement that is concerned with a student's investment in learning and is operationalized by such indicators as learning relevance, ownership, perception of ability, motivation, and self-regulatory abilities. The same research also linked CE with educational outcomes such as self-motivation, feeling that learning is relevant, self-efficacy, career planfulness and a desire to graduate. There is always a need for new and innovative school policies, curriculum, and programs that will target these dimensions of engagement. Educational reforms of this nature need to be founded in data derived from current research, therefore creating a constant demand to expand the literature on SE. This study will look specifically at the students' perception of their CE while involved in a program that is designed to give students choices that are relevant to their lives and future goals, the school-to-work transition programs.

The Research Question

In order to address the problem of student disengagement and increase graduation rates, many school districts have created a host of programs such as Ontario's school-to-work transition programs (STW) that directly target the dimension of cognitive engagement. These programs are designed to increase: 1) learning relevance, 2) ownership over learning, 3) self-motivation, and 4) self-efficacy in the students, as they "allow students to customize their high school experiences to match their strengths, interests and career goals" (Ontario Ministry of Education, 2010a). STW programs provide students with practical, hands-on experiences in a workplace or college setting while continuing to acquire credits towards a high school diploma (Ontario Ministry of Education, 2010a). In Ontario, the various programs include, but are not limited to, expanded cooperative education (co-op), a dual credit program at a community college, the Ontario Youth Apprenticeship Program (OYAP) and the Specialized High Skills Major (SHSM) program. The expanded cooperative education program, or full day co-op, allows students to earn four credits towards their diploma while gaining valuable experiences working at a placement in an occupation of their choice. The dual credit and OYAP programs, which include a half-day at a local community college and a half day co-op placement, allow students to start an apprenticeship while earning college and high school credits. The SHSM program

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offers a bundle of credits related to a specific field while being exposed to career options in that field.

The intent of this study is to contribute to the literature on SE by examining students' perception of their CE while enrolled in a STW program. The research question guiding this study is: "How do students perceive their cognitive engagement in learning when participating in school-to-work transition programs?"

Rationale for this Study

By providing insight into how students perceive their own engagement in learning while participating in a STW program, this study will contribute to the body of research on SE and help others understand the extent to which STW programs can affect student engagement. While there are many studies on SE, few have examined the connection between non-traditional forms of education such as the STW programs, and the feeling that learning is relevant to their lives and career aspirations. A few studies did find an increase in engagement when students perceived a learning experience to have some relevance to their lives (Heafner & Friedman, 2008; Kadakia, 2005; Kenny et al., 2006). Further, most studies I reviewed used questionnaires to measure student perception. Only two that I found actually interviewed the students to gather more in-depth data (Comfort & Giorgi, 1997; Ferguson, et al., 2005). This missing voice in the literature is unfortunate as students have a unique perspective and any changes to school policies or programs directly affect them (Comfort & Giorgi, 1997).

SE is an important aspect of education as it promotes student success and helps prevent early leavers. This study will seek to understand the extent to which students' perceive STW programs as being relevant and how participation in these programs affected their CE. If CE can be increased through these programs, schools will experience an increase in success with at-risk populations, resulting in fewer students requiring alternative forms of education, or dropping out completely (Franklin et al., 2007; Johnson, 2008; Kenny et al., 2006; Saunders & Saunders, 2001; Smyth & Fasoli, 2007). The following section presents the theoretical framework for this study.

Theoretical Perspective: A Model of Student Engagement

Based on Finn's theory of risk factors (1989) I have developed a model of engagement that expands upon Finn's participation-identification model (1989) to include four dimensions of engagement (Reschly et al., 2008) (see Table 1). This model includes possible ways that all four

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dimensions could be operationalized and potential data collection instruments that could be used; however, the present study will focus only on CE.

Table 1

Dimensions of Student Engagement

Finn's categories	New dimensions	Operationalized	Instrument
Participation	Academic Engagement	Credits acquired Assignment completion rate Standardized test scores Learning skill ratings	School records (i.e. report cards, Individual Education Plans)
	Behavioral Engagement	Attendance Rule conformity/infractions Extra-curricular involvement Rapport with staff	Attendance records Teacher/Administrator notes and observations
Identification	Cognitive Engagement	Feeling that learning is relevant to future goals. Self-motivation Ownership over learning Value of learning Self-efficacy	Semi-structured interviews with students
	Psychological Engagement	Sense of belonging Perception of safety Sense of respect from staff Sense of acceptance from peers	Semi-structured interviews with students

Note: Adapted from: Archambault et al, 2009; Finn, 1989; Finn 1993; Gibbons, 2008; Reschly et al, 2008; Willms and Flanagan, 2007.

Finn (1989) proposed the participation-identification model of student engagement. This model is composed of two components: a behavioral component involving regular participation in class and school activities, and an affective component that gives a student a sense of identity. The participation component is characterized by a set of behaviors that includes regular attendance, being attentive in class, and completing assignments. The identity component is

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more emotional and involves the sense of belonging in the school and valuing educational success (Finn, 1989).

More recently, many researchers have built upon Finn's (1989) work to develop a host of engagement theories and models. I have combined several works, most notably Archambault et al. (2009), Gibbons (2008), Reschly et al. (2008), and Willms and Flanagan (2007), with Finn's basic model to form the key dimensions (indicators of engagement) for the study. The indicators for the cognitive dimension provided the blueprint (see Table 1) for the data collection instrument.

Schools can have the most influence on the two dimensions of engagement under the identification domain (cognitive and psychological) through well-designed programs, such as the STW programs, and effective instructional techniques that meet the needs of the students. The focus of this study is on the cognitive dimension. Through this study I will seek to understand how students perceive their own CE and will therefore use a qualitative research methodology.

Rationale for the Use of Qualitative Methodology

The objective of this study was to gain an in-depth understanding of the students' perceptions of CE, not to uncover any definite truths or prove a hypothesis; therefore, a qualitative study would be the most appropriate design. A qualitative study will elicit responses from the participants that provide an in-depth look at their perceptions and feelings. Studies conducted on CE that have used quantitative data have shown a link between high levels of CE and positive outcomes such as credit accumulation, attendance records and test scores (Franklin et al., 2007; Heafner & Friedman, 2008). However, these studies do not give us an understanding of "why" and "how" students experience this level of engagement. A qualitative study designed to explore the students' views and self-perceptions will provide an in-depth understanding of the ways in which their participation in STW programs affects their CE.

The present study used a case study methodology to gain an in-depth understanding of how students perceive their own CE. The significant interest in this study is the students' perception of CE; however I have chosen to study the phenomenon within the specified unit of the STW programs at a rural high school in Ontario. The case study is particularistic as defined by Merriam (1998) as it focuses on the STW programs in particular, and is interpretative in nature as it provides a rich description of the students' views, but also uses this information to develop categories and a theoretical framework on which future studies can be built.

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Sampling

The school chosen for this study is located in a rural farming community in Eastern Ontario. It serves approximately 850 students in grades seven to twelve. I chose this school because it has a mixed population in terms of socio-economic and parental occupations. It is also the school at which I currently teach; therefore, I am assumed a dual role as a teacher/researcher. Of particular interest at this school are the STW transition programs. In the fall semester of 2010, 17 students participated in the full day co-op program, nine completed dual credits at a local community college, three students were enrolled in OYAP, and eight students were working towards a SHSM diploma. Eleven of these students were involved in two or more of these programs. In total, 26 students participated in one or more of the STW programs including two grade eleven and 24 grade twelve students.

Participants for this study were drawn from this pool of 26 students, and were selected using the non-probability sampling method of purposeful sampling. This sampling method is most commonly used in qualitative research in order to select participants that will provide the most insightful data (Merriam, 1998). Participation of students was on a volunteer basis and no compensation was awarded. Of the 26 potential participants, ten students agreed to participate (9 males and 1 female) (refer to Table 2). Nine of the participants were enrolled in grade twelve and of these two completed dual credits at a local community college, four completed the four credit extended coop program, two in the SHSM program, and one student was enrolled in all three programs. The one grade eleven student was enrolled in the SHSM program.

Data Collection Instrument Design

Data were collected through semi-structured interviews conducted by the teacher/researcher (see Appendix B for a complete set of questions). The interview protocol for this study included a face sheet to provide an area to record important details of the interview including date, time and participant information, introductory script (see Appendix A), and the interview questions (see Appendix B). In order to maintain consistency and dependability, the teacher/ researcher was the only interviewer. The same procedure for each interview was followed and introductory script was used.

