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It is important to promote and document innovation and research as educators and researchers work together to develop strategies for leading, teaching and learning. By making research accessible to the public, we advance the education process. By highlighting Manitoba scholarship in this monograph series, our hope is that locally designed and contextually relevant research can find its way into the classrooms and school systems of Manitoba in ways that improve the educational process for all.

MCLE takes great pride in supporting the MERN Monograph series and we want to acknowledge Charles Morrison, our past Chair, and Barry Nadolny, our past Executive Director, who helped to make this initiative a reality.

Dawn Wallin, Ph.D.

Chair, Manitoba Council for Leadership in Education



*CAREER TREK*: RESEARCH ON THE  
IMPACT OF A MANITOBA CAREER  
EXPLORATION INTERVENTION

Dawn Sutherland, University of Winnipeg  
Kathy Levine, University of Manitoba  
Marilyn Carter, University of Manitoba  
Darrell Cole, *Career Trek* Incorporated

Manitoba Education Research Network (MERN)

Monograph Series

Issue 1, Fall 2008



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In 2008 the Manitoba Education Research Network, with the support of the Manitoba Council for Leadership in Education (MCLE), launched the MERN Monograph Series. The purpose of this monograph series is to publish peer reviewed educational research in hard copy and electronically, in English and French, at least twice a year. Each monograph will normally report on Manitoba educational research – research that is conducted by Manitoba researchers, in Manitoba, and/or is timely, accessible, and relevant to a broad audience of Manitoba educators and their partners. A call for proposals is posted on the MERN website [www.mern.ca](http://www.mern.ca) and widely circulated across the province twice a year with deadlines in the Fall and Spring.

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# EXECUTIVE SUMMARY

## Introduction

This monograph documents the development of a research program that examines the impact of *Career Trek*, an extra-curricular career development program, on the academic motivation and self-efficacy of the students participating in it. The program incorporates knowledge of children's risk and protective factors and encourages the development of self-efficacy. The first part of the monograph provides a description of the *Career Trek* program. The second part reports on the findings from four research studies conducted by the authors on the impact of the program. These studies suggest that early intervention career exploration programs, such as *Career Trek*, can be effective in promoting academic resilience among "at-risk" students and in preventing a decline in academic motivation often associated with middle years students.

## The *Career Trek* Program

*Career Trek* was created in 1996 as a joint initiative of Red River College, the University of Manitoba, and the University of Winnipeg to encourage academically at-risk youth in Winnipeg to pursue post-secondary studies. *Career Trek* is structured as an early intervention program, located outside of the formal education system, that provides two separate stages of programming: a core program for at risk grade five and six students and a second stage that provides an intensive single career focus (chosen by the student) for youth entering grade nine.

The core *Career Trek* program, which currently involves some 240 youth from five Manitoba school divisions is held on Saturdays for twenty weeks between October and April. Participants are divided into four groups and rotate through a series of career modules held at Red River College, the University of Manitoba, or the University of Winnipeg, with each module lasting five weeks. Over the twelve year history of the program, a variety of departments and faculties within the three institutions have participated including Native Studies, Engineering, Building Construction, Graphic Arts, Criminal Justice and Law, Education, Aeronautics, Physical Education and Recreational Studies, and Political Science.

*Career Trek* is designed to educate participants at three separate levels:

- at a factual level, providing information regarding such matters as post-secondary admission requirements, pre-requisite high school course selection, and career trajectories
- at an experiential level by engaging participants in specific tasks associated with particular careers
- at a personal level developing students' interpersonal, social, and communication skills

Family involvement is an important part of the *Career Trek* model and is developed through four “Family Days” held during the year and through program-based information sessions related to post-secondary education.

## The Theoretical Framework: Academic Resiliency and Self-Efficacy

Two different theoretical paradigms have guided the design and the research related to the *Career Trek* program:

- a *resilience* framework grounded in the ecological perspective of Bronfenbrenner (1979)
- a *self-efficacy* framework based on the work of Bandura (Bandura, Barbaranelli, Caprara & Pastorelli, 2001)

Applying Bronfenbrenner’s (1979) ecological perspective that views child development as taking place within a complex system of relationships affected by multiple levels of the surrounding environment, and defining academic resilience as “the heightened likelihood of success in school and other life accomplishments despite environmental adversities brought about by early traits, conditions and experiences” (Wang, Haertal & Walberg, 1998, p. 6), provides a model for examining the interaction of risk and protective factors at the individual, family, school and community levels, and how these influence school success. This framework guided the exploration of risk and protective factors related to academic engagement, measured as motivation, self-esteem and perceptions of self, and helped to identify protective mechanisms in participants and their families and ways in which a career development program such as *Career Trek* might build on these positive factors.

Bandura’s concept of *self-efficacy* – the extent to which an individual feels that he/she can be successful at a particular task (Bandura, Barbaranelli, Caprara & Pastorelli, 2001) complements and extends the resilience framework. Stemming from the initial research on resilience, it became clear that in order for children to manage academic risk and move on to post-secondary education, they not only needed to identify potential barriers but also needed to perceive that they had the ability to overcome these barriers. Bandura et al. (2001) hypothesized the relationship between career development and self-efficacy in four areas:

- career planning and exploration
- knowledge of self and others
- career decision making
- school-to-career transitions

## A Research Base: Four Studies on the Impact of *Career Trek*

The goals of *Career Trek* are to:

- increase children's academic motivation and school engagement
- increase children's self-confidence and perceptions of self-efficacy by engaging in a variety of challenging career-related tasks
- increase children's social and independent problem-solving skills through problem-based learning within collaborative groups
- encourage active involvement of parents via family days and information sessions
- foster greater connections between participants, the family, the school, and post-secondary institutions

All of these are considered to be protective factors that can contribute to positive life trajectories. Summarized below are four research studies designed to assess the extent to which these goals are being met by the program.

**Research Study #1: *Career Trek* and perceptions of self as student:** This study set out to assess the impact of *Career Trek* on participants' academic motivation as measured by their self-concept, intrinsic motivation, and perception of academic ability. Four different questionnaires were administered to a group of *Career Trek* participants and a control group of non-participants in the fall and in the spring, before and after *Career Trek* students had participated in the program. These were *The Children's Academic Motivation Intrinsic Motivation Inventory (CAIMI)*, *The Perception of Ability Scale for Students (PASS)*, *The Rosenberg Self-Esteem Scale*, and *The Family, Friends, and Self (FFS) Assessment Scale*. The study reports detailed results from each of these instruments.

Within education, the transition from elementary to middle school is recognized as a source of student stress, and researchers have reported developmental declines at this stage in many of the important motivational attributes such as interest in school, intrinsic motivation, self-concept of ability, and self-esteem. Overall, the findings from this study did not indicate consistent or large *increases* in the measures of *Career Trek* students' academic motivation. However, when compared to the data from the control group in the study and the research literature, *maintaining* existing levels of academic motivation may indicate that *Career Trek* has a positive effect in circumventing the traditional motivational decline around academic motivation typically associated with pre-adolescence.

**Research Study #2: *Career Trek* and self-efficacy:** This study used a modified version of Bandura's *Career Self-Efficacy Scale* to examine the impact of the *Career Trek* program on participants' perceptions of their career self-efficacy. The instrument was administered to a group of 30 *Career Trek* participants before and after their participation in the program. Findings from this study indicated that children's perceptions of their career decision-making abilities significantly increased after participating in the program. It appears that participation in *Career Trek* positively influenced the extent to which this group of academically at-risk children perceived themselves to be capable of successfully pursuing careers in different areas.

**Research Study #3: *Career Trek* and risk and protection factors in inner-city career development:** This qualitative study interviewed 31 *Career Trek* participants as well as a control group of 18 non-participants prior to the start of the program and again after the end of the program. The interview questions explored issues related to students' perceived school performance, school satisfaction, peer relationships, family relationships, extra-curricular activities, and career development. In addition, parents and teachers were interviewed regarding their perceptions of child and parent confidence in terms of career decision making.

The findings from this study suggested that the *Career Trek* program had a positive effect on instilling in participants a number of important protective factors including: an enhanced perception of themselves as students, a clearer understanding of potential barriers to the achievement of their career goals, better appreciation of their own personal traits in relation to career choices, knowledge of post-secondary institutions, and improved career planning.

**Research Study #4: *Career Trek* and family and school involvement in career development:** The primary objective of this study was to identify parental perceptions of factors that impede children's career development and post-secondary education participation. In addition, the research questions were designed to initiate the development of interventions to promote family involvement in their children's career exploration activities and post-secondary participation.

Analysis of the parent interview data suggested four overarching themes:

- that *Career Trek* functioned as a catalyst for career-related discussions
- that parents viewed their role in career exploration as one of encouragement
- that parents did not want to be seen as pushing their children into particular career paths
- that parents were generally not informed and thus felt unprepared to discuss career exploration with their children

## Summary

In summary, it appears that early intervention career exploration programs that incorporate knowledge of children's risk and protective factors, and encourage the development of self-efficacy, can be an effective way of promoting academic resilience. Although the short-term academic effects are not always positive, it appears that at this stage of children's development, career exploration programs may provide a *maintenance benefit* rather than an observable increase in academic motivation. Moreover, although career exploration may not result in an immediate academic increase, children's career decision-making self-efficacy increases.

## INTRODUCTION

In 1996, Red River College, the University of Manitoba, and the University of Winnipeg launched *Career Trek Incorporated*, a joint initiative designed to encourage academically at-risk youth in Winnipeg to pursue post-secondary studies. The initial objective of the program was to offset the negative life trajectories of many at-risk youth by exposing them to a variety of career options available at the three post-secondary institutions. This monograph documents the evolution of a research program that explores the impact of *Career Trek*, an extra-curricular career exploration program, on the academic motivation and self-efficacy of its participants and their families, by exploring the perspectives of participants, parents, and teachers. Two different theoretical paradigms were used during the eight-year span of this research program. Two studies used a *resilience* framework grounded in the ecological perspective of Bronfenbrenner (1979). This framework guided the exploration of risk and protective factors that contributed toward or hampered academic engagement, measured as motivation, self-esteem and perceptions of self. The resilience framework was useful in identifying some protective mechanisms in participants and their families and the possible ways a career exploration program can build on these positive factors. From these studies emerged the necessity of understanding children's career exploration using Bandura's concept of *self-efficacy*; the extent to which an individual feels he/she can be successful at a particular task (Bandura, Barbaranelli, Caprana & Pastorelli, 2001). It became clear that in order for children to manage academic risk and move on to post-secondary education, they not only needed to identify potential barriers but also needed to perceive that they had the ability to overcome these barriers. Therefore, the more recent studies are grounded in the theoretical framework of self-efficacy and have embraced the ideas of Bandura and others on career development and career decision making.

The monograph is organized into two main parts. Part 1 provides an overview of the *Career Trek* program, as well as the research literature related to student academic resilience and career self-efficacy. Part 2 of the monograph provides a summary of four research studies conducted by the authors to measure the impact of *Career Trek* on its participations. In addition, an Executive Summary is included at the beginning of this monograph, as well as an extensive Bibliography related to resilience, self-efficacy and career development at the end.

## PART 1: THE *CAREER TREK* PROGRAM AND ITS THEORETICAL FRAMEWORK

*Career Trek* is a not-for-profit organization that provides a range of comprehensive career-related educational programs for youth with perceived barriers to entering post-secondary education who therefore may require additional supports. The participants may be considered at-risk for any number of internal or external challenges including socio-economic status, gender, disability, family structure, and/or membership in a marginalized group. *Career Trek* is unusual in its approach to career exploration, as other career programs are typically school-based and begin at the secondary school level. *Career Trek* is structured as an early intervention program, located outside of the formal education system, that provides two stages of programming. The core program of *Career Trek* is directed toward children in grades five and six who are perceived to be at-risk for not completing secondary school, thereby limiting their post-secondary options. Upon successful completion of the core program, participants are invited back to phase two, which provides an intensive focus on one career (selected by participants) for youth entering grade nine.

Each year, 240 youth from five school divisions across Manitoba, who are identified as requiring additional academic support by their teachers and school administrators, participate in the core program. The program is held on Saturdays for 20 weeks during the academic year (October–April). Participants are selected based on two criteria:

- the individual has, in the estimation of teachers and administrators from the sponsoring school, the cognitive potential to pursue and complete post-secondary education
- nominated participants and their families agree to attend and complete the program

*Career Trek* is performance-based and both children and their families contract for commitment. Expectations for children include regular attendance (program participants are allowed no more than three absences) and parents or family members are expected to facilitate their children's attendance (e.g., preparing lunch, ensuring that children are at the pick-up site on time) and participate on family days.

The 240 participants are divided into four groups of 60 students. Program staff make sure that each group includes representation from all participating school divisions. This provides opportunities for students to interact with children from a range of geographically, ethnically, culturally, and linguistically diverse groups. Participants rotate through four to eight career modules held at one of Winnipeg's three participating post-secondary institutions: The University of Manitoba, Red River College and The University of Winnipeg. Throughout its 12 year history, a variety of departments and faculties have participated within each institution including Native Studies, Engineering, Building Construction, Graphic Arts, Criminal Justice and Law, Education, Aeronautics, Physical Education and Recreational Studies, and Political Science. In total, the participants receive 95 hours of programming. At the conclusion of a five-week block, each group rotates to a new set of departments or faculties.

