Creating a Lifelong Career Development Model

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Abstract

A limitation of current theoretical knowledge in youth's career exploration is the incomplete research regarding how career exploration needs change developmentally and the impact of career interventions over time. Research has often focused on career-related indicators and/or the outcomes of a particular intervention within one developmental time frame. There has been less attention paid to the developmental characteristics of the intervention, the relationship between the intervention and environmental influences, and the linkages between theoretical constructs, differences in developmental stages, and how these may impact the intervention.

Information on career self-efficacy, interests, and outcome expectancies, and environmental influences was collected from a sample of students spanning grades 5-12. Findings suggest that Grade 7 and 8 students are more engaged in career decision-making than high school students. The impact of a career development intervention (Career Trek Inc) was analyzed and found to have significant positive impacts on career decision-making in Grades 7 and 8.

Over the past number of years, there has been a shift toward a more focused exploration of the theoretical tenets that inform children's career development. Traditional models that described career planning as a static and linear process have shifted toward frameworks that encompass developmental, contextual, and temporal perspectives. Whereas historical models of career development conceptualized the young adult stage as the critical point in which to provide career information, currently there is much greater recognition of the relevance and complexity of career exploration processes in childhood (Howard, Flanagan, Castine, & Walsh, 2015). It is at this time that children undertake major cognitive, behavioural, and emotional developments with a view toward achieving greater independence, and there have been significant gains in identifying the factors that influence children's decision-making processes. Consequently, there is greater demand for a more comprehensive understanding of how career interests and vocational identities are formed, develop, and change during this stage (Gysbers, 1996; Schultheiss, Palma, & Manzi, 2005).

The social and economic burden of unfulfilled potential is not equitably distributed: Although many youth have access to educational, family, informational, financial, and social support that can facilitate effective career exploration, other children are not as fortunate. Children from low-income families, children of parents with little or no post-secondary education, children from families that do not value post-secondary education, and Indigenous children have considerably less access to this type of assistance (Council of Ministers of Education, 2015; Helme, 2010).

Early intervention programs are based on the position that targeted services can compensate children who are considered vulnerable to poor outcomes later in life, based on a variety of factors. Engaging children and their families in structured experiences that are perceived to meet the identified risk, at a developmental stage when there is significant potential for change, can have a positive impact. At the child level, these programs can address a range of dimensions including school readiness skills that can facilitate long-term school, career, and economic success. For parents, having their child participate in an early intervention career exploration program provides the

opportunity to identify key discussion topics that can reinforce the program model, and facilitate their child's career exploration in the "real world." Improving the career development prospects for at-risk youth has significant implications for their personal and familial well- being, as post-secondary education remains a key protective factor against living in poverty. More broadly, the political, social, and economic contexts of society will benefit from the inclusion of marginalized youth into the mainstream employment sector.

This study explored children's career exploration within a conceptual framework that integrates developmental models (Super, 1953) and contextual factors of family, peer, and school relationships. Our intent was to develop a broader understanding of the relationships between grade level and developmental indicators of career exploration. Specific objectives include examining: a) career as a developmental process over the Growth and Exploration stages (Super, 1990); and b) the impact of a career awareness program, Career Trek, on the developmental trajectory of Grade 6 children's career exploration. Our research hypotheses were:

1. Students in senior years (Grades 9-12) would exhibit higher career exploration behaviours than students in middle years (Grades 7-8) and elementary years (Grades 5-6).
2. Perceived career–related parental involvement would increase as children progressed in grades, as youth in high school are approaching graduation, and engaging in a process of active career exploration in preparation for next steps.
3. Children who participated in a career exploration program would score higher on indicators of career decision-making indicators compared to a group that did not.

Life Span, Life Space Theory

Our conceptual framework was drawn from the Life Span, Life Space theory of careers (Super, 1990; Super, Osborne, Walsh, Brown, & Niles, 1992). According to Hartung (2013), this theory combines three areas of psychological research: differential psychology, developmental psychology, and self-concept theory. By combining these three areas, Super created a model that focuses on work value traits and how individuals develop ideas about who they are in different roles and situations and how they cultivate a career over time. Beginning in childhood and extending throughout the lifespan, individuals progress through comprehensive ways of making sense of themselves and their educational and career experiences. Super's (1980) major contribution is in his description of career exploration as a developmental process characterized by change and adaptation. The model emphasizes how career exploration and decision-making are ongoing processes, and evolve over time in response to changing factors within individuals' immediate environments and different social contexts.