The interview was divided into five main sections; 1) general feelings on the STW program, 2) the feeling that learning is relevant to future goals, 3) self-motivation, 4) ownership over learning, and 5) perception of abilities. The first section was designed to gather some

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information on the student's overall perception of the program and get them thinking about their experiences. Sections two through five of the interview addressed the four indicators of CE presented in the theoretical framework for this study (see Table 1). An ice breaker and concluding question was also included into the interview. The questions were designed to explore students' perception of their own CE while involved in a STW program. Probing questions were also included to explore interesting or relevant comments in more depth.

The instrument was designed to examine the students' perceptions of their own CE and the influence the STW program had on their engagement. These interviews took place during the lunch break and were approximately 45 minutes in length, giving enough time to gather rich data, but prevent participants from becoming fatigued. All interviews were tape recorded with a digital audio recorder and later transcribed. Participants were then given the opportunity to read their transcript for accuracy and to add any further comments. Pseudonyms were used for all students through this paper to protect their identity.

The development guidelines for this study were adapted from three text books on research design, Bryman (2001), Colten and Covert (2007), and O'Leary (2004), and were utilized in the development of this data collection instrument.

The instrument was reviewed by five people; four Master of Arts students and one Professor in the Faculty of Education at the University of Ottawa. A pilot questionnaire was also conducted on a professional educator to check for questions that may be leading, could be answered with a yes or no answer, or that were difficult to understand. Following appropriate revisions, the instrument was piloted with four senior high school students (2 male and 2 female) involved in similar programs, and final revisions were made based on the feedback provided.

Procedure

Recruitment of participants was conducted using posters and also verbally by the teacher/researcher. To participate in the study, students were required to have completed a semester in one of the STW programs and participation was on a volunteer basis. Permission was obtained from the school board to recruit participants and ethics approval was granted from the University of Ottawa to conduct the study. Potential participants were invited to a recruitment meeting at which time interested students were given an invitation to participate and a consent form. Of the 26 potential participants, 10 agreed to be interviewed and the interviews were scheduled based on timetables and availability.

Research Design Considerations

Issues of dependability and credibility specific to qualitative research have been taken into consideration. Internal credibility was addressed through the review process and pilot tests conducted on the data collection instrument. Probing questions such as, “Could you explain further what you mean by...” or “Could you give me an example of...” were used in the interviews if responses were unclear or off topic. Finally, to ensure that transcripts accurately reflected the participants’ perceptions and that initial interpretations were credible, all participants were provided with an opportunity to review their transcript.

Collecting dependable data was also a challenge with this study as I explored the students’ feelings and perceptions of their own learning. Adolescents’ perceptions of themselves and of education are naturally prone to rapid change and can differ depending on the day, mood, or recent experiences. Merriam (1998) points out that reliability and dependability in the traditional sense are not achievable as “replication of a qualitative study will not yield the same results” (p. 206). Dependability in this study was viewed as findings that are “consistent with the data provided” (Merriam; p.206). To achieve this I carefully described the study design and the sampling selection process, what Merriam terms “the investigators position” (p.206). I have also kept an “audit trail” (Merriam; p. 207) consisting of detailed records of the data collection and analysis processes.

There was also a concern that students may be hesitant to be completely honest in their answers, given my dual role as a researcher and teacher in the school. To minimize this concern, safeguards were put in place including clearly communicating to the participants in verbal and written form that the data collected were used for the sole purposes of the teacher’s research thesis and that no information was used in determining grades in any of their courses, or for any other school related purpose. Precaution was also taken to ensure their confidentiality and privacy, that they were under no obligation to participate, and that they could withdraw from the study at any time without any consequences. Finally, interviews of the students that were enrolled in one of the courses taught by the teacher/researcher were conducted in late June after final grade submission.

Ethical Issues

In order to ensure an ethical study, approval from the Research Ethics Board at the University of Ottawa was obtained prior to the collection of any data. Ethical issues that were

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addressed included ensuring that participants understood that the purpose of the study was to contribute to the existing body of literature and that the data would not be used to evaluate the staff, the program or themselves. To reduce the fear of being judged or coerced, participants were made aware both in the consent form and verbally at the beginning of the interview that their responses will be kept confidential and no responses would be used to influence grades in the teacher/researcher's courses or in other subject areas. Participants were also made aware that they could skip a question or stop the interview at any time without penalty or prejudice.

Data Analysis Methods

The data from the transcripts were analyzed using the constant comparative method (see Appendix C for an example) (Merriam, 1998). The transcripts were initially analyzed by comparing responses to questions looking for commonalities and key phases. These commonalities were coded and used to form initial categories. The transcripts were then re-read and raw data and quotes were placed under the category where they best fit. Responses were continually compared and analyzed with-in the categories until solid categories emerged. Data analysis charts (see Appendix C), and a statistics chart (see Appendix D) were then compiled for a final analysis and to draw conclusions.

Findings and Results

Using this method of analysis the data revealed a great deal of consistency in the students' perceptions of their cognitive engagement. Overall, the students reported an increase in their CE as evidenced by increased motivation, efficacy, the feeling that learning is relevant, and the desire to complete high school. It was unclear as to the impact the program had on their feelings of ownership. The main contributing factor to this increase in CE was the real world, practical experience the students gained, and the development of clear career goals.

Chapter 2

The Article

Introduction

Student engagement (SE) is a multifaceted and complex construct that is difficult to define. In its simplest form, it has been defined as active participation in school (Finn, 1993). In the early stages of educational development, participation is measured by a set of behaviors that includes “attending school, arriving at class on time, paying attention to the teacher, and completing assigned work” (Finn, p. 1). As students progress through school these behaviors increase and at the highest level students are completely engaged when they feel a sense of belonging in the school, perceive learning as being relevant to their future, take ownership over their education, and demonstrate a continually positive attitude towards school and a desire to participate meaningfully in their own learning (Finn, 1993; Johnson, 2008; Kenny, Bluestein, Haase, Jackson, & Perry, 2006; Willms & Flanagan, 2007).

The construct of student engagement can be broken into four distinct dimensions; (1) academic, (2) behavioral, (3) cognitive, and (4) psychological engagement (Archambault, Janosz, Morizot, & Pagani, 2009; Gibbons, 2008; Reschly, Huebner, Appleton, & Antaramian, 2008; Willms & Flanagan, 2007). One of the most significant dimensions in determining student success and affecting early leaver rates is cognitive engagement (Brown, 2002; Heafner & Friedman, 2008; Jensen & Burr, 2006; Kadakia, 2005; Shernoff & Vandell, 2007). Cognitive engagement (CE) is concerned with a student’s investment in learning and is operationalized by such indicators as the feeling that learning is relevant, ownership over education, perception of ability, motivation, and valuing educational outcomes (Archambault et al., 2009; Reschly et al., 2008).

Engagement in learning is a key factor in determining a student’s academic success. Students who are fully engaged in their education have a high likelihood of positive school outcomes such as achievement consistent with abilities, graduation, and a post-secondary destination (Finn, 1993). The problem is that many students, particularly males (Archambault et al., 2009; Bowlby, 2005), may experience a decline in their cognitive engagement as they progress through school. Reduced CE can result in various negative outcomes including, but not limited to, credit loss, behavioral problems, attendance problems, and possibly leaving school before completion. The decision to disengage from learning is not a spontaneous one and most

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at-risk students will generally embark on a gradual process of disengagement (Archambault et al., 2009; McMillan, 2010; Reschly et al., 2008) that can start as early as elementary and steadily progress through to high school.

Research has shown an increase in CE when students are provided with relevant and interesting learning experiences which result in better attendance, higher academic achievement, and increased graduation rates (Brown, 2002; Heafner & Friedman, 2008; Jensen & Burr, 2006; Kadakia, 2005; Shernoff & Vandell, 2007). In an attempt to maintain student CE and prevent early leavers, many school districts have created school-to-work (STW) transition programs. These programs directly target the dimension of CE by providing students with practical, hands-on experiences in a workplace or college setting that interests them, while continuing to acquire credits towards a high school diploma (Ontario Ministry of Education, 2010a). In theory, if these programs can be effective in targeting the cognitive engagement of students, schools will experience an increase in success with at-risk populations, resulting in higher graduation rates (Franklin, Streeter, Kim, & Tripodi, 2007; Johnson, 2008; Kenny et al., 2006; Saunders & Saunders, 2001; Smyth & Fasoli, 2007).