*Career Trek* educates participants at three levels:

- factual information regarding post-secondary admission requirements, prerequisite course selection, and potential career trajectories
- experiential learning by engaging in specific tasks associated with particular careers, thereby allowing participants to assess the “fit” between their personal attributes and career demands
- personal and social skill development

Instructors for each module inform participants about the post-secondary admission requirements of a given discipline. For example, in order to enter the Department of Biology at the university level in Manitoba, a student must have completed high school chemistry and math. This alerts participants at the elementary school level as to the importance of specific subject areas for a given discipline career as well as the importance of future course selection at the secondary school level. Secondly, each module exposes participants to the wide range of career opportunities within a specific field. For example, in the biology module, participants would complete activities that span a range of careers, such as zoologist, botanist, pathologist, medical doctor and veterinarian. Similar information is provided regarding careers accessible through college education. For example, although building construction may be perceived to require only physical ability, participants are also informed about the necessity of math and literacy skills in order to be successful within that career.

The experiential nature of the program further ensures that participants do not merely learn about a career, but have the opportunity to physically engage in the tasks associated with it, and “learn by doing.” For example, in the aeronautics module, *Career Trek* has partnered with a private aeronautical firm that provides an actual aircraft for participants to learn and practice the skills of mechanical diagnostics. The experiential nature of the program provides opportunities for participants to move away from passive learning and reflect on their personal “fit” within particular careers.

The modules are further designed to develop team-building and problem-solving skills amongst participants. *Career Trek* endeavours to build an awareness of the importance of inter-personal skills within a workplace setting. A primary benefit of group work is that it encourages the development of interpersonal, social, and communication skills. Participants learn to delegate tasks and responsibilities, manage schedules, take individual responsibility for one’s own work, identify each other’s areas of strengths, learn how to negotiate with others, and mediate conflict. Over the course of the program and through lessons that require collaboration, participants are exposed to the importance of teamwork and peer support. Continuing with the example of biology, during the class on pathology, participants would complete a problem-based learning activity related to the hypothetical dispersal of a pathogen from a restaurant buffet. Working in teams and assuming the different roles required to solve this problem, some participants would determine the source of a particular pathogen by collecting samples, others would be responsible for the analysis, others would determine how it was transmitted, and still others would present the findings to the larger group for discussion.

Family involvement occurs through four “Family Days” held throughout the program year. Participants are encouraged to invite parents, guardians, siblings, and other significant individuals to participate in each module, and the students act as instructors for the day. Given that contemporary family structures vary considerably, it is important to note that participants define “family” in terms of who they see as personally supportive. Parental or guardian involvement is further encouraged through program-based information sessions that focus on central issues related to post-secondary education including the differences between university and college programs, admission requirements, accessibility, and financial costs. One issue to emerge has been that low-income families typically over-estimate the cost of post-secondary education and thus interpret their financial situation as the primary barrier that will prevent their children from accessing post-secondary education. Therefore, all families are offered free financial counselling through a local credit union and are provided with information regarding actual costs, potential subsidies including bursaries, student loans and scholarships, and registered educational savings plans. Information is also provided about the importance of secondary school course selection as an enabling factor to access post-secondary education as well as the availability of non-financial supports for at-risk students at the post-secondary level. These include specialized services for Aboriginal students, students with disabilities, peer counselling services, and other student supports.

The primary mandate of *Career Trek* is poverty prevention through career exploration. Child poverty remains a persistent problem in Manitoba, which has the highest percentage of households with children that have been poor since 1995 (Social Planning Council of Winnipeg, 2003). The interactional relationship between poverty and education is well established. First, children in high poverty neighbourhoods generally do significantly less well on measures of academic achievement compared to children in low poverty neighbourhoods (Kohen, Leventhal, Brooks-Gunn, & Hertzman, 2003; Leventhal & Brooks-Gunn, 2004). Conversely, low educational levels are linked with elevated risks for poverty (Valetta, 2005). According to Canadian data, approximately 30% of the current school population is at-risk for long-term consequences of educational disadvantage including early school leaving and school failure (Statistics Canada, 2004). This leads to significant long-term effects as the unemployment rate among dropouts aged 20 to 24 in 2004/05 was 19.4% – a figure double that of graduates (Statistics Canada, 2004).

Post-secondary education acts as a significant protective factor in several domains including income, physical and mental health, and lifespan. Post-secondary education is associated with a number of positive outcomes including higher wages and earnings, (Statistics Canada, 2006), increase in longevity (Lleras-Muney, 2002), intergenerational benefits and positive child outcomes, building social capital (Helliwell & Putnam, 1999) and perhaps most importantly, the emotional well-being that comes from the achievement of a rewarding career. Moreover, post-secondary education is noted to have greater benefit for marginalized populations.

Parental knowledge and educational levels are also known to influence children's post-secondary participation. First, parental educational level is a significant predictor of post-secondary participation (Drolet, 2005; Frenette, 2005). Additionally, previous research has suggested that low-income families generally believe that access to post-secondary education is limited, completing a post-secondary degree is difficult, and that post-secondary education is primarily limited to the disciplines of medicine and law (Sandefur, Meir, & Campbell, 2005; Sutherland & Levine, 2004; Usinger, 2005). Taken together, these suggest a cyclical effect wherein children in poor families with low educational attainment are less likely to develop the cognitive, academic, and motivational skills necessary for the transition to post-secondary education, less likely to advance to post-secondary education, less likely to have access to high-earning employment opportunities, and therefore, are more likely to continue to live in poverty as adults. Based on this knowledge, an ancillary objective of *Career Trek* is to encourage parental/guardian involvement in children's career exploration by providing accurate information regarding admission criteria, financing options, and expanding the range of career options available at post-secondary institutions.

## Academic Resilience: Risk and Protective Factors

According to Masten, Best and Garmezy (1990) resilience refers to the process of, capacity for, or outcome of, successful adaptation despite challenging or threatening circumstances. Within an educational context, academic resilience has been defined as "the heightened likelihood of success in school and other life accomplishments despite environmental adversities brought about by early traits, conditions and experiences" (Wang, Haertal, & Walberg, 1998, p. 46). Bronfenbrenner's ecological framework views child development within a complex system of relationships affected by multiple levels of the surrounding environment. The environment in this perspective is seen as a series of nested structures made of:

- the individual
- the microsystem (the immediate environment of the child)
- the mesosystem (interactions between the microsystem subsets)
- the exosystem (values, laws and customs)
- the macro system or broader social realms

The application of this model to academic resilience therefore examines the interaction of risk and protective factors at the individual, family, school and community levels, and how these influence school success. Wang (1997) claims that,

No single component or practice can account for improvements—rather the crucial element is the way in which successful practices are combined in an integrated system of delivery that considers the needs of the students and the site-specific strengths and constraints. (p. 268)

This type of exploration provides a broader picture of the needs of *Career Trek* participants from an academic as well as an environmental perspective, and allows for an analysis of how participation in *Career Trek* may act as a protective factor for academically at-risk students.

## Academic Risk Factors

Within an educational context, at-risk status refers to the influence of a range of individual (psychological and behavioural), familial, or environmental factors that may impede a student's ability to demonstrate academic success. Risk has been described as "...variables associated with the development of intellectual delays and/or mental and physical health problems in children" (Landry & Tam, 1998, p. 7), elements of an individual's character and their environment that contribute towards negative life outcomes (Howard, Dryden, & Johnson, 1999), and likelihood of school drop-out (Jones & Jones, 2001). Risk factors are generally considered to be cumulative as the number of risk indicators is positively correlated with the likelihood of negative outcomes and compromised development (Landry & Tam, 1998; Sameroff, Seifer & Barkon, 1997). Rutter (1987) defines "risk" as any factor that contributes to a negative developmental trajectory and may include factors in the home, school and community. Rutter's conceptualization of risk is perhaps more valuable because it acknowledges that the composition of risk factors for an individual are not static.

There is a large volume of research that identifies factors associated with the risk of early school leaving (Richman, Rosenfeld, & Bowen, 1998; Wang & Walberg, 1996). Behavioural factors include high rates of absenteeism and skipping classes (Lever, Sander, Lombardo, Randall, Axelrod, Rubenstein & Weist, 2004); psychological factors include learning disabilities (Daniel, Walsh, Goldston, Arnold, Reboussin, & Wood, 2006); and whether a student is considered "successful" (Zajacova, Lynch, & Espenshade, 2005). Family level factors include socioeconomic status (Frenette, 2007), single parent family status (Edstrom et al., 1986), minimal exposure to role models who have completed high school (Wilson, 1987), and parental educational attainment (Drolet, 2005). Environmental factors include school climate, high rates of residential mobility/school transience, living in public housing (Anthony, 2008), and structural conditions within neighbourhoods. Social factors include the consequences of marginalization as a function of race and ethnicity.

Within these factors, socioeconomic status consistently continues to function as the best predictor of children's academic success. Given this, the inner-city of Winnipeg is a particularly challenging educational environment for children and families. Unlike some other metropolitan areas, Winnipeg's low-income neighbourhoods are highly concentrated in one cluster in the downtown core, or what is typically referred to as "the inner-city." According to Statistics Canada (2007), between 1980 and 2000, income fell by 4.5 % in Winnipeg's lower-income neighbourhoods, and about 8.5% of Winnipeg's neighbourhoods had a low-income rate of greater than 40% in 2000, a rate that has not changed since the 1980's. Moreover, recent immigrants, Aboriginal people, and lone-parent families are more likely than other groups to live in low-income neighbourhoods.

As noted by Silver (2000), "... at each and every one of Winnipeg's 15 inner-city elementary schools, more than 50 percent of families with children have incomes below the low income cut-offs" (p. 36). Silver further reports that more than one in every four inner city households in 1996 were single parents (p. 29) and, while he cautions against unwarranted extrapolations, also points out that "... there is a higher probability that ... inner city single-parent families will have incomes below the poverty line" (p. 31).

There are a number of family-based risk factors for early school leaving. Analysis of the *Youth in Transition* data concluded that students who left school prior to graduation were more likely to have lived with a single parent and were also three times as likely as graduates to have parents who had not finished high school (27% versus 9%). Low parental involvement and expectations are also contributing factors. Parental education is a key predictor of post-secondary attendance with each year of parental education increasing the likelihood that children will continue on to post-secondary studies.

At a community-based level, high-poverty neighbourhoods are significantly related to residential mobility, and not surprisingly, the quality and availability of housing stock in the inner-city of Winnipeg is noted to be especially poor (Social Planning Council of Winnipeg, 2001). The lack of quality housing that the lowest income families can afford often results in housing instability, and frequent school moves negatively impact children's academic achievement (Crowley, 2003).

Inner-city children are further exposed to the effects of living in areas with high crime rates. Although the rates of youth crime have remained relatively stable over the past decade, individuals with few economic resources are at higher risk of both perpetrating and being victimized by physical violence. Moreover, male youth from ethnocultural minority groups are at higher risk of engaging in violence due to poverty, racism, and minimal educational and employment opportunities (National Clearinghouse on Family Violence, 1997).

At a macro level, the absence of strong community-school-family partnerships contributes to ongoing marginalization of specific groups. Marginalized populations have a significantly lower chance of completing high school and moving on to post-secondary education. In Manitoba, this is clearly evidenced in the high school completion rates of Aboriginal and immigrant students that are significantly lower than students from dominant populations.

## Academic Protective Factors

An ecological framework is equally useful to identify protective factors that mitigate academic risk. At an individual level, strong self-esteem, perceptions of ability, and intrinsic motivation are factors that contribute toward student success. At a family level, family-school involvement is a key component to students' academic success; children are more successful when their parents are involved in their education. It is important as well to acknowledge that barriers to parental engagement in school systems do not result from a parents' unwillingness to change, but often from a history of negative experiences with schools, a lack of cultural sensitivity, community violence, or other structural issues. At a school-community level, the education research suggests that the most effective schools that retain academically at-risk students are those where independent work habits are encouraged, the teaching staff spend more time interacting with students, and students have positive perceptions about their school overall (Howard, Dryden, & Johnson, 1999).

## The *Career Trek* Program: Instilling Protective Mechanisms

The general intent of *Career Trek* is to provide career exploration opportunities as a means of mitigating academic risk and enhancing protective factors within an ecological framework. First, *Career Trek* incorporates elements into its programming that are associated with school motivation such as: future-oriented planning specifically related to career choice; a sense of accomplishment associated with the commitment to program completion; and, increase in self-confidence and self-determination.

Second, a protective factor found to contribute toward academic engagement is peer relationships (Zimmer-Gembeck, Chipuer, Hanisch, Creed, & McGregor, 2006). The *Career Trek* program provides ample opportunity for participants to make positive peer associations, specifically with children from other schools and school divisions, as they are deliberately grouped with children from different areas. *Career Trek* staff further contribute toward building resilience through an atmosphere of caring and support, high expectations, and opportunities for participation; key determinants of competent schools and communities (Bernard, 1992).