His model consists of nine dimensions thought to contribute to career development: curiosity, exploration, information, key figures, interests, locus of control, time perspective, self-concept, and planfulness (Schultheiss, Palma, & Manzi, 2005). These dimensions unfold throughout five life stages: Growth (Birth-14), Exploration (15-24), Establishment (25-44), Maintenance (45-64), and Disengagement (65+). Each stage is characterized by sub-stages that include socially and culturally determined responsibilities that individuals must meet with regard to developing a career (Super et al., 1992).

Two stages in Super's model encompass the elementary, middle, and high school years. The Growth stage spans birth to age 14, which corresponds with the end of the middle school years in Canada (Hartung, Porfeli, & Vondrecek, 2005). The key task is for children to develop their self-concept by actively constructing ways of making sense of themselves and the world, primarily through their interactions with adults, as well as an understanding of their attitudes toward education and the general world of work. This initial period includes forming a preliminary but realistic vocational self-concept. Other tasks include developing concern for their future, control over their

decision-making, conviction to succeed, and competence in work habits and attitudes (Savickas & Super, 1993).

Growth gives way to Exploration, which spans the ages of 15 to 24. Key developmental tasks include enhancing intrinsic motivation; acquiring a sense of competence; cultivating strong interpersonal and citizenship skills; and recognizing the importance of a future orientation. Although Super's theory does not specifically address issues related to diversity, the social context of the 21st century has changed, and career development theories must incorporate these considerations. Therefore, we would add that understanding career development in a social context that integrates cultural, racial, ethnic, and gender diversity is an integral component of the Exploration stage.

Career-related tasks focus on the examination and consideration of different careers prior to committing to a particular direction through crystallizing, specifying, and implementing the vocational self-concept in an occupational role (Arnett, 2004). Given the premise that as children develop into adolescents and young adults and move from a growth to an exploration stage in their career awareness, the influence of the nine dimensions on career development may change. As children consolidate their ideas about careers, the need to obtain further information or test out different possibilities becomes less important, and the shift toward implementing plans takes priority. The rationale for our approach to comparing career exploration knowledge at different ages and grades is to expand our understanding of children's career development by shifting from a focus at a particular stage to discerning transitions within a temporal context.

Contextual Factors

Career exploration in children and adolescents must be conceptualized within the social contexts that consist of family, peer, and school relationships. Research has consistently revealed that parental supports, peer relationships, and school factors such as academic engagement, teacher relationships and support, and sense of school belonging affect career development through a number of pathways.

Beginning in the 1960s, a substantive body of research resulted in the unequivocal conclusion that parental and family factors are the key predictors of young adults' career choices (Whiston & Keller, 2004). Parental influence is manifest via a wide range of family process variables including: attachment relationships, parental authority, parent-child communication, child-centred parenting, affective expression, and academic expectations (Dietrich, Kracke, & Nurmi, 2011; Germeijs & Verschueren, 2009; Ketterson & Blustein, 1997; Kracke, 2002; Schultheiss & Blustein, 1994; Schultheiss, Kress, Manzi, & Glasscock, 2001).

Parental involvement in children's career exploration and decision-making may be described in the domains of attitudes, actions, behaviours, and responses. Each of these suggests one of three dimensions: positive involvement, negative involvement, and non-involvement. Positive involvement includes both relational support factors (emotional connectedness and parental warmth), as well as instrumental support factors (encouraging children to explore their career choices, discussing career aspirations, and providing advice and information). For example, Lease & Dahlbeck (2009) found that secure parental attachment predicted career decision making self-efficacy. Negative involvement refers to active interference such as empathy failures, criticism of career choices, or coercing children to pursue particular careers (Middleton & Loughead, 1993). Non-involvement describes the absence of parental engagement and is expressed by parents' refusal to initiate or engage in discussions with children about career interests, the absence of understanding regarding children's desires to explore particular careers, and the belief that parental involvement may be detrimental to children's career exploration (Dietrich & Kracke, 2009; Douglas & Guttman, 2000; Hoffman, Hofacker, & Goldsmith, 1992; Levine & Sutherland, 2013; Middleton & Loughead, 1993). Peer relationships provide similar contributions to adolescents' career exploration including attachment

and emotional connections (Felsman & Blustein, 1999) as well as critical course and college-related information (Kracke, 2002). Having a friend whose parents are college educated can expose adolescents whose parents did not attend college, to essential information that can facilitate post-secondary entrance (Crosnoe & Muller, 2014).

School connectedness or sense of belonging, which may be defined as students' positive perceptions of teachers, principals, courses, and the school itself, has received less attention in the career exploration research literature. There is, however, research that supports a positive relationship between school connectedness and future orientation (Crespo, Jose, Kielpikowski, & Pryo, 2013), a key consideration in the temporal context of Super's Life-Space theory.