This study begins with a look at current literature on school based factors that affect the identification category (Finn, 1993) of student engagement. Next the theoretical framework, procedures, and research findings are presented followed by the discussion and conclusions.

The Identification Component of Engagement

A review of the literature on student engagement reveals a very complex and multi-dimensional construct. In order to simplify the construct, Finn (1989) proposed the participation-identification model of student engagement. This model is composed of two components; a participation component involving regular participation in class and school activities, and an identification component that gives a student a sense of identity. The participation component is characterized by a set of behaviors that includes regular attendance, being attentive in class and completing assignments. The identification component is more emotional and involves the sense of belonging in the school and valuing educational success (Finn, 1989). Traditionally, much of the research on SE has focused on the participation component, which includes academic and behavioral engagement (Appleton, Christenson, Kim, & Reschly, 2006). Recently, however, research has begun to examine the psychological and cognitive dimensions, which are included in the identification component.

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In a national study conducted in the U.S. that examined the effects of school reforms on engagement, Marks (2000) found that a positive environment that focused on building relationships had initial positive effects on SE, but that students eventually experienced a plateau or even a decline in PE. The study examined the students' perception of their psychological and cognitive engagement through surveys. These surveys were administered to 3 669 students in grades five, eight, and ten social studies and math classes from 24 schools across the United States. The selected schools were all identified as undertaking significant reforms such as creating school environments based on positive relationships, and/or authentic instructional work (AIW) (Marks, 2000) that is relevant and interesting. Analysis was done using hierarchical linear modeling. The author found initial increases in students' feelings of belonging soon after the reform process began, but this level of PE declined after a period of time in many students. Interestingly, the use of AIW continued to positively affect CE for the majority of students (Marks, 2000). The following section presents studies that specifically examined the effects of relevant or interesting school work on students' CE.

Factors Affecting Cognitive Engagement

Studies that focused on the cognitive dimension of student engagement found increases in indicators of CE when students found a specific class or task interesting and relevant to their lives (Jensen & Burr, 2006; Kadakia, 2005; Shernoff & Vandell, 2007). Using action research methodology, Kadakia (2005) studied engagement when the computer game *Morrowind* was used in a grade seven class as a method to initiate discussion around choices and consequences. Kadakia (2005) found an increase in CE as evidenced by motivation to participate and complete activities, and the perception that this activity was more interesting and relevant than most class tasks. The study used observations and students' comments on a questionnaire to collect data, and found a significant increase in CE as a result of an instructional method that was interesting and relevant to the students. However, a couple of limitations were noted with the use of these two methods of data collection. For example, capturing a student's perception using written responses can be effectively done if the student is willing and has the skills to write meaningful comments resulting in richer data from students who are most likely already engaged, and significantly less data from at-risk students. The study also used teacher observations as a data source but the author does not discuss the criteria or benchmarks used on which to base observations. This calls into question the reliability of the data collected.

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Similar results were found in other studies on engagement. For example, Shernoff and Vandell (2007) conducted a study that compared students' experiences during various activities at after-school programs and found an increase in cognitive and behavioral engagement (BE) when homework was connected to art, games, and sports activities in an afterschool program. Students reported increases in concentration and completion rates in activities that they found relevant to their lives. Shernoff and Vandell (2007) collected data from 234 grade eight students using the experience sampling method (ESM). The students were given watches programmed to beep at random intervals five times a day during non-school hours. Students recorded specific data in a log book regarding where they were, what they were doing, and who they were with at the beep. While the study was conducted on grade eight students who were involved in an afterschool program as opposed to high school students during school hours, the results revealed that the increase in BE as evidenced by higher levels of concentration and assignment completions was a result of an increase in CE as evidenced by the perception that school work is interesting and relevant to their lives. Similar results have been found among high school students when they perceived tasks as being authentic and relevant to their lives (Jensen & Burr, 2006).

Jensen and Burr (2006) conducted a case study to examine the effects of service-learning on CE. Service learning is a form of AIW where course content is learned while completing service projects that meet the needs of others (Jensen & Burr, 2006). In this case study a service-learning project was used to teach machine safety in a construction technology class instead of traditional demonstration and quiz methods (Jensen & Burr, 2006). The sampling for this study included 25 students (22 males and three females) in a construction technology class over a two-week unit on machine safety. Data collection was conducted through rubrics which were designed to evaluate the students acquired knowledge and skills for the unit, teacher observations, interviews with students and pre- and post- surveys. These instruments were designed to measure the students' acquired knowledge of machine safety, the difference in perceived confidence in using the machinery, and difference in self-motivation before and after the unit. The authors found an increase in CE and BE as evidenced by increased motivation, self-efficacy, and participation. The authors concluded that "service-learning projects can serve as a tool for engaging some students who would not normally respond to traditional methods of teaching the curriculum" (p.25).

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While these conclusions cannot be generalized as the study was conducted in a very informal manner and designed for this specific situation (Jensen & Burr, 2006), the use of a case study to examine this construct brings a unique and in-depth perspective. The study provides a model that can be replicated in similar situations. Findings from several studies (e.g. Jensen & Burr, 2006; Kadakia, 2005; Shernoff & Vandell, 2007) suggest a link between interesting and relevant learning tasks and increased CE. However, research has also shown higher levels of both PE and CE when students have future career goals (Kenny et al., 2006).

A longitudinal study by Kenny et al. (2006) found that “higher levels of career planfulness and expectations are associated with school engagement” (p. 276). A questionnaire using a four-point Likert scale was administered to 416 grade nine students after completing a thirty-hour career-planning program. The data revealed a relationship between increased CE and BE over the year and higher levels of career planfulness as a result of the program as showed by a statistical correlation of 0.74 acquired through a two-wave, cross-lagged panel analysis. Other studies (e.g. Gemici & Rojewsk, 2010; Hughes, Bailey, & Mechurhave, 2001; Lapan, Tucker, Kim, & Kosciulek, 2003) examined STW or co-op programs and found similar results with respect to CE. In the following section studies that examined the effects of STW or co-op programs on CE are presented. A conclusion derived from the literature on student engagement is also discussed.

School-to-Work Programs and Cognitive Engagement

In this section studies that examined the relationship between STW or co-op programs, increased CE and graduation rates are presented. For example, Hughes et al. (2001) conducted a review of research done on STW programs found that these programs can impact CE as evidenced by increased graduation rates, career preparedness, self-efficacy, and “an understanding of the importance of school” (p. 12). The review used literature published since 1994 and that “report opinions by or outcomes for students, teachers, or employers” (p.13).

Lapan et al. (2003) found students who participated in STW programs were better prepared for their career aspirations, had clearer career related expectations, increased self-efficacy, and were more likely to have post-secondary goals that require a high school diploma than students who were less active in the program. The study used self-reported data from 347 grade eight, 281 grade ten and 256 grade twelve students in rural high schools using three separate surveys, one for each grade level. The surveys were designed specifically for the STW

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activities available to each grade level and statistically measured grades and expectations (efficacy, outcomes, and career related expectations). The data were analyzed using a hierarchical multiple regression analyses to test each of the three research questions. Significant to this study is the rural setting as opposed to the majority of studies that used urban schools. A more recent study conducted by Gemici and Rojewski (2010) revealed similar findings on the effects of co-op programs on career plans.

Using data from the Educational Longitudinal Study (ELS) (2002), Gemici and Rojewski (2010) examined the effects of co-op programs on sustained post-secondary readiness and importance placed on work. The ELS surveyed 15 360 grade ten students across the United States initially in 2002, with follow-up surveys in 2004 and 2006 to track progress. Gemici and Rojewski's analysis revealed that students involved in co-op programs "expressed more ambitious post-secondary education plans than their at-risk peers who did not participate" (p. 253). Both Lapan et al. (2003), and Gemici and Rojewski (2010) conducted quantitative studies that focused on outcomes, and neither study examined the students' perception of the factors that made the programs successful. The review conducted by Hughes et al. (2001) also did not report on any findings or comments regarding what make these programs successful. As a result none of these studies offered any kind of insight into the factors that may have lead to these outcomes.