Third, the importance of parental involvement in children's education is noted as an important predictor of academic success. *Career Trek* encourages the participation of parents and family members through Family Days, and also by maintaining clear expectations for family involvement. Although connected with the educational system, the program does not replicate the imbalance in power relationships that has historically often been a part of marginalized families' experiences with school. Moreover, because *Career Trek* prioritizes hiring staff members from program graduates, the racial, cultural, and class issues that frequently separate education professionals from students and their families, particularly in the inner-city, are minimized.

The *Career Trek* program is located at the interface between school and community, and works toward ameliorating the often-rigid boundaries that differentiate school and community. Effective school-community partnerships work to

- make learning relevant to children
- emphasize early childhood education
- recognize the disconnection between school and community
- reduce distrust and cultural barriers

For example, within the inner-city, lack of supervised and/or structured activities during the weekends and evenings increases children's risk of engaging in delinquent activities (Hay, Fortson, Hollist, Altheimer, & Schaible, 2006). Given that the *Career Trek* program occurs on Saturdays, children are provided with the opportunity to engage not only in structured activities but also in meaningful problem-based activities with positive role models, as the majority of program staff are themselves graduates of *Career Trek*. As a community-based program that partners with the educational system, *Career Trek* extends the capacities of schools to foster resilience in children by providing meaningful opportunities for participation wherein children are encouraged to explore numerous career-related activities.

## Children's Career Self-Efficacy

Within the last decade, the subject of career development for young children has emerged as a significant area for study. Historically, educational initiatives regarding career awareness, choice, and vocational aspirations were directed primarily toward secondary-level students, which in large part were based on traditional assumptions about adolescents' cognitive, emotional, and psychological development. In contrast, there is now a substantive body of research that is aimed at exploring the career beliefs, knowledge, and aspirations of younger school-aged children (Trice & Hughes, 1995; Trice & King, 1991). Contemporary perspectives on the career development of children recognize the early reciprocal influences and linkages between children's individual traits, family and peer relationships, and school and community environments, in addition to their social and cultural contexts. We now know that providing children with opportunities to gain knowledge about careers and explore career interests are critical factors that may contribute toward children's future academic and vocational success.

Traditional theories associated with career development are applicable to only a small percentage of the population—those who can realistically expect employment and have the freedom to choose a preferred career (Chartrand & Rose, 1996). For example, most career development theories assume that individuals are continually exposed to career-related choices, a situation that is not applicable to individuals who are socially or geographically isolated (Conte, 1983). Moreover, the limitations of traditional career theories with respect to marginalized groups are increasingly noted in career theory

literature (Brown & Lent, 2000). Hartung (2002) notes that career development theories in their current form are not culturally sensitive because

- they do not incorporate the diversity of students' world views
- they are based upon social/cultural values that may not be applicable to marginalized individuals
- they exclude important career determinants such as racism

Additionally, existing career decision-making instruments, created using White, middle-class and adult populations, are consistently used to identify the career decision making of all groups (Hartung, Vandiver, Leong, Pope, Niles & Farrow, 1998). Therefore, at-risk groups may appear deficient, and career development programming may not take into account the additional barriers encountered by marginalized individuals in their career decision making.

### Career Self-Efficacy

Self-efficacy generally refers to an individual's assessment of abilities to bring about desired effects as a result of one's actions or opinion of capability. Perceptions of self-efficacy originate from three primary sources: family, peers, and school. Individuals in these positions have a tremendous affect on all areas of a child's life and development and self-efficacy is no exception. A positive assessment by a significant person of a child's capability conveys faith in the child and facilitates positive perceptions of self-efficacy. That said, simply telling a child that he or she is capable does not lead to positive perceptions of self-efficacy. Positive perceptions of self-efficacy are rooted in the individuals experience and consequent discernment as to what one can and cannot do proficiently (Pastorelli, Caprara, Barbaranelli, Rola, Rozsa, & Bandura, 2001).

The general tenets of self-efficacy theory have been applied in the specific context of adult career decision making. Career decision-making self-efficacy refers to an individual's belief that he or she can undertake the necessary tasks related to pursuing the career of one's choice. Bandura, Barbaranelli, Caprara, and Pastorelli (2001) hypothesized the relationship between career self-efficacy in four areas: career planning and exploration, knowledge of self and others, career decision making, and school-to-career transitions. This framework has been found to be an effective construct in understanding the career development processes for individuals who may be considered at-risk due to factors of gender, race, ethnicity, socioeconomic status, age, ability, and sexual orientation (Chronister & McWhirter, 2006; Flores, Ojeda, Gee, Lee, & Huang, 2006; Gushue, Clarke, Pantzer & Scanlan, 2006; Lustig & Strauser, 2003).

What is yet to be understood is the relationship between academically at-risk children and career decision-making self-efficacy. As perceptions of self-efficacy begin to solidify as early as middle school, it is of the utmost importance that children have access to means of building positive perceptions of self-efficacy early in their lives. This is especially true in the area of career decision-making self-efficacy as perceived self-efficacy has been demonstrated to be a predictor of career choice and perseverance and resilience in realizing one's career goal where theories such as personality matching and consequential thinking have not (Bandura et al., 2001).

Moreover, career decisions made in the middle school years have profound repercussions in an individual's adult life, as the career domain constitutes a significant portion of one's day-to-day reality as well as contributing to one's perception of self-worth. While children tend not to perceive what they learn in school as having a significant effect upon future occupational attainment, they do base their career attainment decisions upon their constructs of self-efficacy (Pastorelli, Capara, Barbaranelli, Rola, Rozsa, & Bandura, 2001). This means that as early as middle school, students are making decisions as to which skill sets warrant further development and which should be labeled as insufficient and thus abandoned (Bandura et al., 2001). This eventually leads to the foreclosure of various career paths without sufficient knowledge and experience on which to base the perceptions of self-efficacy that lead to these decisions.

## Summary

In summary, the goals of *Career Trek* are to

- increase children's academic motivation and school engagement
- increase children's self-confidence and perceptions of self-efficacy by engaging in a variety of challenging career-related tasks
- increase children's social and independent problem-solving skills through problem-based learning within collaborative groups
- encourage the active involvement of parents via family days and information sessions
- foster greater connections between the participant, the family, the school, and post-secondary institutions

All of these focus points are considered to be protective factors that can contribute to positive life trajectories. The question arises as to whether *Career Trek* accomplishes these goals, and if so, to what extent? The following sections will attempt to answer these questions.

## PART 2: A RESEARCH BASE: FOUR STUDIES ON THE IMPACT OF *CAREER TREK*

### Research Study #1: Changes in Perceptions of Self as Student while Participating in Career Development Program: A Quantitative Analysis

#### Research Objectives

The primary purpose of this quantitative study was to assess the impact of a career exploration program on children's academic motivation, by exploring if participation in the program impacted students' self-concepts, intrinsic motivation, and perception of academic abilities.

#### Research Participants

*Parents* of students, enrolled in inner-city classrooms participating in the *Career Trek* program, were approached to grant permission of their child to participate in a research project that examined career development. Out of a possible 90 participants in *Career Trek*, parental permissions were received for 33 students. Out of a possible 200 control group students (estimation) parental permission was obtained for 11 students.

*Teachers* were asked to provide reasons for recommending a student for *Career Trek*. The most common reason teachers provided for recommending students to the program was low social economic status. The second most common reason was the participant originated from a single parent family. Other reasons were: English as a second language, family has no post-secondary experience, gender, Aboriginal status, history of school transience, visible minority, or newcomer status.

The *Career Trek* program requests parents provide information on their child's age and whether they are of Aboriginal origin (optional). The question regarding Aboriginal origin is to gain a sense of whether the population of *Career Trek* is representative of school division demographics. All of the children were between 11 and 12 years of age. Of the thirty-three participants in the study, 13 were Aboriginal (39.9%). This percentage is representative of the general population of *Career Trek* which is 40% Aboriginal and of the general school population. The students came from 8 different schools located throughout the inner-city of Winnipeg.

#### Research Instruments

During the 2003-2004 and 2004-2005 school terms the research team administered four different questionnaires to assess motivation. These were

- *The Children's Academic Intrinsic Motivation Inventory (CAIMI)*
- *Perception of Ability Scale for Students (PASS)*
- *Rosenberg Self-Esteem Scale*
- *Family, Friends, and Self (FFS) Assessment Scale*

The four scales were administered in the fall and the spring, before and after participation in the *Career Trek* program.

**The Children's Academic Intrinsic Motivation Inventory (CAIMI):** It should be noted that very few questionnaires have been designed explicitly for the measurement of student motivation. Because of this fact, there are few alternatives to choose from. *The Children's Academic Intrinsic Motivation Inventory (CAIMI)* was selected for its demonstrated validity and reliability (Gottfried, 1985) as well as for the fact that it is the only such instrument that provides motivation scores for specific subject areas.

The CAIMI was developed by Gottfried (1985) and is used to measure student intrinsic motivation. It comprises four content scales measuring motivational attitude in

- reading
- math
- science
- social studies

and one scale measuring general motivational orientation. The 44 CAIMI questions comprise 122 items in five scales: Reading, Math, Social Studies, Science, and General. For students with academic difficulties, the CAIMI is an excellent resource for differentiating motivation from achievement and ability factors.

**Perception of Ability Scale for Students (PASS):** To assess improvement in self-concept, the *Perception of Ability Scale for Students (PASS)*, (Boersma & Chapman, 1992) was used. Positive change in self-concept is related to academic motivation – the better you feel about your own capabilities, the more motivated you are in school. The PASS inventory is a self-report designed to assess how students feel about themselves in their school-related lives. The PASS comprises 70 forced-choice “Yes-No” items relating to perceptions of and attitudes towards school performance. Examples of items included in the scale are: “I am a good reader.”; “I make many mistakes in school.”; and, “I like math.”

**Rosenberg Self Esteem Scale:** This scale measures the self-acceptance aspect of self-esteem. Self-esteem is related to academic motivation – if you feel more confident then you are more likely to be motivated to succeed in school. The scale consists of ten items answered on a four-point scale from “strongly agree” to “strongly disagree.” Its wide use within studies that focus on students, high acceptance, and ease of administration make it especially useful for this study.

**Family, Friends, and Self (FFS) Assessment Scale:** The *Family, Friends and Self (FFS) Assessment Scale* is designed to assess social relationships and the psychological adjustment in youth. This scale was important in examining the impact of external factors such as school and family on motivation. Originally the FFS scale was developed using a large and diverse sample (Hater & Simpson, 1981). The FFS is a Likert-scale questionnaire containing 60 items, separated into three parts. The response scale for Parts A and B are the same ranging selecting “none” to “all.” In Part C the scale changes into “Very Unhappy” to “Very Happy.” The questionnaire measures four different

domains: familial contact, peer relations, self-esteem and quality of life. The focus of the measure on the immediate environment of the students and the knowledge that the scale was developed with a diverse population made this scale an appropriate choice for this study. Each inventory was administered twice to the *Career Trek* participants and the control group of students: once at the onset of the program (T1/Time 1 – October) and then once again after the completion of the *Career Trek* program (T2/Time 2 – May). The control group was interviewed during the same time interval as the participants. In order to complete the questionnaires, participants were individually removed from the classroom and given sufficient time to answer all questions and ask questions, if required.

## Findings

### *Intrinsic Motivation and Perceived Ability*

Intrinsic motivation is motivation associated with the desire to learn regardless of external rewards such as marks, and is positively correlated with academic success. At Time 2, intrinsic motivation significantly increased in social studies and science in the *Career Trek* group. There was a significant decrease in the intrinsic motivation general score. As well, there was an increase in the math score and a decrease in the reading score however these changes were not statistically significant. In contrast, intrinsic motivation for all subject areas decreased in the control group over the same time period. In the case of Reading and Social Studies the decrease in intrinsic motivation was statistically significant (see Table 1).

		T1	T2	N	Std. Dev.	T	Sign.
<i>Career Trek</i>	Reading T-Score	48.90	47.93	30	11.09	0.52	0.61
	Math T-Score	48.83	50.67	30	5.65	-0.95	0.35
	Soc. St. T-Score	50.53	54.10	30	9.72	-2.08	0.05**
	Science T-Score	49.63	52.47	30	9.61	-1.80	0.08*
	General T-Score	50.63	46.83	30	12.02	1.79	0.80*
Control	Reading T-Score	53.64	48.73	11	9.25	1.90	0.90*
	Math T-Score	51.64	50.00	11	9.36	0.61	0.55
	Soc. St. T-Score	56.55	51.55	11	7.45	2.60	0.03**
	Science T-Score	54.82	50.91	11	6.68	1.58	0.15
	General T-Score	56.27	51.64	11	14.40	1.13	0.29

\*  $p < 0.10$

\*\*  $p < 0.05$

These findings indicated that motivation around some school subject areas significantly increased for the *Career Trek* students (Social Studies and Science); however, not all subject area motivation changed. This might suggest that *Career Trek* does not have a positive effect on school motivation, yet, in comparison, the intrinsic motivation of the control group over the same time period decreased, and in some cases significantly (Reading and Social Studies). Therefore, it is suggested that participation in *Career Trek* makes it more likely that students will *retain* their intrinsic interest in school subjects.

The PASS scale provides insight into student perceived academic ability and school-related achievement. In the case of *Career Trek* participants, perceived ability in math and reading increased over time, although the differences were not statistically significant. This finding is generally consistent with the results of the CAIMI scale where intrinsic motivation for math and reading increased over time. In the control group, the perceived ability in reading dropped over time whereas it increased in math although neither of these trends was significant (see Table 2).

		T1	T2	N	Std. Dev.	T	Sign.
<i>Career Trek</i>	Full Scale T	51.76	50.52	29	9.20	1.05	0.30
	General Ability T	53.79	53.93	29	11.40	-0.06	0.95
	Reading T	54.28	54.41	29	12.64	-0.07	0.95
	Math T	55.34	56.10	29	11.09	-0.34	0.74
	Penmanship T	51.31	51.45	29	10.10	-0.08	0.93
	School Satisfaction T	53.72	47.41	29	9.07	3.60	0.00**
	Confidence T	55.07	54.34	29	9.39	0.47	0.64
Control	Full Scale T	53.90	53.10	10	5.15	0.63	0.54
	General Ability T	56.40	53.50	10	10.42	1.33	0.21
	Reading T	57.70	55.20	10	12.03	0.58	0.57
	Math T	56.40	58.30	10	12.29	-0.56	0.59
	Penmanship T	53.40	53.10	10	11.38	0.10	0.92
	School Satisfaction T	57.20	57.70	10	9.77	-0.19	0.85
	Confidence T	55.90	52.70	10	7.42	1.59	0.15

\*\* p < 0.05

*Self-Esteem and Family, Friends, and Self Assessment Scale (FFS)*

Two scales were used in this study to explore the relationship between *Career Trek* participation and self-esteem, perception of social relationships, and psychological adjustment. The results of the Rosenberg Self-Esteem scale indicate that overall self-esteem declined in both populations but neither were statistically significant. However, the *Career Trek* population's average response to 6 of the 10 items in the Rosenberg increased over time whereas the control group responses decreased on 7 of these items (two in statistically significant amounts) (see Table 3). These results indicate a similar trend to the results in the CAIMI. The self-esteem of *Career Trek* participants does not change over time whereas the self-esteem of control group students decreases.

Therefore, *Career Trek* may be a retentive factor in the self-esteem of academically at-risk students.

**Table 3**  
Pre/Post Comparison between *Career Trek* Participants and Control Group Participants in the Rosenberg Self-Esteem Scale

<i>Career Trek</i>			t	p	Control		t	p
RSE	Time 1	Time 2			Time 1	Time 2		
1	1.62	1.52	0.698	0.493	1.63	1.50	0.552	0.598
2	2.05	2.24	-0.81	0.428	2.13	1.75	1.000	0.351
3	1.67	1.62	0.370	0.715	1.50	1.63	-0.552	0.598
4	1.52	1.71	-1.451	0.162	1.88	1.38	2.646	0.033**
5	1.81	1.86	-0.204	0.841	1.63	1.50	0.552	0.598
6	2.10	2.25	-0.448	0.659	2.00	1.50	1.528	0.170
7	1.75	1.70	0.326	0.748	1.38	1.38	0.000	1.000
8	2.95	2.57	1.191	0.248	2.75	2.13	2.376	0.049**
9	1.48	1.81	-1.276	0.217	1.25	1.38	-0.552	0.598
10	1.57	1.62	-0.370	0.715	1.88	1.63	0.552	0.598
Cul	18.64	17.23	0.962	0.347	18.00	15.75	1.204	0.268

\*\* p < 0.05

Another questionnaire used to assess the perceived social environment of the child was the Family, Friends, and Self (FFS) assessment scale. This questionnaire is divided into three subscales: Perceived Environment of Friends, Perceived Environment of Family, and Perceived Environment of Self. The analysis that examined the perception *Career Trek* participants held of their family, peer group, and school environments compared to students who did not participate in *Career Trek* suggest that in general *Career Trek* fostered more positive attitudes towards these aspects of an individual's environment. In the three subscales *Career Trek* participants became more positive after participating in the program, although these increases were not significant. Non-participants' perspectives changed more negatively over the same period of time, and in the case of their views regarding family these changes were significant (see Table 4).

<p align="center"><b>Table 4</b>                      Pre/Post Comparison between <i>Career Trek</i> Participants and Control Group                      Participants in the Three Subscales (Perceived Environment of Friends, Perceived                      Environment of Family, and Perceived Environment of Self)                      in the PMES Scale Using Paired t-Tests.</p>						
	T1	T2	N	Std. Dev.	T	Sign.
<i>Career Trek</i>						
Friends	80.25	87.75	20	9.61	-1.38	0.18
Family	29.29	29.33	21	5.68	-0.04	0.97
Self	33.48	34.88	25	5.13	-1.69	0.10
<b>Control</b>						
Friends	82.25	80.88	8	7.50	0.24	0.81
Family	35.67	32.00	6	5.01	2.80	0.04**
Self	35.60	34.60	10	3.44	1.27	0.24

\*\* p < 0.05

There were some interesting findings when items within the questionnaire were examined. In the *Career Trek* group the response to the question “How many of your friends do your parents like?” significantly increased (T1=2.68 T2=3.32,  $t=-2.85$   $p=0.01$ ). *Career Trek* participants also responded significantly more positively to a question related to their residence (“How do you feel about the place where you live?”) and their school administration (“How do you feel about your school principal?”) ( $t=2.13$   $p=0.05$  and  $t=-2.4$   $p=0.03$  respectively). Both control and *Career Trek* participants responded significantly more negatively to the question related to their school (“How do you feel about your school?”) (*Career Trek*: T1=3.12, T2=2.82,  $t=2.13$ ,  $p=0.05$ ; Control: T1=3.67, T2=2.89,  $t=2.80$ ,  $p=0.02$ ). In the case of the *Career Trek* participants this correlates well with the findings of the PASS where school satisfaction decreased over time.

Some other questions that provided significant change over time in the control group were “Are you proud of how you act and the things you do?” ( $t=3.63$ ,  $p=0.008$ ). In this question students were more proud of how they acted at the beginning of the school year (T1=3.13) than at the end of the year (T2=1.25). A second question that elicited significant change over time was “How do you feel about the courses you are taking at school?” ( $t=2.29$ ,  $p=0.05$ ). Students in the control group felt more positive about their courses at the beginning of the school year (T1=3.56) than at the end of the year (T2=3.00).

The results of the FFS assessment scale suggest that the *Career Trek* participants’ perceptions of their social environment positively increased after completing the program. In comparison, control group perceptions of their school environment decreased over time.

## Discussion

Within education, the transition from elementary to middle school is a recognized stressor (Lohaus, Ev-Elban, Ball, & Klein-Hessling, 2004). Several researchers have reported general developmental declines at this stage in many of the important motivational attributes such as; interest in school (Epstein and McPharland, 1976), intrinsic motivation (Harter, 1981), self-concepts of ability (Eccles et al., 1983; Marsh, 1989) and self-esteem (Simmons & Blyth, 1987; Simmons, Blyth, Cleave, & Bush, 1979).

In another study on motivational changes of sixth grade students moving to seventh grade, researchers found that general self-esteem was lowest in the first two months of seventh grade year (Eccles et al., 1989; Wigfield, Eccles, MacIver, Reuman, & Midgley, 1991). In addition, students’ perceptions of their abilities in language arts and social activities showed the largest decreases between the spring of the sixth grade year and the first two months of the seventh grade year.

With respect to academic retention, data regarding the academic success and motivation of *Career Trek* participants as they undertake the transition to middle-school does not form part of this analysis. However, there are indications that *Career Trek* participants may approach the transition to middle school in a more positive manner than the control group. Preliminary observations of the quantitative results would suggest that there are

no significant changes in academic motivation for *Career Trek* participants. However, closer examination and comparison with the control population and review of the literature relevant to the middle years motivational decline, indicates that motivational retention is a positive outcome. In other words, *Career Trek* contributes to circumventing the traditional motivational decline around academic achievement that typically occurs around pre-adolescence.

Generally, in the intrinsic motivation and perceived ability scales, T1 *Career Trek* participants scored lower in subject-domain scales (e.g. reading) compared to the control group students. However, at T2, *Career Trek* participants increased their motivation and perception of abilities, whereas the control group decreased to below the *Career Trek* T1 level. Further evidence to support this conclusion is found within the qualitative data reported later in this monograph. *Career Trek* participants reported themes of persistence, increased self-esteem, and increase in their ability to positively identify themselves as students. These factors are noted to be significantly associated with school retention and academic engagement (Evans & Burke, 1992). If career education increases motivation, than it may have greater impact on school performance if it is included at an earlier grade.

Perception of ability, specifically related to school tasks decreased in both the *Career Trek* participant and control groups, however in *Career Trek* this change was significant. Some possible explanations for this finding are

- An informal career education program does not impact perceived satisfaction with school tasks for this specific age group. Currently, there are few linkages between the formal education system and *Career Trek*. Therefore, it is not surprising that participants do not perceive the transferability of academic skills and tasks between both systems. In order to explore this further, creating a career education program that is directly connected with classroom tasks may result in greater perceived school satisfaction.
- *Career Trek* impacts students' perceptions of their abilities in such a way that students develop more accurate or realistic ideas about their academic abilities.

In conclusion, informal career education positively contributes to academically "at-risk" students' perceptions of their own abilities, self-esteem and attitudes towards school compared to students in the general population. This study indicates that linking the *Career Trek* tasks with those associated with the classroom may improve the impact of career education on perceptions of school engagement. The quantitative analysis examining participants' perceptions of their families, peer groups and school environments compared to the control group suggested a trend in which *Career Trek* fostered more positive attitudes toward these aspects of an individual's environment. In contrast, non-participants' perspectives changed more negatively over the same period of time and, in the case of their views regarding families and friends these changes were significant. Participation in *Career Trek* then may serve as a protective factor for elementary to middle school transitions.

## Research Study #2: Self-Efficacy and Career Development in Academically At-Risk Children

### Research Objectives

The purpose of this study was to investigate the impact of the *Career Trek* early intervention career exploration program on academically at-risk children's perceptions of career self-efficacy. The importance of participating in career exploration opportunities for increasing children's career decision-making self-efficacy has implications for children's career choices, development and academic success.

### Participants/Inventories

The sample size for this study was 30 children, ages 11 and 12, who participated in the *Career Trek* program. Children and their parents completed a modified version of Bandura's *Career Self-Efficacy Scale* pre- and post-participation. Questionnaire responses were entered into a database and pre/post answers were tabulated and totals compared using t-tests.

### Children's Career Self-Efficacy

The Children's Self-Efficacy Scale is comprised of eight sections that assess children's confidence in their abilities to request and receive assistance when needed, learn the four primary subjects as well as computer skills and an additional language, manage the tasks associated with learning (completing homework, studying, taking good notes), manage peer pressure, develop positive peer relationships, encourage family involvement in their schooling, and manage the tasks associated with career planning (See Appendix 1).

### Findings

Findings from this study revealed that children's perceptions of their career decision-making abilities (Table 2.1: Section 8 of Questionnaire) significantly increased after participation in the program.

<b>Table 2.1</b> F Values and Significance of Student Responses to Section 8 of Self-Efficacy Scale				
How well do you think you can ...	T1	T2	F	Sign
Find information in the library about careers you are interested in	3.82	4.00	0.516	0.475
Identify subjects that are important for a career you are interested in	3.94	4.04	0.033	0.856
Identify the steps you need to take if you are having trouble in a subject area that is related to a career interest	3.76	3.86	6.334	<b>0.015*</b>
Know your own strengths and weaknesses around a career	4.06	4.25	0.120	0.731
Select one career from a list of potential careers you are interested in	3.85	4.11	0.011	0.917
Identify the steps you need to take to successfully reach your career goal	3.88	3.96	0.101	0.752
Determine what your ideal career would be	3.69	4.43	13.877	<b>0.000**</b>
Continue to pursue your career goal even when you get frustrated	3.91	3.82	2.649	0.109
Decide what you value most in a career	3.91	4.07	3.959	<b>0.051*</b>
Talk with a person already in a career you are interested in	3.78	4.15	3.565	0.064
Choose a career that will fit your interests	4.25	4.43	0.535	0.467
Find out information about a college or university requirements for a chosen career	4.00	4.04	0.001	0.974
Identify the steps you need to take to go on to college or university	3.78	3.68	0.423	0.518
Have more than one career goal in case the first one doesn't work out	3.97	4.32	0.870	0.355
Identify places where you could work in your chosen career	4.09	4.00	1.043	0.311

\*  $p < 0.10$

\*\*  $p < 0.05$

These findings suggest that early exposure to career exploration programs can increase in children's self-efficacy in career decision-making. It appears that participation in *Career Trek* positively influences the extent to which academically at-risk children perceive themselves to be capable of successfully pursuing careers in different areas. From this we can suggest that both instrumental skills (i.e., knowledge and abilities), and subjective factors (i.e., self-efficacy beliefs and outcome expectations) are important in the career development of academically at-risk children. As a result, traditional classroom-based approaches to career development that focus primarily on concrete skill-development tasks, rather than attitudinal influences, may prove to be less successful with this population.