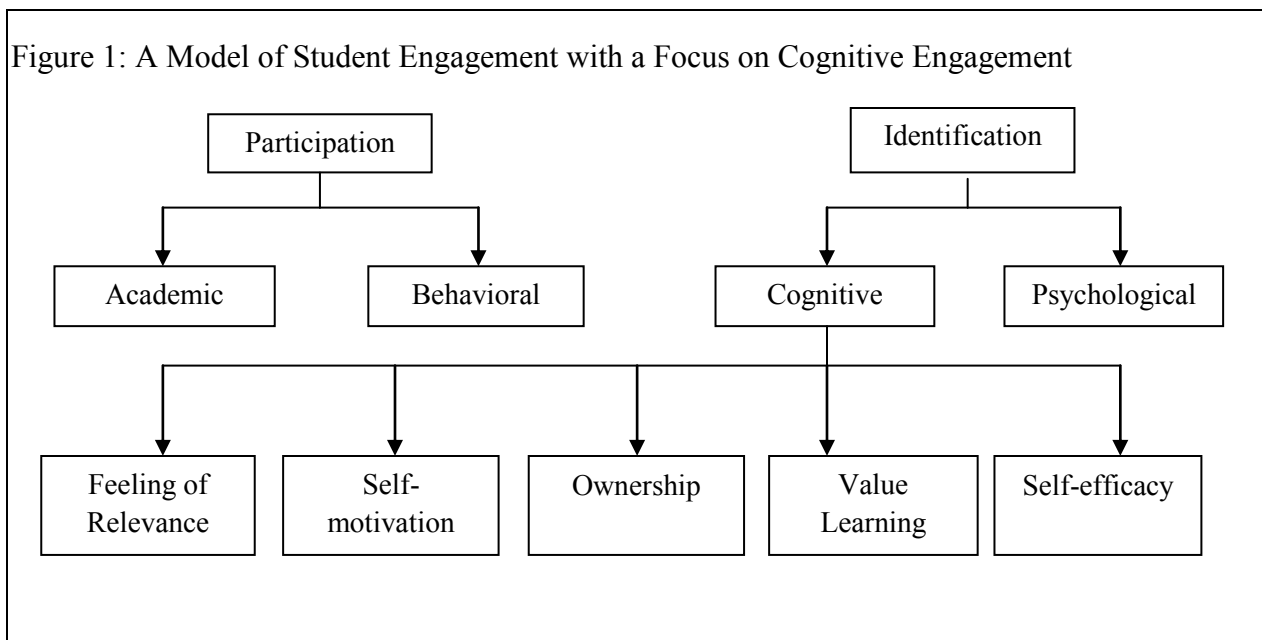
The conclusion that can be reached from these studies is that authentic or relevant methods of instruction, as well as career planfulness, can increase CE as demonstrated by higher levels of interest, motivation, and self-efficacy. This in turn can have a positive effect on achievement (Jensen & Burr, 2006; Kadakia, 2005; Lapan et al., 2003; Shernoff & Vandell, 2007), graduation rates (Hughes et al., 2001; Lapan et al., 2003), and the future ambitions of students (Gemici & Rojewski, 2010; Hughes et al., 2001; Lapan et al., 2003). However, studies that focus on small samples but elicit more in-depth data regarding the students' perception of CE are underrepresented in the literature. Also underrepresented in the literature are studies that focused on rural high schools (Lapan et al., 2003). Students in rural schools often face unique challenges that may not be as much of a concern to their urban counterparts. These challenges often included lower career expectations and limited access to post-secondary and employment opportunities due to geographic isolation (Lapan et al., 2003).

While there are many studies on SE, few have examined the connection between STW programs and the various aspects of CE from the students' perspective (Comfort & Giorgi,

2006), and only a limited number of these have been conducted in rural high schools. Through in-depth interviews with students at a rural high school, and using an inductive analysis of the resulting data, this present study will contribute to the body of research on SE by providing a better understanding of the extent to which these programs make education more relevant for students, give them a sense of ownership, increase their motivation to learn, and affect their decision to complete high school. The research question guiding this study is: “How do students perceive their cognitive engagement in learning when participating in school-to-work transition programs?”

Theoretical Perspective: A Model of Student Engagement

Based on his theory of risk factors, Finn (1989) developed the participation-identification model of student engagement. More recently, many researchers have built upon Finn’s work to develop a host of engagement theories and models. I have combined several works, most notably Archambault et al. (2009), Gibbons (2008), Reschly et al. (2008), and Willms and Flanagan (2007), with Finn’s basic model to form the key dimensions and indicators of engagement for my study. The set of indicators for the cognitive dimension provides the blueprint (see Figure 1) for the data collection instrument.



Note: Inspired by: Archambault et al, 2009; Finn, 1989; Finn 1993; Gibbons, 2008; Reschly et al, 2008; Willms and Flanagan, 2007.

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Schools can have the most influence on the two dimensions of engagement under the identification domain (cognitive and psychological) through well designed programs, such as the STW programs, and effective instructional techniques that meet the needs of the students. The focus of this study is on the cognitive dimension. Through this study I will seek to understand how students perceive their own CE and will therefore use a qualitative research methodology.

Research Design and Procedures

The ten participants in this study were from a rural high school in Eastern Ontario. The school serves approximately 850 students from grades seven to twelve and has a very typical population in terms of socio-economics and parental occupations. Of particular interest are the school's STW programs. In the fall semester of 2010, 17 students participated in extended (full day) co-op, nine completed dual credits at a local community college, three students were enrolled in the Ontario Youth Apprenticeship Program (OYAP), and eight students were working towards a Specialized High Skills Major diploma (SHSM). Eleven of these students were involved in two or more of these programs. In total, twenty-six students participated in one or more of the STW programs including two grade eleven and twenty four grade twelve students.

To participate in the study, students were required to have completed a semester in one of the STW programs and participation was on a volunteer basis. Potential participants were invited to a recruitment meeting at which time interested students were given an invitation to participate and a consent form. Of the 26 potential participants, 10 students agreed to be interviewed (9 males and 1 female) (refer to Table 2). Nine of the participants were enrolled in grade twelve and of these two completed dual credits at a local community college, four completed the four credit extended co-op program, two were in the SHSM program, and one student was enrolled in all three programs. The one grade eleven student was enrolled in the SHSM program.

The teacher/researcher in this study is also a teacher in the school where the data were collected raising concerns that participants may have felt an obligation to participate, or may have been hesitant to respond openly and honestly to some questions. To minimize this, many safeguards were taken to ensure credible and dependable data. This included clearly communicating to the participants in verbal and written form that the data collected would be used for the sole purposes of the teacher's research and no information would be used in determining grades in any of their courses, or for any other school related purpose. Also, participants were informed that they were under no obligation to participate, and they could

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withdraw from the study at any time without consequences. Precautions were also taken to ensure their confidentiality and privacy including the use of pseudonyms and not identifying their job placement or the occupation they were involved in. Finally, interviews of the students that were enrolled in one of the courses taught by the teacher/researcher were conducted in late June after final grade submission.

Table 2.

Contextual Information on the Participants

Participant	Age	Grade	STW	Credits earned
Valerie	19	12	Dual Credit	4
Cameron	18	12	Expanded Co-op	8
Pierre	16	11	SHSM	4
Jacob	18	12	Dual Credit	8
Jeremy	17	12	Expanded Co-op	6
Donald	18	12	Expanded Co-op	5
Emile	18	12	SHSM	10
Brian	17	12	Dual Credit, Expanded Co-op, SHSM	22
Mark	18	12	SHSM	10
Tim	17	12	Expanded Co-op	5

Data were collected using semi-structured interviews conducted by the teacher/researcher (see Appendix B for a complete set of questions). The interview was divided into five main sections; 1) general feelings on the STW program, 2) the feeling that learning is relevant to future goals, 3) self-motivation, 4) ownership over learning, and 5) perception of abilities. The instrument was designed to examine the students' perceptions of their own CE and the influence the STW program had on their engagement. Interviews were conducted during the lunch period to minimize class disruptions. The interviews were audio taped and transcribed. Participants were then given the opportunity to read their transcript for accuracy and to add any further comments. Pseudonyms are used for all students through this paper to protect their identity.

The data from the transcripts were analyzed using a constant comparative method (Merriam, 1998). The transcripts were initially analyzed manually by comparing responses to questions looking for commonalities and key phrases. These commonalities were coded and used

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to form initial categories to which responses were continually compared until solid categories emerged and conclusions formulated. Using this method of analysis the data reveal a great deal of consistency in the students' perceptions of their CE. Overall, the students reported an increase in their CE as evidenced by increased motivation, ownership, efficacy, the feeling that learning is relevant, and the desire to complete high school. The data suggest that the main contributing factor to this increase in CE was the real world, practical experience the students gained, and the development of clear career goals.