## Research Study #3: Risk and Protection Factors in Inner-City Career Development: A Qualitative Analysis

### Research Objectives

Grounded with the frameworks of resilience and self-efficacy, the focus of the qualitative component of these studies were to identify the risk and protective factors for academically at-risk students, aged 10-11, from Winnipeg's inner-city, enrolled in grades 5 and 6. All research participants were interviewed prior to the start of the *Career Trek* program and again approximately two months after program completion. The majority of these interviews were audiotaped and transcribed for analysis. A total of 49 interviews – 31 participant and 18 control group students – form the basis of the content analysis, in addition to parent and teacher interviews. The interview questions were based on an ecological framework and explored issues related to the student's perceived school performance, school satisfaction, peer relationships, family relationships, extracurricular activities, and career development. Additionally, parents were interviewed regarding their perceptions of children and parental confidence in terms of career decision making (See Appendix 2 for interview questions).

### Findings

#### *Demographics*

All of the participants had a significant history of school transience and the majority of students had changed schools at least once in the previous 12-month period. Several families had relocated from rural areas to the city, others had moved to different neighbourhoods while remaining within the inner-city, and several families had recently immigrated to Canada. Several participants had also changed schools due to parent-school conflict or negative peer interactions. Students in both control and participant groups resided within similar family structures ranging from foster families to separated, divorced, two-parent, single-parent, and grandparent families. The majority of students had siblings or foster siblings. *Career Trek* participants described their relationships with parents or caregivers as generally positive, and reported that family members and peers were their most important supports. They further described positive relationships with their teachers and schools. All were able to identify favourite subjects, predominantly math, science and social studies.

### *Risk Factors*

Although the majority of parents were employed, most had not completed high school. Only three of the twenty-four parents interviewed reported that they had attended a post-secondary educational institution. Parents identified a number of risk factors at the community level. One mother stated that “lots of poverty, theft, and bullying” had entered her child’s school as a function of being in an inner-city neighbourhood. Aboriginal parents believed that their children were less likely to obtain a good job in the absence of an education due to their culture/ethnicity, and recognized that having an education was especially important for their children. Interestingly, several parents stated that the cultural diversity of their neighbourhood was a protective factor as it exposed their children to a range of cultures.

### *Career Trek: Instilling Protective Factors*

#### *Participants’ Perspectives*

**Student Identity:** *Career Trek* participant and control groups were distinct in their descriptions of “self-as-student.” At the end of the program, in contrast to describing themselves as “good” students as in Time 1, the *Career Trek* participants communicated feeling positive about their student identity. Comments included “I feel really good about myself as a student.” “It [*Career Trek*] made me feel smarter.” This suggests that while their academic abilities may not have increased, their perceptions of themselves as students were strengthened and enhanced. In view of findings that suggest that students who are invested in academic success and believe it to be within their control exhibit fewer stress-related problems with school transitions (Rudolph, Lambert, Clark, & Kurlakowsky, 2001) reinforcing student’s beliefs about themselves as students may contribute to future academic success.

**Knowledge of Self:** Several students articulated that participation in *Career Trek* had helped them identify personal traits that may or may not fit with a particular career. For example, one student was able to describe the quality of patience as important for future teachers, and reflected that this was a trait that she could develop. Another child identified that wanting to help people was also important for teaching. In addition to the intrinsic factors, participants were also able to identify extrinsic factors for exploring particular careers, and indicated that potential earnings were a consideration in terms of choosing these careers.

**Relationships:** The protective nature of formal and informal social support is a critical moderator for academically at-risk children (Richman, Rosenfeld & Bowen, 1998). To this end, *Career Trek* participants identified the relationships with peers and instructors as important aspects of the program.

**Awareness of Potential Barriers:** The ability to identify potential barriers to post-secondary education is an important aspect of resilience. A critical difference between the two groups was in the area of potential barriers to achievement of career goals. Students in the control groups could not identify any substantive roadblocks or barriers that would prevent them from achieving their career goals. In contrast, the *Career Trek*

participants were able to identify a number of potential barriers. One boy expressed that family problems and parental commitment may impede his pursuit of post-secondary education, others focused upon the academic component. *Career Trek* participants were also able to identify problem-solving skills as an important aspect of their learning: As noted by one participant, "I think *Career Trek* is a really good thing because it helped me know if I want to become a pediatrician or if I want to help animals." After participation, another student stated, "Sometime I don't ask my teacher for help. I just think about it and I understand. I work it through myself."

**Future Orientation:** There were noted differences expressed between participant and control students in describing their school experiences from the previous year, to the *Career Trek* year. Several participants indicated that "this year was better than last" and were positively anticipating the transition to their new school. When asked about the upcoming school year (transition to middle school) one student summarized the feelings of many participants through the following comment, "I am kind of scared, but I'll probably survive."

**Knowledge of Post-Secondary Institutions:** A key difference between the participant and control groups was the *Career Trek* students' articulated knowledge of the three post-secondary institutions in Winnipeg and the differences between them. Whereas the *Career Trek* participants were able to name the institutions with reference to size and preference, none of the control students were able to identify any institution by name.

**School to Post-Secondary Planning:** Congruent with previous research (Sutherland & Levine, 2004), *Career Trek* participants referenced the concept of "finishing" high school in order to move on to post-secondary education, and subsequently, their preferred career. Students described "completing school," "not dropping out of school," "finishing high school," as the critical first steps prior to entering a particular career. Although both groups identified the importance of achieving good grades, the control students did not reference the concept of completing high school as a means of undertaking the transition to post-secondary education and/or achieving career goals.

**Career Planning:** *Career Trek* participants' narratives suggested greater planning capability with respect to sequencing educational achievements in terms of their career goals. For example, students were able to identify which courses and specific subjects were necessary to complete in order to move on to their preferred careers. Several students described that abilities and skills in the sciences were necessary in order to pursue medicine, another student identified that science was also important for marine biology, and yet another student identified that sound knowledge of social studies was an important subject for careers in either education or government.

### **Parents' Perspectives**

According to parents, the key protective factors perceived to be fundamental to their children remaining in school and advancing to post-secondary education were perseverance and academic ability. All parents interviewed indicated that perseverance was the primary protective factor that would influence their children's academic success. Comments ranged from "Once he gets his head set on something there is no

stopping him,” to “When she cannot do something, that’s when she tries harder,” to “She’s bound and determined to pass grade 12 and make something of herself.” Parents further identified that their children excelled in specific subjects including at math, reading, science, and art. Some parents were clearly aware of their children’s actual grades, and others noted that their children’s academic performance had improved throughout the course of the academic year. These inner-city and minority parents perceived that their children were more likely to be academically successful as a result of their cognitive abilities and individual motivation, rather than attributing success to external factors such as easy/difficult classroom work or the learning environment.

### Teachers’ Perspectives

Academic capability, positive work ethic, leadership qualities and maturity emerged as the predominant protective factors identified by the teachers of *Career Trek* participants. Teachers used descriptors in their interviews about *Career Trek* participants such as independent, optimistic, consistent, responsible and well balanced.

Teachers identified family involvement in school, family functioning, family communication, and boundary maintenance as key protective factors for *Career Trek* participants. Teachers spoke of the need for parents to take a proactive role in creating a positive future orientation and ensuring a structured home environment. Families were perceived to be the primary factor in controlling negative peer influences. As one teacher noted,

Support is the biggest thing with him. With any student is, that’ll help them is support at home. The guidance, if they’re, you know, he’s in grade six, goes to grade seven next year. If he gets caught up with the wrong crowd, starts hanging around with the wrong people, you know, let’s be realistic, if that starts happening, and parents don’t intervene right away, graduation day will be non-existent.

Protective factors of *Career Trek* identified by teachers were: curriculum content and how it related to school curricula, new and unique opportunities, and future orientation. *Career Trek* participants were identified by teachers as being better able to connect with classroom content as a result of their previous exposure to similar material. The teachers identified the positive effect the exposure to post-secondary institutions had on *Career Trek* participants and their families. As one teacher notes, this is particularly relevant for inner-city students because they do not have the (financial) opportunity to attend “Mini-University” summer programming. *Career Trek* was also noted to provide a focus to education; as one teacher stated:

I think it gives the kids focus, so that if the kids know that they’ve got a career that they’re looking forward to it can help them focus a lot more... It can help them focus a lot more on their jobs in school because they know it’s going somewhere.

## Research Study #4: Family and School Involvement in Career Development

### Research Objectives

The primary objective of this study was to identify parental perceptions of factors that impede children's career development and post-secondary participation. Secondly, the research questions were designed to initiate the development of interventions to promote family involvement in children's career exploration activities and post secondary participation. Parents were interviewed regarding their role in their child's career exploration activities.

### Findings

Analysis of the parent interview data suggested four overarching themes:

- *Career Trek* functioned as a catalyst to for career-related discussions
- parents viewed their role in career exploration as one of encouragement
- they did not want to be perceived as "pushing" their children into particular career paths
- they were not informed and thus felt unprepared to discuss career exploration with their children

**Career Discussions:** Parents described how their children would routinely return from *Career Trek* and report on their activities for the day, discuss how particular careers were or were not exciting, and generally express positive self-perceptions about their abilities to advance to post-secondary education. As one mother stated, "Whenever she's finished on Saturdays, she'll tell me what she's done and how she likes it." Other parents took the initiative to discuss *Career Trek* activities with their children. One father indicated that he and his son engaged in a weekly discussion upon the child's return from the program, "We ask him what he did in CT and then he goes into lots of detail and tells us about everything that he does." Parents described *Career Trek* as a mechanism that provided useful information about potential careers. One father stated that *Career Trek* provided his daughter with the opportunity for "diversification, so she'll have a variety of choice and hopefully find something that she'll like." Another parent explained that through participation in *Career Trek*, his child was "seeing all the options and being exposed to the variety of careers."

**Encouragement:** When asked how they support their children, all of the *Career Trek* parents stated they encourage their children to ask questions, encourage them to achieve good grades, encourage them to complete high school, and encourage them to consider post-secondary education. Parents identified family support as a contributing factor related to children remaining in school and advancing to post-secondary education. Family support is a multidimensional concept that is significantly associated with children's academic resilience and advancement (Dubow, Arnett, Smith, & Ippolito, 2001; Hebert, 1999). Within educational settings, support may reflect concepts of family cohesion, emotional bonding and parent/family involvement in school-related activities.

Parents generally referenced family cohesion factors of emotional support more frequently. Parents described themselves as being proud of their children, encouraging them to choose careers perceived to be enjoyable, “staying behind their children no matter what,” and helping their children with their homework. One parent wrote her daughter a letter with the message that “you can be anything that you want to be!” In contrast to the majority, three parents clearly articulated active engagement in their children’s career exploration. One parent defined her role as providing information about a variety of careers using examples located within the family’s informal network, specifically highlighting the different professions of extended family and friends. Similar connections were facilitated by another parent who encouraged her daughter to ask questions whenever they visited various professionals including doctors, dentists or veterinarians. A third parent purchased a stethoscope for her daughter who had expressed interest in becoming a veterinarian. This transaction created the opportunity for her child to engage in experiential exploration of her particular career interest.

**Fear of “Pushing”:** At the same time, parents strongly expressed that they did not wish to influence or “push” their children in a particular direction. They emphasized that it was important for them as parents to leave it open for their children to “explore,” to ask questions, but not initiate these types of discussions. For example, one parent stated that when she perceived her daughter to be serious about a particular career, she would then engage with her. Similar interaction patterns were identified by other parents. When children were focused on a particular career, parents responded. However, when children did not specifically identify any career-related goal, they did not initiate any type of career-related discussion.

**Feeling “Uninformed”:** When asked whether they themselves felt confident in being able to access information related to career exploration and decision making, parents unanimously expressed that they lacked confidence in their abilities to provide this type of support to their children. Although parents indicated they could discuss the general ideas of career with their children, parents were not able to share specific information with their children. Parents linked their lack of confidence in helping their children to their inability to access information regarding career choices for themselves. Parents discussed how they did not know how to obtain information about careers for their children nor did they indicate that they knew how or where to access this type of information. As one parent described “I don’t have a clue!”

**Family/School Involvement:** Parents believed that protective factors within schools included actively “recruiting family involvement,” having a “good/great teacher,” and “keeping the kids challenged.” Parents did not however, perceive their personal involvement in school-related activities as important to their children’s academic success, and felt that their participation in parent-teacher meetings, parent councils, or volunteering in the classroom was most often initiated by school staff. Parents were both appreciative and receptive to school-initiated contact; however, this most often occurred as a result of school-based initiatives.

### **Discussion: *Career Trek* and Resilience**

Within the current Manitoba context of scarce resources, it is clear that neither schools nor communities can afford to offer important programs and service by themselves and in isolation from one another. Therefore, intentional efforts to create partnerships with families, schools, and a variety of formal and informal organizations and institutions in the community may improve effectiveness with the view toward strengthening families, schools, and communities. As a community-based program that partners with both the elementary and post-secondary educational systems, *Career Trek* extends the capacities of families and schools to foster academic resilience in children. Results of the interviews with *Career Trek* participants, parents and teachers are congruent with previous findings which conclude that school-based initiatives directed towards academically at-risk children within their homes, schools, and communities are more likely to foster successful academic outcomes (Borman & Overman, 2004).

First, at the individual level, academic resilience is associated with social competence. Based on the belief that learning is facilitated by the quality of personal relationships, *Career Trek* ensures that students from different schools are grouped together. Particular attention is given to ensuring that groups have a mix of rural and urban, and suburban and inner-city students. These experiences create the context in which children may develop alternative viewpoints to some stereotypical beliefs about “difference” that remain embedded within school systems and encourage students to develop larger friendship and social networks. Further enhancing these relationships is a curriculum designed to foster essential skill development in the areas of team work, problem solving, decision making, assertiveness, peer relationships, and conflict resolution. Working with other students on group projects provides participants with opportunities to develop positive relationships with a variety of individuals, share new ways of thinking, and develop new ways of behaving. These are skills that are critical for the 21st century workplace.

Second, from an ecological perspective, the *Career Trek* program introduces the concept of career development and post-secondary education to children and families in which the majority of parents have not completed high school. Academically at-risk students generally have exposure to a narrowly defined future. *Career Trek* broadens children’s aspirations to extend beyond the expectations of their social context by developing their problem-solving skills and exploring how their talents fit within a career. This is particularly important for at-risk students as poverty, discrimination, and limited exposure to post-secondary institutions restrict minority children from learning about the broad range of educational and vocational options (Kozol, 1997).

Third, *Career Trek* adopts a developmental perspective in career decision making that recognizes the importance of beginning career exploration activities at the elementary school level. Although children at this age are routinely advised that “school is important,” they are generally unclear as to the reasons that formal education is essential and likely do not have the capacity to make the links between specific subject areas and particular careers. Further, career development content is not a mandated

component of the elementary school curriculum. Therefore, there are no clear opportunities for students to investigate possible career options during these formative years.

The *Career Trek* program builds on many of the previously established resilience-enhancing factors for children and families by exposing them to future educational opportunities at a stage when at-risk children begin to exhibit school-related problems. In the absence of comprehensible links between education and future aspirations, elementary to middle-school transitions for academically at-risk youth precipitate increasing disengagement from school (Eccles & Midgeley, 1989). Possessing a career goal may serve as a protective factor for an adolescent's healthy development (Fleming, Woods, & Barkin, 2006). If children enter adolescence with an increased awareness of their career goals, they may be more resilient to the risk factors to their development that are associated with urban, inner-city environments. This challenges existing curriculum guidelines that introduce content on formal career exploration toward the beginning of senior years. At this point, youth who are not already academically engaged are significantly less likely to become so, and are at increased risk of not graduating.

Informal career education positively contributes to academically "at-risk" students' perceptions of their own abilities and attitudes towards school compared to students in the general population (Sutherland & Levine, 2004). Upon completion of the *Career Trek* program, participants described personal attributes and career aspirations in much greater detail, compared to the control students. Additionally, interviews with participants and family members provide some support for the idea that creating new learning opportunities outside of the school setting enables and encourages participants to access learning in new and different ways. Therefore, *Career Trek* offers a medium that is more congruent with the developmental and learning needs of the participants and their families.

Previous research has also identified the positive influence of parental involvement in the career development of their children (Downing & D'Andrea, 1994). However, when parents feel helpless or uninformed, their capacity to influence their children's career exploration activities is limited. The majority of *Career Trek* parents have not completed high school, and for many of them, this is the first opportunity to be exposed via their children to a post-secondary institution. Academically at-risk children require additional input from parents in order to reduce their risk of early school leaving. Parents expressed that as a result of their children's involvement in *Career Trek*, they have an increased awareness of the range of career paths that are possible within post-secondary institutions. This supports emerging literature that suggests that career development is enhanced through the "family push" or when career exploration becomes a family project (Whiston & Keller, 2004).

### *Implications for Practice*

Findings from this study have useful implications for educators, administrators and school social workers. First, academic resilience is facilitated through academic institutions at all level and community-based programs that translate the ecological perspective into actual practice. Family-centred collaboration suggests that all family members benefit by family involvement in children's education. However, the capacity to foster positive family-school involvement remains a challenge. Low-income parents have less involvement in school-related activities compared to middle-class parents (McNeal, 1999) and parents, particularly Aboriginal parents, continue to struggle with the historical legacy of highly conflictual or negative relationships with schools (Neegan, 2005). For low income and ethnically diverse parents/families, the *Career Trek* program may provides alternative opportunities that encourage parents to shift from being passive recipients of services to take on meaningful roles in their children's education.

Inner-city schools continue to reflect cultural and economic disparities between families and school staff, and this study indicated that parents and teachers have disparate ideas regarding how family-school connections are best facilitated. However, in order to successfully engage with their children, families need to be informed about the content of their children's education. Many parents will recognize themselves in the image of a parent who is unable to assist his or her child with math homework. For families who are marginalized on the basis of language, socioeconomic status, family structure, or ethnicity, feelings of shame are only intensified. In order to counteract these effects, it is critical for school staff to make concerted efforts to provide information in a manner that parents can accept without fear of being perceived as inadequate. Building on this, educators can then develop school-based initiatives that will encourage parents and children to undertake career exploration activities together and engage in career-related discussions. Although these occurred spontaneously in the context of *Career Trek*, similar discussions may be facilitated through structured activities initiated at the school level that involve meaningful family participation. Our findings suggest that community-based career education programs can act as an interface in which the critical resilience-enhancing linkages between families, school, and post-secondary education are reinforced.

Secondly, findings from this study suggest that formal career development programs can promote academic resilience by creating opportunities for children to experience the wide variety of careers that are possible within post-secondary institutions. Many career exploration activities are based on personality inventories or other paper-based measures that do not allow children to experience the actual task and activities associated with different careers. Academic resilience is associated with direct experience compared to other forms of knowledge transmission and at-risk youth learn more effectively through kinaesthetic experiences. The experiential format of *Career Trek* encourages children to assess for themselves which careers may and, perhaps just as importantly, may not fit.

At the family level, findings reinforce the importance of parental involvement in children's career exploration. School staff – including administrators, educators and social workers – need to reinforce with parents the critical association between family involvement and children's career exploration activities. Although perseverance is a key personality trait that contributes toward children's academic success, parents need to be aware of their own influence in promoting career exploration. Moreover, there is a need to identify the differences between facilitating children's career exploration and "pushing" children in a particular direction. "Parental push" (conversations parents have with their children about their future) is a strong indicator of children's academic success. One measure of parental push is the numbers of conversations parents have with their children about their future.

At the school level, findings from this study highlight the importance of early intervention and beginning career exploration activities at the elementary school level. This is congruent with previous research that suggests developmentally based career exploration programs can broaden children's knowledge of diverse occupations and career possibilities.

The position that community involvement that is targeted toward improving educational outcomes for marginalized youth is essential to sustain the long-term efforts for developing and maintaining career exploration opportunities needs to be further entrenched. Building relationships between elementary school systems and post-secondary institutions is an important component of creating a future orientation within children and their families, particularly those from inner-city communities. Furthermore, it is these types of family-school-post-secondary initiatives that are more likely to result in successful educational outcomes for academically at-risk students. The connection between elementary school systems and post-secondary institutions connects to the ongoing issue of funding that impact career development programs at several levels. The need to extend resources to develop promising demonstration projects into sustainable initiatives that target larger numbers of children and youth is well demonstrated. For example, children with disabilities, youth located in remote northern communities, adolescent mothers, and Aboriginal youth from both urban and rural communities are often socially isolated and lack the resources to access career development information or programs. All of these communities would benefit from career exploration programs that target their unique needs.

We conclude, therefore, that *Career Trek* is an innovative program that provides educators, social workers, and other professionals concerned about poverty reduction, ideas about how to promote resilience in academically at-risk youth. It begins from a position that all children are capable of completing school and advancing to post-secondary education if presented with the appropriate information and opportunities. Research continues to indicate that teachers tend to deprive students of a meaningful or motivating context for learning or using skills that are taught. They also postpone more challenging and interesting work for too long and underestimate what disadvantaged students are capable of doing (Knapp & Turnbull, 1990). *Career Trek* engages children in meaningful career exploration activities that encourage them to actively think, grow, experience, change, and develop by creating the life they want to live and the work they want to do.

### **Discussion: Career Trek and Self-Efficacy**

These findings further suggest that early exposure to career exploration programs can increase in children's self-efficacy in career decision making. First, self-efficacy is noted as a significant predictor of intentionality (Broadhead-Fearn & White, 2006). Therefore, increasing children's career self-efficacy through early intervention programs may mitigate the risk of early school leaving and instill recognition that future rewards and benefits of career achievement are a direct outcome of high school completion. This may be particularly useful for children who may not have exposure to adults who have completed high school or are regularly employed.

Secondly, effective career exploration programs for academically at-risk children facilitate students' development of key competencies: the ability to identify post-secondary requirements for careers of interest; and, knowledge of how to access practical information about post-secondary education including admission requirements, program fees, and selection of secondary level courses. Program participants expressed confidence in being able to articulate a fairly sophisticated level of career planning knowledge that can assist them in making informed educational decisions. Labour market advantage comes from completing, and not simply attending post-secondary educational institutions. If children have an enhanced awareness of the types of careers that they are motivated in exploring and express greater confidence in choosing and completing the appropriate program, they are more likely to pursue post-secondary educational programs that are congruent with their career goals. Their choice of career may be based on intrinsic factors (a desire to help others) or extrinsic (potential earnings). Although as a society we generally accord greater value to intrinsic motivation, the indication that at-risk students were able to link both intrinsic and extrinsic motivation to career choice suggests a level of career planning that they may not be exposed to otherwise.

Third, the high cost of post-secondary education may limit children from lower socioeconomic groups from completing general liberal arts degrees, followed by the preferred area of specialization. Increasing academically at-risk children's career decision-making self-efficacy may contribute to greater utility of limited financial resources for post-secondary education. Additionally, indecisiveness regarding career is noted to be a risk factor for future levels of coping with the career decisional tasks of broad and in-depth environmental exploration (amount of information and exploratory behavior), amount of self-information, decisional status, and commitment (Germeijs, Verschueren, & Soenens, 2006). Findings indicated that participating in a career exploration program increase children's self-confidence in choosing a career goal and pursuing the necessary subjects to achieve that goal. Therefore, engaging children in early intervention career exploration programs may mitigate potential indecisiveness that limits individuals' opportunities to under take the necessary tasks to engage in career exploration.

## Summary

In summary, it appears that early intervention career exploration programs that incorporate knowledge of children's risk and protective factors, and encourage the development of self-efficacy, can be an effective way of promoting academic resilience. Although the short-term academic effects are not always positive, one explanation for this is that students gain a more realistic perspective of their career goals. For example, envisioning oneself as a veterinarian because one "loves animals" is noble, but by becoming aware that to achieve this goal requires a strong foundation in the sciences may result in some initial decreases in academic motivation. At this stage of children's development, career exploration programs may provide a maintenance benefit, rather than an observable increase in academic motivation. Moreover, although career exploration may not result in an immediate academic increase, children's career decision-making self-efficacy increases.

Findings from these research studies confirmed that family members and teachers are important contributors to children's career exploration. Not surprisingly, teachers focused on the short-term indicators, and clearly viewed parents as being critical to their children's academic success, defined as high school completion. In turn, parents in this population overwhelmingly stated that it was their children's individual traits of perseverance that would facilitate the achievement of their career goals. It is concerning that academically at-risk children's career decision making is identified as an individual responsibility. Bandura (1997) demonstrated that children will develop positive academic aspirations if their parents possess positive feelings about academic self-efficacy. Academically at-risk children require additional input from parents in order to reduce their risk of early school leaving. What became evident however is that parents are not aware of the need for them to take a more active role in their children's career exploration. This may be partially a result of not knowing how to access information about careers, not having experienced high academic expectations within their families of origin, or fears of projecting particular pathways onto their children. Children's career decision-making self-efficacy will be enhanced with initiatives that facilitate parental knowledge-building around career exploration, and the importance of family involvement.

At the same time, it does not appear that families are sufficiently informed about the positive impact that can result from engaging in career exploration conversations with their children. School staff, family support workers, and community-based agency staff all need to inform parents' about their critical roles, and help parents distinguish between initiating career-related discussions from "pushing" their children in particular directions. As well, parents clearly articulated their needs for greater information about careers, post-secondary educational institutions and strategies to help their children in decision making. This clearly highlights the need for first, career exploration programs to increase parental involvement in a manner that reinforces the importance of the family "push," and second, determining how this information can best be disseminated.