Findings and Analysis

Through in-depth analysis of the transcripts, five general categories of data emerged to provide a framework from which to operate; 1) career planfulness, 2) importance of a high school diploma and motivation to graduate, 3) relevance, value of learning and self-motivation, 4) ownership over learning, and 5) self-efficacy. Categories three through five reports directly on the student's perception of their CE based on how CE is operationalized (see Figure 1).

Categories one and two are resulting factors of the STW program that contributed to increases in CE as reported by the students. The following sections present the findings from each of the five categories.

Career Planfulness

One of the most consistent findings from this study was the participants' clear career goals. Many of the participants reported having clear career goals and a post-secondary plan for achieving those goals. Pierre, Jacob, and Brian, had decided on a career when they started the program and used their co-op placement as a way to get started. As Brian said, "doing it [STW] while still in high school gave me a head start ... it helped me just transition from school to the work place". Jeremy, Emile, Tim and Valerie enrolled in the STW to decide if they liked a particular occupation. Valerie noted that the program was "a good way to test the waters and actually see if it would be meant for me". While Jeremy said, "I wasn't sure what I chose to do was what I wanted to do for the rest of my life... It [STW] just gave me an idea of what it was like". Cameron tried different occupations before making a decision on a career path but did choose a career as a result of the program. Donald and Mark were still unsure of their career directions. Donald had plans to go to college, but had not fully decided what program he wanted to take. Mark was still unsure of his career goals, however, he reported that the STW program

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“showed me that maybe I don’t want to do that but something else actually looks much more interesting”.

After being out on job placements, and making decisions on their future career paths, many of the participants reported having little desire to return to high school. After being in a work place they were eager to continue learning in that environment and viewed learning in a classroom setting as irrelevant at this point. When Jacob was asked why he did not want to return to high school he responded that it was, “useless, absolutely useless. Every day I spend in the classroom right now, I’m just waiting for the bell to ring so I can go to [work] and go do something that I actually want to learn”. Three of participants, Emile, Mark, and Donald reported being eager to return to high school but only to finish quickly and move on to their post-secondary destination, not for the learning. It is worth noting that Emile was planning a career in a different occupation than he was working in on his placement, and Donald and Mark had not fully decided on a career yet. The fact that most of the participants did not want to return to the classroom was, however, secondary to their desire to graduate.

Importance of a High School Diploma

Despite their reluctance to return to regular classes, the participants consistently commented on the importance of completing high school, either as a requirement for post-secondary programs, or to help them get a better job. Jacob commented that, “I’m only in my school portion because I need it to graduate, because if I don’t graduate, then I don’t get my apprenticeship and if I don’t get my apprenticeship, I don’t go to college”. Valerie suggested that the STW program, “may give you that extra push that you need to say yeah, I need to stay in high school because this is what I want to do”. Pierre commented that having career goals is “very motivating. I find it necessary to know what you want to do or else you’re going to be sitting after high school with your thumb in your derrière saying what should I do now”. Some of the participants did feel that they would have been just as motivated to complete high school even if they had not been involved in an STW. However, while they viewed a high school diploma as having value, most of the participants did not necessarily see the value in learning unless it was directly related to their future goals and therefore struggled with self-motivation.

Relevance, Value of Learning, and Self-Motivation

Contrary to this overwhelming ambition to graduate, only one of the participants, Donald, reported an increase in the value he placed on learning and self-motivation as a result of his

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experiences in the program. He commented “Now I guess I’m just ready to go to class. I’m ready to learn. I’m paying more attention in class I think”. Others did report an increase in the value of learning but only in subjects that they perceived to be interesting or relevant to their career goals. Cameron commented “I pay more attention in class ‘cause I know what I need to learn. I know what I’m gonna use when I’m working, so I look out for those [sic] and pay attention”. However, for these participants, motivation to learn knowledge and skills that they perceived to be uninteresting or unrelated to their lives did not increase, and they reported to have only put in as much effort as they needed to pass those courses. Valerie effectively summarized this perspective by questioning why students are forced to take what she perceived to be uninteresting or irrelevant courses; “Why force someone to take ... a class that you don’t enjoy, you’re gonna rebel, you’re gonna try to skip and ...you’re not gonna want to do the homework”.

Ownership over Learning

Along with learning relevant material, the importance of having some ownership over their education was consistently expressed by the participants; such as Brian who said, “It’s pretty important cause you want to be able to get all the courses that you want, that you need for your college... or going into the trades”. However, none of the students reported any effects on their feelings of ownership over learning in school as a direct result of the STW program. Some of the participants felt that in high school they were not given that freedom. Valerie perceived that she was not given the opportunity to try courses that interested her. Jacob echoed similar concerns that there weren’t enough relevant courses to choose from, and Jeremy and Cody commented that there were too many mandatory courses which “have no benefit to you at all”. In contrast, the others felt that they had a lot of freedom to select courses that would benefit them and made choices based on the requirements of their anticipated post-secondary destinations. Brian noted that, “I do have a lot of freedom because the only courses we need in grade twelve are religion and English. So I was able to pick all the courses I needed to go into [occupation] like math and coop”. There appears to be a lack of consistence in the student’s perception of ownership. This may be because the STW programs have minimal to no effect on the feelings of ownership within the school, or due to faults in the interview questions.

Two of the participants commented on feeling a great deal of ownership within the STW program. Emile noted, “That’s what I liked about this program. It was that you have a wider range of options to pick from, especially the co-op part of it, you get to pick whatever placement

you want”. Valerie commented, “In [STW] everything matters because it is all on you. You decide what you want to do; you decide what you want to [learn]”. The fact that only two students’ reported these feelings of ownership is concerning; however, once again it is unclear as to whether this is due to the nature of the program, or problems with the interview questions. While there are some inconsistent findings in relation to the student’s feelings of ownership, there are significant findings to link the STW program with an increase in self-efficacy.

Self-Efficacy

The program seemed to have a direct impact on the students’ self-efficacy. Most of the participants reported that being in a real world environment resulted in an increase in confidence and the belief that they had the ability to be successful in their chosen fields. As Cameron commented; “I was proud of the work that I did and it just made me more confident... I started co-op I didn’t know what I was doing. By the end of it I just felt I could do it”. Brian stated, “I now know that I would be able to do the [occupation] and actually have the physical ability and the mental and the intellectual and stuff”.

While most participants reported increases in self-efficacy in regards to their future careers, only three participants commented on the effects the STW program had on their self-efficacy in school. Donald and Jeremy reported an increase in self-efficacy in regards to regular school work. Donald commented that, “a lot of things I think I can’t do I actually can. I just have to try harder. I know that the skill and ability is there”. Jeremy expressed that “it [STW] taught me that I can do it if I want to do it, that I could do good work if I work at it”. Even more interesting is Tim’s realization of both his abilities and struggles as a result of the STW program:

Before, when I was in school I was an average student... It’s not that I thought that I was dumb, I just thought that I wasn’t very good at the things I was doing... But when I went to co-op I realized that I’m not any dumber or smarter than any other kids, I just do things differently than them. Were as someone is good in a text book, I can do some things with my hands. And that was the biggest thing that I learned was that everyone is different. In school we have had classes and had speakers come in and talk to us about these things, but I never really paid attention to it until it was something that was real to me, something that I could see, something that actually changed the way that I thought about my learning and what I do. Which is the biggest reason that I

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want to continue the apprenticeship program instead of just going off to an actual class because I'm not good in a classroom setting and I know that and I'm ok with that, so I just have to choose something that I know I'm better with.

Although the findings in this study are reported as separate categories, it is important to note that each of the categories are intimately related. The following section will discuss the interconnectedness of the findings, and how each of the categories is linked to the others, apparent contradiction in the findings, the influence that career planning can have on a students' CE, limitations of this study and future research.

Discussion

Based on the comments from this small group of students, the common factor that seems to be woven throughout these findings is that the practical, hands-on, real world nature of the STW programs was a major contributing factor to the increase in indicators of CE. All of these programs have a co-op component where students learn while working at a job placement. The participants in this study perceived that real world, practical experiences were a major contributing factor towards their career goals, which resulted in an increase in feelings of relevance, motivation, self-efficacy, and to a lesser degree ownership, as compared to school work. The participants reported being motivated by the hands-on practical work, and believed that they learned more than if they were in school. Cameron summed up the participants' perceptions by saying:

I've always been more of a hands-on learner. I know a lot of people say that, but I've always learnt more being outside of school... I know what I need to learn, what I need on the job site. If I've got to take a course that won't teach me any of that I'm not going to be happy going there, not going to be as enthused to go there. So if I could pick the courses that I would like to take than I would be more motivated to go.