Clearly, the school has an important role to play in facilitating parental involvement, and parents view school-based initiatives more positively. Therefore, if parents are to become more involved in schools, the invitations will need to be extended from school staff. The absence of effective partnerships between families, schools, and communities will only serve to maintain the marginalization of at-risk children. Children and families are best served when schools undertake intentional efforts to create and sustain relationships between families, schools/divisions and a variety of formal and informal organizations and institutions in the community. Bringing students, families, schools, and community organizations together to focus on career exploration programs can perhaps act as the catalyst for these partnerships to occur.

## REFERENCES

- Anthony, E. (2008). Cluster profiles of youth living in urban poverty: Factors affecting risk and resilience. *Social Work Research, 32*, 6-17.
- Bandura, A. (1997). *Self-efficacy: the exercise of control*. New York: W.H. Freeman.
- Bandura, A., Barbaranelli, C., Caprara, G., & Pastorelli, C. (2001). Self-efficacy beliefs as shapers of children's aspirations and career trajectories. *Child Development, 72*, 187-207.
- Bernard, B. (1992). Fostering resiliency in kids: Protective factors in the family, school and community. *Prevention Forum, 12*, 1-16.
- Boersma, F. J., & Chapman, J.W. (1992). *Perception of Ability Scale for Students Manual*. Los Angeles, CA: Western Psychological Services.
- Borman, G., & Overman, L. (2004). Academic resilience among poor and minority students. *Elementary School Journal, 104*, 177-196.
- Broadhead-Fearn, D., & White, K. (2006). The role of self-efficacy in predicting rule-following behaviors in shelters for homeless youth: a test of the theory of planned behavior. *Journal of Social Psychology, 146*, 307-325.
- Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge, MA: Harvard University Press.
- Brown, D., & Lent, R. (2000). Theory and the school-to-work transition: Are the recommendations suitable for cultural minorities? *Career Development Quarterly, 48*, 370-384.
- Bryan, J. (2005). Fostering educational resilience and achievement in urban schools through school-family-community partnerships. *Professional School Counselling, 8*, 219-231.
- Chartrand, J. M., & Rose, M. L. (1996). Career interventions for at-risk populations: Incorporating social cognitive influences. *Career Development Quarterly, 44*, 341-353.
- Chronister, K., & McWhirter, E. (2006). An experimental examination of two career interventions for battered women. *Journal of Counseling Psychology, 53*, 151-164.
- Conoley, C., & Kramer, J. (1989). *The tenth mental measurements yearbook*. Lincoln, NE: Buros Institute of Mental Measurement.
- Conte, L. E. (1983). Vocational development theories and the disabled person: Oversight or deliberate omission? *Rehabilitation Counseling Bulletin, 27*, 16-328.
- Crabtree, B., & Miller, W. (1992). *Doing qualitative research*. Newbury Park, CA: Sage Publications.
- Creswell, J. (2002). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*. New York: Sage Publications.

- Crowley, S. (2003). The affordable housing crisis: Residential mobility of poor families and school mobility of poor children. *Journal of Negro Education*, 72, 22-39.
- Daniel, S., Walsh, A., Goldston, D., Arnold, E., Reboussin, B., & Wood, F. (2006). Suicidality, school dropout and reading problems among adolescents. *Journal of Learning Disabilities*, 39, 507-514.
- Digregorio, K., Farrington, S., and Page, S. (2000). Listening to our students: Understanding the factors that affect Aboriginal and Torres Islander Strait students' academic success. *Higher Education Research and Development*, 19, 297-309.
- Downing, J., & D'Andrea, L. M. (1994). Parental involvement in children's career decision making. *Journal of Employment Counseling*, 3, 115-126.
- Drolet, M. (2005). Participation in post-secondary education in Canada: Has the role of parental income and education changed over the 1990's? Analytical Studies Branch Research Paper Series. Catalogue no. 11F0019MIE – No. 243. Ottawa, ONT: Statistics Canada.
- Dubow, E. F., Arnett, M., Smith, K., & Ippolito, M. (2001). Predictors of future expectations of inner-city children: A 9-month prospective study. *Journal of Early Adolescence*, 21, 5-29.
- Eccles, J., Adler, T., Futterman, R., Goff, S., Kaczala, C., Meece, J., & Midgley, C. (1983). Expectancies, values, and academic behaviours. In J. T. Spence (Ed.), *Achievement and achievement motivation* (pp. 75-146). San Francisco: W.h. Freeman.
- Eccles, J., Wigfield, A., Flanagan, C., Miller, C., Reuman, D., & Yee, D. (1989). Self concepts, domain values, and self-esteem: Relations and changes at early adolescence. *Journal of Personality*, 57, 283-310.
- Eccles, J. S., & Midgley, C. (1989). Stage/environment fit: Developmentally appropriate classrooms for early adolescents. In R. E. Amos & C. Amos (Eds.), *Research on motivation in education*, (pp. 139-186). San Diego, CA: Academic Press.
- Edstom, R. B., Goertz, M. E., Pollack, J. M., & Rock, D. A. (1986). Who drops out of high school and why? Findings from a national study. *Teachers College Record*, 87, 356-373.
- Erikson, E. (1963). *Childhood and Society*. New York: Norton.
- Evans, J., & Burke, H. (1992). The effects of career education interventions on academic achievement. *Journal of Counseling and Development*, 71, 63-68.
- Fleming, C., Woods, C., & Barkin, S. (2006). Career goals in the high risk adolescent. *Clinical Pediatrics*, 45, 757-764.
- Flores, L., Ojeda, L., Gee, D., Lee, S. & Huang, Y. (2006). The relation of acculturation, problem-solving appraisal, and career decision-making self-efficacy to Mexican American high school students' educational goals. *Journal of Counseling Psychology*, 53, 260-266.

- Frenette, M. (2005). *Is post-secondary access more equitable in Canada or in the United States?* (Analytical Studies Branch Research Paper Series). Ottawa, ON: Statistics Canada.
- Frenette, M. (2007). Why are youth from lower-income families less likely to attend university? Evidence from academic abilities, parental influences, and financial constraints. Analytical Studies Branch Research Paper Series #295. Ottawa, Ontario.
- Garnezy, N., & Rutter, M. (1983). *Stress, coping, & development in children*. New York, NY: McGraw Hill Press.
- Germeijs, V., Verschueren, K., & Soenens, B. (2006). High school students' career decision-making process: Consequences for choice implementation in higher education. *Journal of Counseling Psychology*, 53, 397-410.
- Glaser, B. G. (1965). The constant comparative method of qualitative analysis. *Social Problems*, 12, 436-445.
- Gottfried, A. (1985). Academic intrinsic motivation in elementary and junior high school students. *Journal of Educational Psychology*, 77, 631-645.
- Gushue, G., Clarke, C., Pantzer, K., & Scanlan, K. (2006). Self-efficacy, self-perceptions of barriers, vocational identity, and the career exploration behavior of Latino high school students. *Career Development Quarterly*, 54, 307-317.
- Hater, J. J., & Simpson, D. D. (1981). *The PMES information form on family, friends and self: A report on scale construction*. (Techn. Rep N. 81-17). Fort Worth: Texas Christian University, Institute of Behavioural Research.
- Harter, S. (1981). A new self-report scale of intrinsic versus extrinsic orientation in the classroom: Motivational and informational components. *Developmental Psychology*, 17, 300-312.
- Hartung, P. (2002). Cultural context in career theory and practice: Role salience and values. *Career Development Quarterly*, 51, 12-25.
- Hartung, P., Vandiver, B., Leong, F., Pope, M., Niles, S., & Farrow, B. (1998). Appraising cultural identity in career-development assessment and counseling. *Career Development Quarterly*, 46, 276-293.
- Hay, C., Fortson, E. N., Hollist, D. R., Altheimer, I., & Schaible, L. M. (2006). The impact of community disadvantage on the relationship between the family and juvenile crime. *Journal of Research in Crime and Delinquency*, 43, 326-356.
- Hebert, T. (1999). Culturally diverse high-achieving students in an urban high school. *Urban Education*, 34, 428-458.
- Helliwell, J. F., & Putnam, R. D. (1999). Education and Social Capital. NBER Working Paper # 7121, May.
- Howard, S., Dryden, J., & Johnson, B. (1999). Childhood resilience: Review and critique of literature. *Oxford Review of Education*, 25, 307-323.

- Institute of Urban Studies. (2005). *Physical activity and the inner city: The case of West Central Neighbourhood*. Student Paper 22, Institute of Urban Studies II: University of Winnipeg.
- Jacobucci, C. (2005). *A Central Housing Registry: Recommendations for Winnipeg*. Unpublished master's thesis. Winnipeg: University of Winnipeg.
- Jones, V. F., & Jones, L. S. (2001). *Comprehensive Classroom Management*. Needham Heights: Allyn and Bacon.
- Kirby, L. D., & Fraser, M. W. (1997). Risk and resilience in childhood. In M. W. Fraser (Ed.), *Risk and resilience in childhood: An ecological perspective* (pp. 10-23). Washington, DC: NASW Press.
- Knapp, M.S., & Turnbull B.J. (1990). *Better Schooling for Children of Poverty: Alternatives to Conventional Wisdom*. Vol. 1, Summary. Washington, DC: US Department of Education, Office of Planning, Budget and Evaluation.
- Kohen, J., Leventhal, B., Brooks-Gunn, J., & Hertzman, D. (2003). Neighborhood income and physical and social disorder in Canada: Associations with young children's competencies. *Child Development*, 73, 1844-1861.
- Kozol, J. (1997). Reflections on resiliency. *Principal*, 77, 5-6.
- Landry, S., & Tam, K. K. (1998). Understanding the contribution of multiple risk factors on children's development at various ages." (W-98-22E). Ottawa: Human Resources Development Canada.
- Leventhal, B., & Brooks-Gunn, J. (2004). A randomized study of neighborhood effects on low income children's educational outcomes. *Developmental Psychology*, 40, 499-509.
- Lever, N., Sander, M., Lombardo, S., Randall, C., Axelrod, J., Rubenstein, M., & Weist, M. (2004). A drop-out prevention program for high-risk inner-city youth. *Behavior Modification*, 28, 513-527.
- Lleras-Muney, Adriana (2002). The relationship between education and adult mortality in the United States. National Bureau of Economic Research Working Paper # 8986, June, 2002.
- Lohaus, A., Ev-Elban, C., Ball, J., & Klein-Hessling, L. (2004). School transition from elementary to secondary school: Changes in psychological adjustment. *Educational Psychology*, 24, 161-174.
- Lustig, D., & Strauser, D. (2003). The relationship between sense of coherence and career thoughts. *Career Development Quarterly*, 51, 2-11.
- Marsh, H. W. (1989). Age and sex effects in multiple dimensions of self concept: Preadolescence to early adulthood. *Journal of Educational Psychology*, 81, 417-430.
- Masten, A., Best, K., & Garmezy, N. (1990). Resilience and development: contributions from the study of children who overcome adversity. *Development and Psychopathology*, 2, 425-444.

- Maynard, R.A., & McGrath, D. J. (1997). Family structure, fertility and child welfare. In *The social benefits of education*, (Behrman, J. & Nevzer, S. Eds). Ann Arbor: University of Michigan Press.
- McNeal, R. (1999). Parental involvement as social capital: differential effectiveness on science achievement, truancy, and dropping out. *Social Forces*, 78, 117-144.
- National Clearinghouse on Family Violence. (1997). Youth violence—overview paper. Ottawa: National Clearinghouse on Family Violence, Minister of Health.
- Neegan, E. (2005). Excuse me: who are the first peoples of Canada? A historical analysis of Aboriginal education in Canada then and now. *International Journal of Inclusive Education*, 9, 3-15.
- Newswire Canada. 2008.  
<http://www.newswire.ca/en/releases/archive/January2008/15/c9206.html>.  
 Retrieved April 18, 2008.
- Offenberg, R. M. (2004). Inferring adequate yearly progress of schools from student achievement in highly mobile communities. *Journal of Education for Students Placed At-risk*, 9, 337-355.
- Pastorelli, C., Capara, G., Barbaranelli, C., Rola, J., Rozsa, S., & Bandura, A. (2001). The structure of children's perceived self-efficacy: A cross-national study. *European Journal of Psychological Assessment*, 17, 87-97.
- Richman, J., Rosenfeld, L., & Bowen, G. (1998). Social support for adolescents at risk of school failure. *Social Work*, 43, 309-323.
- Robinson, J. P., & Shaver, R. R. (1973). *Measures of Social Psychological Attitudes*. Ann Arbor, Michigan: Institute for Social Research, the University of Michigan.
- Rudolph, D., Lambert, S., Clark, F., & Kurlakowsky, F. (2001). Negotiating the transition to middle school: The role of self-regulatory processes. *Child Development*, 72, 929-947.
- Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, 57, 316-331.
- Rutter, M. (1979). Protective factors in children's responses to stress and disadvantage. In M. W. Kent & J. E. Rolf (Eds.), *Primary prevention in psychopathology: Vol. 3. Social competence in children* (pp. 49-74). Hanover, N.H.: University Press of New England.
- Rutter, M. (1985). Resilience in the face of adversity. Protective factors and resistance to psychiatric disorder. *British Journal of Psychiatry*, 147, 598-611.
- Sameroff, A. J., Seifer, R., & Bartko, W. T. (1997). Environmental perspectives on adaptation during childhood and adolescence. In S. S. Luthar, J. A. Burack, D. Cicchetti and J. Weisz. (Eds.), *Developmental psychopathology: Perspectives on adjustment, risk, and disorder* (pp. 507-526). New York, NY: Cambridge University Press.

- Sandefur, G. D., Meier, A. M., & Campbell, M. E. (2005). Family resources, social capital, and college attendance. *Social Science Research*, 35, 525-553.
- Sharkey, J. & Layzer, C. (2000). Whose definition of success? Identifying factors that affect English language learners' access to academic success and resources. *TESOL Quarterly*, 34, 352-368.
- Silber, E., & Tippett, J. (1965). Self-esteem: Clinical assessment and measurement validation. *Psychological Reports*, 27, 732-734.
- Silver, J. (2000). Persistent poverty in Canada. In J. Silver (Ed.) *Solutions that work: Fighting poverty in Winnipeg* (pp. 1-12). Halifax: Fernwood Publishing.
- Simmons, R. G., & Blyth, D. A. (1987). *Moving into adolescence: The impact of pubertal change and school context*. Hawthorn, NY: Aldine de Gruyter.
- Simmons, R. G., Blyth, D. A., Cleave, E. F. V., & Bush, D. (1979). Entry into early adolescence: The impact of school structure, puberty and early dating on self-esteem. *American Sociological Review*, 44, 948-967.
- Simon, J., Murphy, J., & Smith, S. (2005). Understanding and fostering family resilience. *Family Journal*, 13, 427-436.
- Simpson, D. D., & McBride, A. A. (1992). Family, friends, and self (FFS) assessment scale for Mexican American youth. *Hispanic Journal of Behavioural Sciences*, 14(3), 327-340.
- Social Planning Council of Winnipeg. (2001). A community plan on homelessness and housing in Winnipeg. A report prepared by The Community Partnership for Homelessness and Housing and the Aboriginal Reference Group on Homelessness and Housing. Winnipeg: Social Planning Council of Winnipeg.
- Social Planning Council of Winnipeg. (2003). *Child Poverty Report Card*. Winnipeg: Social Planning Council of Winnipeg.
- Social Planning Council of Winnipeg. (2004). Online Statistics. Social Planning Council of Winnipeg. Available: [http://www.spcw.mb.ca/uploaded/stats\\_05.pdf](http://www.spcw.mb.ca/uploaded/stats_05.pdf) [2004, August 24].
- Statistics Canada. (2004). *In and out of high school: First results from the second cycle of the Youth in Transition Survey 2002*. Ottawa: Statistics Canada. Cat. 81-595-MIE-No. 014.
- Statistics Canada. (2006). *Participation in adult schooling and its earning impact in Canada*. Ottawa: Statistics Canada. Cat. 11FOO19MIE-No. 276.
- Statistics Canada. 2007.  
<http://www12.statcan.ca/english/census01/Products/Analytic/companion/abor/canada.cfm>. Retrieved April 18, 2008.
- Sutherland, D. L., & Levine, K.A. (2004). *Addressing risk factors and building resilience through protective mechanisms in a weekend career exploration program*. Paper presented at the Canadian Association for Studies in Education, Winnipeg, Manitoba.

- Trice, A., & Hughes, A. (1995). The origins of children's career aspirations: IV. Testing hypotheses from four theories. *Career Development Quarterly*, 43, 307-323.
- Trice, A., & King, R. (1991). Stability of kindergarten children's career aspirations. *Psychological Reports*, 68, 1378-1383.
- Tusaie, K., & Dyer, J. (2004). Resilience: A historical review of the construct. *Holistic Nursing Practice*, 3-10.
- UNESCO 2003, *Today, literacy remains a major global challenge*, viewed March, 2008, <<http://portal.unesco.org/education/en>>.
- Usinger, J. (2005). Parent/guardian visualization of career and academic future of seventh graders enrolled in low-achieving schools. *The Career Development Quarterly*, 53, 234-245.
- Valetta, R. (2005). *The ins and outs of poverty in advanced economies: Poverty dynamics in Canada, Germany, Great Britain, and the United States*. Ottawa, ON: Statistics Canada.
- Waller, M. A. (2001). Resilience in an ecosystemic context: Evolution of the concept. *American Journal of Orthopsychiatry*, 71, 290-297.
- Wang, M. (1997). Next steps in inner-city education. Focusing on resilience development and learning success. *Education and Urban Society*, 29(3), 255-276.
- Wang, M. C., Haertel, G. D., & Walberg, H. J. (1997). *Fostering Educational Resilience in Inner-City Schools* (Publication Series No. 4). Washington, DC: Office of Educational Research and Improvement.
- Wang, M. C., Haertel, G. D., & Walberg, H. J. (1998). *Educational resilience* (Publication Series No. 11). Washington, DC: Office of Educational Research and Improvement.
- Wang, M. C., & Kovach, J. A. (1995). *Bridging the achievement gap in urban schools: Reducing educational segregation and advancing resilience – promoting strategies*. (Publication Series #95-9). Paper presented at a Conference of the Urban Education National Network of the Regional Educational Laboratories, Washington, DC.
- Wang, M. C., & Walberg, H. J. (Eds.). (1996). *Strategies for improving education in urban communities. A collection of articles in honor of Edmund W. Gordon and Maynard C. Reynolds*. Washington, DC: Office of Educational Research and Improvement.
- Wigfield, A., Eccles, J., MacIver, D., Reuman, D., & Midgley, C. (1991). Transitions during early adolescence: Changes in children's domain-specific self-perceptions and general self-esteem across the transition to junior high school. *Psychology*, 27, 552-565.
- Whiston, S. C., & Keller, B. K. (2004). The influences of the family of origin on career development: A review and analysis. *The Counseling Psychologist*, 32, 493-568.
- Wilson, W. J. (1987). *The truly disadvantaged: The inner-city, the underclass, and public policy*. Chicago: The University of Chicago Press.

Zajacova, A., Lynch, S., & Espenshade, T. (2005). Self-efficacy, stress, and academic success in college. *Research in Higher Education*, 46, 677-706.

Zimmer-Gembeck, M. J., Chipuer, H. M., Hanisch, M., Creed, P. A., & McGregor, L. (2006). Relationships at school and stage-environment fit as resources for adolescent engagement and achievement. *Journal of Adolescence*, 29, 911-933.

# APPENDIX 1: COMPETENCE SCALES

## Children's Self-Efficacy Scale

These questions are designed to help us get a better understanding of the kinds of things that are difficult for students. Please rate how well you think you can do each of the following things by using a scale of 1-5. 1 means you think you cannot do this at all and 5 means that you think you can do this very well. The answers will be kept confidential.

Rate how well you do these things by recording a number from 1-5.

- 1 – I can't do this at all.
- 2 – I can do this a little bit.
- 3 – I can do this somewhat well.
- 4 – I can do this well.
- 5 – I can do this very well.

<b>Part 1</b>	
<b>How well do you think you can...</b>	
Get teachers to help you when you get stuck on homework	
Get another student to help you when you get stuck on homework	
Get adults to help you when you are in trouble	
Get a friend to help you when you are in trouble	

<b>Part 2</b>	
<b>How well do you think you learn...</b>	
Math	
Science	
Reading, writing, and language	
Computer skills	
French	
Social studies	

**Part 3****How well do you think you...**

Finish your homework assignments on time

Get yourself to study when there are other fun things to do

Always concentrate in school

Take good notes

Use the library for school assignments

Organize your school work

Remember what you have learned in school

Choose a quiet place to study

Get yourself to do school work

**Part 4****How well can you...**

Resist friends who try to get you to do things in school that can get you into trouble.

Stop yourself from skipping school when you feel bored or upset

Resist group pressure to smoke cigarettes

Control your temper

<b>Part 5</b>	
<b>How well can you...</b>	
Live up to what your parents/guardians expect of you	
Live up to what your teachers expect of you	
Live up to what your friends expect of you	
Live up to what you expect of yourself	
Make and keep friends of the opposite sex	
Make and keep friends of the same sex	
Carry on conversations with others	
Work well in a group	

<b>Part 6</b>	
<b>How well do you think you can...</b>	
Express your opinions when other students disagree with you	
Stand up for yourself when you feel you are being treated unfairly	
Get others to stop annoying you	
Stand firm to someone who is asking you to do something you do not want to do	

<b>Part 7</b>	
<b>How well do you think you can...</b>	
Get your parents/guardians to help you with a problem	
Get your brothers and sisters to help you with a problem	
Get your parents/guardians to participate in school activities	
Get people outside the school to take in interest in your school	

**Part 8****How well do you think you can...**

Find information in the library about careers you are interested in	
Identify subjects that are important for a career that you are interested in	
Identify the steps you need to take if you are having trouble in a subject area that is related to a career interest	
Know your own strengths and weaknesses around a career	
Select one career from a list of potential careers you are interested in	
Identify the steps you need to take to successfully reach your career goal	
Determine what your ideal career would be	
Continue to pursue your career goal even when you get frustrated	
Decide what you value most in a career	
Talk with a person already in a career you are interested in	
Choose a career that will fit your interests	
Find out information about college or university requirements for a chosen career	
Identify the steps you need to take to go on to college or university	
Have more than one career goal in case the first one doesn't work out	
Identify places where you could work in your chosen career	

## APPENDIX 2: INTERVIEW QUESTIONS

<b>Family</b>
<b>Describe to me what you think about your child's school.</b> For example, how do you think he or she handles the social situations in school, conflict?
Describe how you think they are doing in school.
What factors do you think are important for your child to remain in school until graduation? In order to pursue university or college?
What do you think are some of the possible roadblocks your child may come across while trying to meet their career goal? What has been your experience with post-secondary? What about other children in the family and their experience with post-secondary?
Describe what you think are some of your child's strengths that may help them succeed in getting to their goal?
So far, what has your experience been like at your child's school? How do you feel about connecting with the teachers, administration?
Describe your ideas about what it means to have a career? Explore both – can you expand....etc.
<b>Any other comments, anything you would like to add that you feel we have not asked.</b>

## Participants and Non-participants

### Describe to me what you think about school.

For example, how do you handle the social situations in school, conflict, how do you feel about yourself as a student, as a friend?

Describe how you think you are doing in school.

Describe your career goal at this time?

What makes you think you want to be a \_\_\_\_\_?

What are you doing to meet this career goal?

What about your extra-curricular activities, hobbies or activities you do outside of school that help you meet your career goal.

What are the educational requirements to meet your career?

What do you think are some of the possible roadblocks you may come across while trying to meet your career goal?

Describe what you think are some of your strengths that may help you succeed in getting to your goal?

What have you done recently that would demonstrate a strength?

What is the role your family has played?

What about your friends?

What about school staff?

So far, what has your experience been like at your school?

How do you feel about asking teachers for help? Asking questions in class?

How do you interact with other students, what is your relationship like?

How are you doing in school?

What do your friends want to be when they grow up?

How would you describe your family's ideas about having a career?

Explore both – can you expand....etc.

**Any other comments, anything you would like to add that you feel we have not asked.**

**Teachers**

**Describe to me what you think about your school.**

The environment, culture community anything you would like to comment on.

Describe to me how you think \_\_\_\_\_ is doing in school.  
Socially and academically.

What factors do you think contribute to a student remaining in school until graduation? In order to pursue university or college?

What do you think are some of the possible roadblocks your students may encounter while trying to meet their career goal?

Describe what you think are some of \_\_\_\_\_ strengths that may help them succeed in getting to their goal?

So far, what has your experience been like with \_\_\_\_\_ family?  
How do you feel about connecting with family?

Describe your ideas about what it means to have a career?  
Explore both – can you expand....etc.

**Any other comments, anything you would like to add that you feel we have not asked.**

## AUTHOR NOTES

### Dawn Sutherland

Dawn Sutherland is an Associate Professor and the Canada Research Chair in Indigenous Science Education at the University of Winnipeg. Aside from her interests in career development, she teaches science education methods and researches the impact of culturally relevant science programs on student self-efficacy. Dr. Sutherland has been involved in developing science programming in First Nations communities for the past 10 years.

### Kathryn Levine

Kathy Levine is an Assistant Professor with the Faculty of Social Work at the University of Manitoba. Her practice and research interests focus on family violence issues, child and adolescent mental health, and the promotion of resilience in at-risk youth. Her current research projects include an examination of the cumulative impact of violence exposure on adolescent girls, exploring factors that promote family involvement in the career development processes for children, and examining the experiences of children of military families who are currently serving in Afghanistan.

### Marilyn Carter

Marilyn Carter is an Aboriginal Student Support teacher with Louis Riel School Division and a Master's Degree candidate at the University of Manitoba. These two roles compliment one another as Marilyn's education centers on Aboriginal career education and student retention and her work entails assisting Aboriginal students in engaging with their education and increasing Aboriginal student retention rates.

### Darrell Cole

Darrell Cole is the creator and current Executive Director of *Career Trek Inc.*, a not-for-profit organization dedicated to providing young people (and their families) with the opportunity to experience the value that gaining a formal education can have to one's life. He has strong commitment to issues focusing around empowerment and social justice.





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