The above comment not only speaks to the significance of real world learning for these students, but also speaks to the inter-connectedness of the categories presented as well. If we examine the quote, we begin to see how each area of CE influences the others. The lines, "I've always been more of a hands-on learner" and "I've always learnt more being outside of school" suggest that he has more self-efficacy when working in his chosen field than in school. The fact

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that in his perception he knows, “what I need to learn, what I need on the job site” suggests a measure of career planning and indicates the participant is aware of what learning is relevant to his future. This is in line with studies conducted on the effects of STW programs on CE by Hughes et al. (2001) and Lapan et al. (2003). As a result of career planning, he perceived certain learning as irrelevant: “If I’ve got to take a course that won’t teach me any of that”, and he shows no motivation to learn when placed in that situation: “I’m not going to be happy going there, not going to be as enthused to go there”. The comment, “if I could pick the courses that I would like to take I would be more motivated to go”, indicates the relationship between relevance, ownership over learning, and motivation. The link between relevance in learning, increased ownership, and motivation is supported by several studies (e.g. Marks, 2000; Jensen & Burr, 2006; Kadakia, 2005; Shernoff & Vandell, 2007) which examined CE when students perceived learning tasks as interesting or relevant, and further demonstrates the inter-connection of these dimensions of CE.

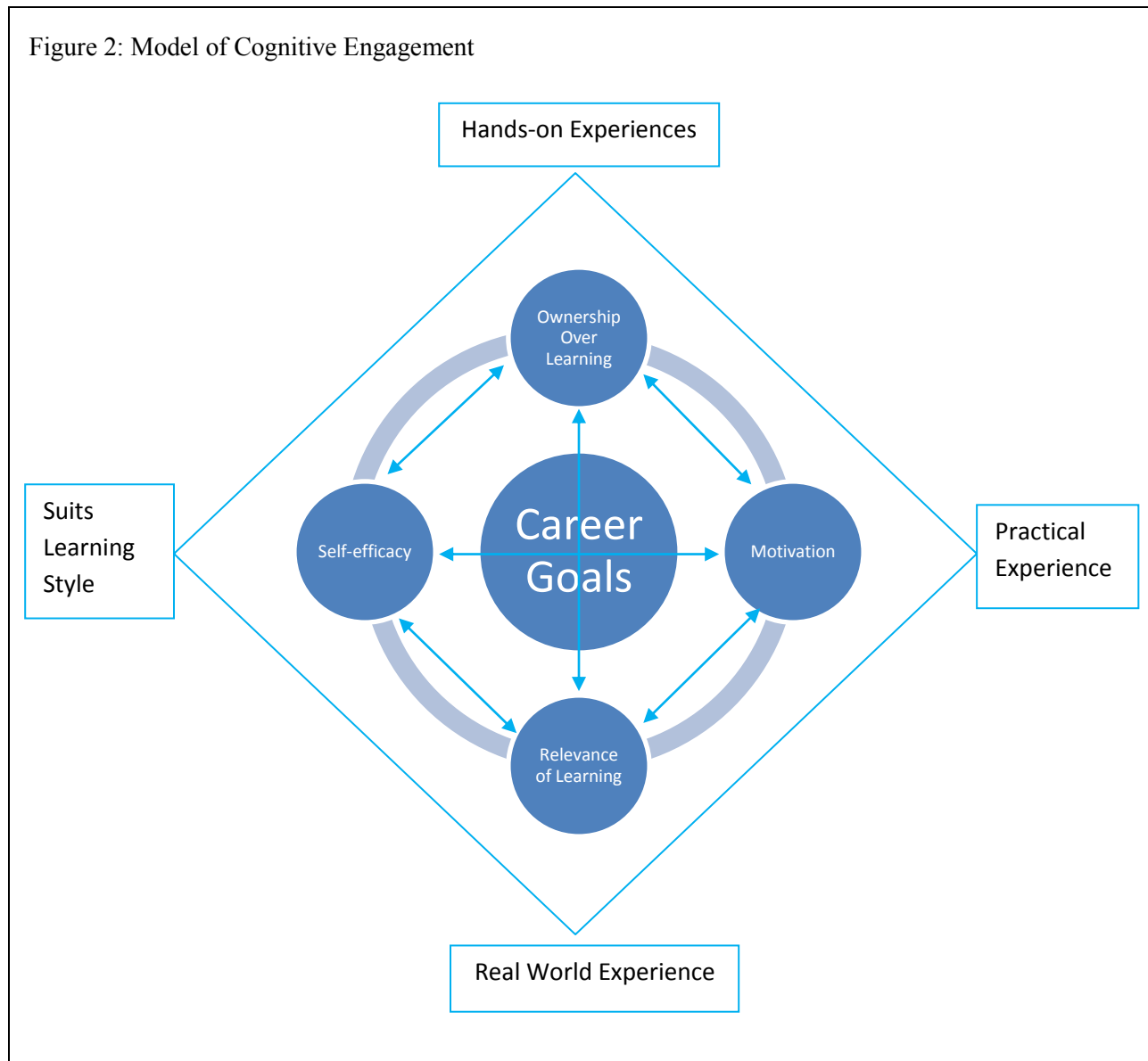
This inter-connection of concepts is demonstrated visually in Figure 2 where career goals are central to the indicators of CE. These indicators are displayed in a circular fashion around career goals as increased CE seemed to flow out of the development of the participants’ future aspirations. The arrows drawn around and crossing through the inner circle demonstrate that each concept influences the others. Around the outside of these indicators are aspects of the STW programs that the students perceived as being positive influences on their CE. While the purpose of the present study was to explore students’ perceptions and not to formulate a theory or model, developing a deeper understanding of the relationships between STW programs and CE can lead to future research projects.

These findings are consistent with the literature on STW and career planning programs in high school. Studies that examined STW programs (e.g. Gemici & Rojewski, 2010; Hughes et al., 2001; Lapan et al., 2003; Marks, 2000) found a strong link between the presence of career goals and increased CE. As in the literature, the students in this study developed clear career goals and as a result viewed the knowledge and skills they were learning at their job placements as being relevant to their future success in the field. The increased feeling of relevance is not only an indicator of increased CE, but it can also lead to increased motivation and efficacy while out on their job placement. This is consistent with studies conducted on school work by Kadakia

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(2005) and Marks (2000) who found that authentic instructional work, or work that is relevant to the students, can have continual positive effects on CE.

Figure 2: Model of Cognitive Engagement



The findings in this study suggest a link between students' perception of relevance and their motivation to learn when they returned to school. The students reported high levels of motivation and effort at their co-op placements, and an increase in their motivation to graduate. However, it appears that this motivation did not extend to learning in general, as many reported being motivated to learn only in subjects that they now perceived as relevant to their future careers. With the exception of those subjects that they perceived to be relevant, they were no more motivated to sit in class and learn than they were before starting the program. In fact, a few

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now viewed school as pointless and irrelevant. This partially supports Kenny et al. (2006) and Marks' (2000) findings as the majority of participants in their studies reported an overall increase in motivation to learn. The discrepancy in motivation seems to be attributed to the perception of relevance and the more hands-on, practical nature of the STW programs. The participants also felt that this style of learning was more enjoyable and relevant to them as many reported having difficulties learning in a classroom environment.

While the STW program may have limited effects on the participants' motivation to learn, it did seem to have more of an impact on their motivation to graduate as they recognized the importance of graduating and expressed a desire to remain in school until they had earned their diploma. Once again we see the influence of career goals along with relevance and efficacy playing a part in their level of motivation. This finding is also consistent with other studies such as Hughes et al. (2001) and Lapan et al. (2003) as they too reported an increase in students' desire to graduate, and the understanding of the importance of high school as a result of STW programs. It is noteworthy that all nine of the grade twelve participants graduated at the June 2011 graduation ceremony.

Another contributing factor to the participants' increased motivation to learn on the job, but conditional motivation in school, appears to be the increase in self-efficacy many of the participants reported experiencing through the program. This link between STW programs and increased self-efficacy was also found by Hughes et al. (2001) in their extensive review of research on STW programs and in research conducted by Lapan et al. (2003) on STW programs at rural high schools. The real-world, practical nature of the program seemed to play a significant role in the students' increased self-efficacy as most of them reported feeling good about completing tasks that were hands-on and related to their chosen fields.

The findings in this study indicate a correlation between career planfulness, increases in motivation, feelings of relevance and self-efficacy as a result of the participants' involvement in a STW program. The link between STW's and ownership was significantly weaker. Some of the participants felt restricted by scheduling conflicts, mandatory courses or past achievement. Others felt that they had the freedom to make choices that benefitted them, but it is unclear if this was a result of the program, or just wise decision making by the students. Only two students commented that they felt they had ownership over their choices within the STW program. However, all of them made the decision to get involved in the program which suggests a certain

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amount of ownership even if they do not have this perception. This ownership can also be linked to career goals. Even if some students were not sure of their future occupation before starting, they were all determined to use the program to carve out a career path. However, more research needs to be done on the role of ownership to determine how much of an effect it has on the other indicators of CE.

No significant differences were found in the students' perceptions of CE based on the programs they were enrolled in. Though a possible trend was noted with the students who felt that the STW program positively influenced their self-efficacy in school, as they were all in the expanded co-op program, given the low number of participants in this study it is hard to draw any type of conclusions.

Limitations

This study provides a snap-shot of students' perceptions of their CE while involved in an STW program; however, participation in this study was on a volunteer bases making self-selection bias a possible limitation to the study. Sixteen of the potential 26 participants attended the recruitment meeting and of those ten agreed to participate. The concern with self-selection is that those who did not agree to participate may not have had as positive an experience or felt that the program was not as beneficial as those who did agree.

Another limitation is that the researcher in this study is also a teacher in the school where the research was conducted. Although many safe-guards were taken to ensure credible and dependable data, there is the concern that the participants may have felt an obligation to participate, or may have been hesitant to respond openly and honestly to some questions despite measures taken to ensure confidentiality and privacy. To reduce the fear of being judged or coerced, participants were made aware both in the consent form and verbally at the beginning of the interview that participation was completely on a volunteer bases and they were in no way obligated to participate. To ensure confidentiality, insurances were given that only the teacher/researcher and thesis supervisor would have access to the raw data, plus pseudonyms were used in place of real names. Further, no information was used in the thesis that could possible identify the students including co-op placements or specifics regarding their career aspirations. Participants were also made aware that they could skip a question or stop the interview at any time without penalty or prejudice.

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The final limitation was the section of the interview that examined students' perception of ownership. The questions in this section did not yield conclusive data and it is unclear as to whether the STW programs played a role in their feelings of ownership, or whether policies and procedures around course offerings and scheduling had more of an influence than the program. This may be due to the wording of the interview questions themselves. Future research on how students perceive their CE when participating in STW programs could include questions that directly ask to what extent the STW program had on their feelings of ownership over education. As well, questions pertaining to how much say they had in their co-op placements, or even whether it was their choice to enroll in the program would be beneficial in examining the link between STW's and the feeling of ownership.

Along with new questions on ownership, future research could also include participants from a more diverse sampling of high schools across the province to examine if these findings are consistent with different regions and student populations. Also, involving more students from the various STW programs to compare the influences they have on students would further our understanding of their effects on CE. Expanding the study to include the dimension of psychological engagement, specifically a sense of belonging, may also be beneficial in getting a better understanding the effects of the STW programs. However, a longitudinal study would be most beneficial in order to examine the impact these programs are having on CE, academic achievement, graduation rates and success in post-secondary and the work force.

Conclusions

Due to the low number of participants in this study it is difficult to draw any transferable conclusions; however, according to the students' perceptions the findings in this study do indicate that they experienced an increase in CE when participating in a STW program as compared to being in school. This is evidenced by the students' perceptions of an increase in the feeling that learning is relevant to their future goals, self-efficacy, as well as the motivation to complete high school, and the presence of clear career goals. As previously noted, it is unclear if their feelings of ownership over learning were affected by their involvement in the program. Further research into how the STW programs affect the dimension of ownership is required. Most of the findings are consistent with relevant literature on student engagement and career preparation program like STW's.

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STW programs have been developed to provide alternative learning opportunities that are relevant to students' future goals in order to increase CE. Based on the comments from the students in this study, the success of these programs can be attributed to the hands-on, real world experiences provided by the employers with whom the students were placed and the development of clear career goals. Learning in the real world at an actual job was viewed by the participants as more relevant to their future which in turn motivated them to work harder and learn more than if they were in school. Increased motivation and efforts, and the hands-on component, led directly to a greater sense of accomplishment and efficacy than they had previously experienced in school.

The STW program also seemed to influence the participants career planning and goals. Having career goals was perceived by the participants as having a positive effect on their motivation to graduate from high school, and on their understanding of the importance of receiving a high school diploma. While most of the participants understood the importance of receiving their diploma, they perceived what they were learning in class as unimportant and irrelevant unless it was directly related to their career goals. This strongly suggests that while the STW programs had minimal effects on CE in a classroom setting for the participants in this study, programs like this may be effective in increasing student achievement and graduation rates.

Chapter 3

Conclusion

Student engagement is an essential part of any students' education. Not only is it a predictor of positive future outcomes, but engagement in learning is considered by many to be a desired outcome of education in its own right. Teachers and administrators devote large amounts of time and energy promoting and developing engagement in their students. Willms and Flanagan (2007) contend that; "student engagement is an important schooling outcome in its own right. It is a disposition towards learning, working with others and functioning in a social institution, which is expressed in students' feeling that they belong at school, and in their participation in school activities" (p.47). However, despite the efforts of dedicated educators, the unfortunate reality is many students still disengage from learning putting them at-risk for a variety of negative outcomes which may include not completing high school.

The reasons for this disengagement are complex and may include factors over which schools have little influence, such as the environment in the home or community. However, the schools themselves can contribute to the process of disengagement. The traditional school system is a very structured environment that is based on established norms to which students are expected to adhere. These norms are in place to promote standardization, behavior modification and accountability. However, through programs and curriculum that are interesting and relevant to students, schools can have an impact on the cognitive dimension of engagement. Findings from this study suggest that some students find it difficult to function effectively in a classroom setting, but are motivated and able to learn in an environment that is more hands-on and that they perceive as being relevant to their future goals. This demonstrates that schools can have a positive impact on students' cognitive engagement and increase graduation rates through such means as providing programs that are perceived by the students as being more interesting and relevant to their lives.

School-to-work programs like the ones in Ontario have been developed to provide alternative learning opportunities that are designed to increase cognitive engagement. While the findings in this study are based on data from 10 students, it does appear that the STW programs have a positive influence on CE as evidenced by students' increased feelings that learning is relevant to their future goals, self-efficacy, the value placed on education, the motivation to complete high school, and the presence of clear career goals. From the students' perspective,

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their CE was impacted by the hands-on, real world experiences provided by the employers with whom the students were placed. Learning in the real world at an actual job was viewed by the participants as more relevant to their future, which in turn motivated them to work harder and learn more than if they were in school. Increased motivation and efforts and the hands-on component, led directly to a greater sense of self-efficacy than they had previously experienced in school.

The STW program also seemed to have an influence on the participants' career planning and goals. Having career goals was perceived by the participants as having a positive effect on their motivation to graduate from high school, and on their understanding of the importance of receiving a high school diploma. While most of the participants understood the importance of receiving their diploma, they perceived what they were learning in class as unimportant and irrelevant unless it was directly related to their career goals. This strongly suggests that while the STW programs had minimal effects on CE in a classroom setting for the participants in this study, programs like this may be effective in increasing student achievement and graduation rates. However, the STW programs have been available to students for approximately eight years and Ontario still has a low graduation rate of 79% (Ontario Ministry of Education (2010a). This data suggests that schools need to expand their programs to include more students, and educators need to get more students interested in the STW programs.

Through this study, and my 23 years of teaching technological education in middle and high schools, I have come to believe that exposing students to a broader range of career options through courses like technological education will generate interest in a wider variety of occupations. Currently, most students in Ontario do not have the opportunity to take a technological education course until grade 9, and it is an optional course at the high school level. This exposure needs to start as a mandatory component of education at an earlier age. Providing students with hands-on learning in fields such as engineering, communications technology, hospitality, or the skilled trades, along with career education in these fields, will encourage more students to enroll in programs such as the STW's. This will ensure that more students stay engaged in education.

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Appendix A

Interview Guide

Author: Dean Doucette **Version:** 4.2 **Date Developed:** Dec. 11, 2010

Interview #: _____ **Date:** _____ **Start Time:** _____

Interviewer: _____ **End Time:** _____

Participant: _____ **Age:** _____ **Grade:** _____

Gender: _____ **School-to-Work Program(s):** _____

Research Question: *How do students perceive their cognitive engagement in learning when participating in school-to-work transition programs?*

Introductory Script

Hello, (*first name of participant*), I am conducting this interviews as part of my Masters of Arts in Education program at the University of Ottawa. Thank you for agreeing to participate in the study. As part of this study, we are interviewing a number of your peers involved in one of the school-to-work transition programs to better understand your attitudes, beliefs, and perspectives on how this program may have effected your engagement in learning. You have been chosen to participate in this study because you have completed (*number of credits*) in the (*specific school-to-work*) program and I believe that your experiences in this program has given you a unique perspective on your own engagement in learning that will be beneficial to the study. At this point I would like to take a minute to review the consent form you previously signed (*explain the consent form*). We would like to record this interview so we can accurately capture your experiences in your own words. If you agree to participate, do we have permission to audiotape our interview (*participant's answer*) _____? All interviews will be transcribed and all proper names and places will be coded using pseudonyms to protect your identity and privacy. Do you understand? At this point would you like to continue?

All right, let's get started. (*At this point turn on the audio recorder*)

Appendix B

Interview Questions

1) General feelings on the STW Program:

- a) Why did you decide to get involved in the STW program?
- b) What occupation or trade were you involved in?
- c) Why did you choose this occupation/placement?
- d) Tell me about some of the things you liked about the SWT program?
- e) Tell me about some of the things you did not like about the SWT program?
- f) Would you say that being involved in the STW program was a worthwhile experience for you?
- g) If you were asked to talk to the younger students about your experience in the SWT program,
- h) What are some things that you would tell them?

2) Feeling that Learning is Relevant to Future Goals:

- a) When you finish high school, what are some occupations that interest you?
- b) When did you start becoming interested in these occupations?
- c) How helpful was the SWT program in creating this interest?
- d) Some people have argued that because students are not in a classroom, programs like the STW are not very effective in preparing students for their future, what would you say to them?
- e) What about classroom based courses, how effective would you say they are in preparing students for their future?
- f) Would you say that being involved in a school-to-work transition program has affected your opinions about how relevant school is to your future?

3) Self-Motivation:

- a) What motivates you to come to school every day?
- b) Out on your placement, how satisfied did you feel when you complete tasks to the best of your ability?
- c) In classes here at the school, how satisfied do you feel when you complete tasks to the best of your ability?
- d) If you had to list the priorities in your life, where would school fit in as compared to other aspects of your life?
- e) Would you say that being involved in a school-to-work transition program has affected your motivation to learn?

4) Ownership over Learning:

- a) How much freedom do you feel you have to make your own decisions on courses that will benefit you?

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- b) How important to you is having that freedom to make your own decisions about the courses you take?
- c) Given your future goals, if you could have chosen any courses this year, what do you think the ideal schedule

5) Perception of Ability:

- a) In school, what are some tasks that you find easy?
- b) In school, what are some tasks that you find more difficult?
- c) Would you say that the STW was more challenging or less challenging the regular school work?
- d) Thinking about all your courses this year, how hard do you need to work in order to get good grades?
- e) Have you ever felt like you will never be able to finish high school?
- f) Describe some of the factors that contributed to this feeling?
- g) How much of a roll did your belief in your abilities play in this?
- h) Have you ever considered dropping out of high school?
- i) Describe some of the factors that contributed to this feeling?
- j) What contributed to the decision not to leave high school early?
- k) Would you say that your involvement in the STW program has changed to way you view your own abilities in any way?

Appendix C

Sample Data Analysis Chart

<i>Further Analysis – Importance of Graduating</i>					
<i>Participant</i>	<i>Important/Priority</i>	<i>Motivation to come to school</i>	<i>Thoughts of Dropping out</i>	<i>Effect of STW</i>	<i>Quotes</i>
Valerie	Yes. But sees it as “pointless”. Knows she needs to graduate but learning is a low priority.	Just wants to finish and move on. Sees school as a means to an ends	No. Believes the more education you have the better.	STW motivated her to finish HS	<p>“but if I drop out, what am I doing for myself except running away for the problem. It’s not going to help me out later on down the road, because the more education you have right now the better. Evan if that education is completely crap it’s still your education right now” P.21</p> <p>“Some days it feels like it is never coming and you just want it to be here, but there is no doubt in my mind that I will finish high school. I may not finish high school with a 90% average, but that will</p>

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					come when I will be up on that stage with my diploma and that hat going we finally did it”
Cameron	Yes. Graduating important but not learning. 6-7 on priority list.	Get his diploma.	No. Always knew he would finish HS but doesn’t see a lot of use to it for his career. Doesn’t want to disappoint parents.	Always knew he had ability to finish. STW motivated him to finish HS.	
Pierre	Yes. Number 1 priority because it is mandatory. Other activities are choices.	Family perception “I don’t want to be the dumb cousin”.	No. Always knew he could and would finish HS.	Little to none. Always been motivated.	
Jacob	Yes. Sees importance of grad, but not interested in learning because he sees little relevance.	Does not want to disappoint parents.	No. Always knew he could and would finish HS.	More motivated to finish and start career.	
Jeremy	Yes. Up close to the top, but not # 1.	Just to graduate. Confident in abilities, but little interest in school.	Yes, due to lack of interest. Stayed in to get good job and not disappoint parents.	Sees need for diploma so he can get into college and get better job in field.	
Donald	Yes. Knows grad is important to future goals, wants to go to college. School 2-3 on priority list	Literacy and course relevant to future. See friends.	Never. Self-efficacy and family perception.		
Emile	Yes. School is 1 st priority in life. Wants to grad and move	Graduate. Knows he needs diploma to get into program and get a	Never. Wants to graduate. Some family	Helped to motivate him.	

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	on.	good job.	influence.		
Brian	Graduating important, but school # 4 or 5 on priority list. Wants diploma to get job and do college component.	Graduate. See friends.	Never. Knew he had the ability and never had academic problems. Wanted to graduate.	Motivated him to get through and get out of HS to start career.	"[I] Just I wanted to pass, I wanted to go through it all. I didn't need to drop out. I didn't have any problems at school or anything."
Mark	Yes. Feels school is extremely important.	Enjoys learning.	Yes, but realized that it was a "stupid idea".	Yes. Motivated him to learn and graduate on time.	"It made me feel like learning was actually something important, it made me realize you actually have to want to learn, you have to work at it."
Tim	Pretty low. Values work, friends and family higher than school.	Not motivated at all.	Yes, but has ambitious goals in life that require high school education.	Some. Realized that he had talents and abilities, they were just different than academic intelligences.	

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Appendix D

Statistics Chart

	<i>Career Goals</i>	<i>Motivation from goal</i>	<i>Return after coop</i>	<i>Important to Grad.</i>	<i>Motivation to Grad. As result of STW</i>	<i>Motivation to learn</i>			<i>Importance of ownership</i>	<i>Perception of ownership</i>	<i>Increased efficacy in field</i>	<i>Increased efficacy in school</i>	<i>Worthwhile experience</i>
<i>Participant</i>	<i>8/10</i>	<i>9/10</i>	<i>6/10</i>	<i>10/10</i>	<i>8/10</i>	<i>2</i>	<i>3</i>	<i>5</i>	<i>9/10</i>	<i>8/10</i>	<i>9/10</i>	<i>3/10</i>	<i>10/10</i>
Valerie	Y	Y	N	Y	Y			N	Y	N	Y	N	Y
Cameron	Y	Y	N	Y	Y		?		Y	N	Y	Y	Y
Pierre	Y	Y?	N/A	Y	N	Y			Y	Y	N/A	N	Y
Jacob	Y	Y	N	Y	Y			N	Y	Y?	Y	N	Y
Jeremy	Y	Y	N	Y	N			N	Y	Y?	Y	N	Y

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Donald	?	Y	Y?	Y	Y		?		Y	Y	Y	Y	Y
Emile	Y	Y	Y?	Y	Y			N	Y	Y	Y	N	Y
Brian	Y	Y	N	Y	Y		?		Y	Y	Y	Y	Y
Mark	?	N	?	Y	Y	Y			?	Y	Y	N	Y
Tim	Y	Y	N	Y	Y			N	Y	Y	Y	N	Y