Career Interventions

There has been increased interest on the part of educators, academics, labour market specialists, and federal/provincial policy analysts in career intervention models for youth. This is based on the premise that if students are able to learn and understand the connections between school and future work or career outcomes, they will become more academically engaged and therefore more likely to graduate (Medvide & Blustein, 2010). Career interventions for youth operate at the individual, school, and community levels and are intended to address career exploration needs at the developmental, preventive, or remedial stages. At a school level, there are both required and elective career development courses offered in different grades. Community-based programs include events such as Career Days that bring together high school students, post-secondary institutions, and employers to showcase the range of career possibilities along with the educational pathways to those careers. Online career interventions use interactive methods such as multimedia video, content slides, and information modules along with discussion groups and counselling exchanges in which students can explore possible careers (Nota, Santilli, & Soresi, 2016). In addition to general programs, there are career intervention models that have been designed to instill interest in particular disciplines and to address the needs of particular populations. The information technology demands of the 21st century have generated multiple programs to expose youth to the Science, Technology, Engineering, and Math (STEM) subject areas (Byars-Winston, 2014) and domain-specific programs focused on health sciences and related fields (Ali, Brown, & Loh, 2017). There are also career interventions developed for marginalized populations who may require additional support including minority youth (Jackson et al., 2011; Turner & Conkel, 2010), young mothers (Prescod & Daire, 2013) and youth with disabilities (Chen & Chan, 2014; Sheftel, Lindstrom, & McWhirter, 2014).

The Career Trek Program

In contrast to career courses that typically begin in high school, Career Trek is an early intervention, social inclusion initiative targeted toward students who, due to social, economic, or family structure disadvantages, may not successfully transition to post-secondary education after graduation. Its mandate is to increase students' and families' knowledge about potential careers that are accessible through post-secondary education by: a) using an integrated approach to experiential career exposure; b) providing information about post-secondary educational institutions; and c) encouraging parental involvement in children's career decision-making choices.

Each year, over 240 children in grades 5 and 6, who appear to require additional academic and/or social supports, are identified by educators as candidates for the Career Trek program. Program criteria include low socioeconomic status, parents or siblings who have not completed high school, minority or immigrant status, single-parent family, and absence of involvement in extra-curricular activities. In Winnipeg, the program operates on 20 Saturdays beginning in October and ending in April with the program's graduation ceremony. Students are transported from several pick-up locations throughout the city, and taken to one of the four participating urban post-secondary educational institutions: the Univer-

sity of Winnipeg, the University of Manitoba, Red River College, and the Manitoba Institute of Trades and Technology. All participants rotate through 5 weeks of programming at each institution. The program curriculum is designed to expose students to the wide variety of careers that are accessible via post-secondary education, as well as a broad range of careers within each discipline/subject. For example, a major in Economics may lead to careers in policy analysis, managing a non-profit enterprise, or serve as a pre-requisite to a business degree. Participating faculties/departments range from Engineering, Nursing, Native Studies, and Education to Graphic Design, Culinary Arts, Creative Communications, and Building Construction. Current post-secondary students from the various departments act as instructors for the sessions. As part of the experiential component, participants learn the long-term connections between their current Grade 5 and 6 subjects and each career. For example, math concepts have greater relevance when they are used to determine the amount of medication a patient requires, or how to ensure that the walls of a dog house are of equal size.

Methodology

Participants

1493 students from grades 5-12 from four school divisions in Winnipeg, Manitoba, Canada participated. Participants were grouped into early years (Grades 5-6), middle years (Grades 7-8), and senior years (Grades 9-12).

Students in these divisions represent the full range of cultural, ethnic, religious, gender, family composition, and socio-economic diversity that exists in Winnipeg (Statistics Canada, 2015). In order to solicit as large a sample as possible, data on demographic factors were not collected as research has often resulted in negative portrayals of individual groups in the absence of a contextual analysis (Morton & Pollock, 2017).

Procedures

Ethical approval was obtained from the University of Winnipeg and the University of Manitoba, as well as from each of the participating school divisions. The school divisions had long established partnerships with Career Trek so were receptive to supporting the project. Individual school recruitment was facilitated by school superintendents.

Research assistants (RAs) contacted the school administration and arranged times to meet with the students. Parental consent was obtained for all participants. All data were collected within a two-month time frame (January – February). Working in pairs, RAs visited each school twice. The first visit was to share information about the study and distribute parental consent forms. They then returned to the school approximately two – three days later to administer the measures to the students. Data were entered into SPSS 20.

Measures

Given the age range of participants, study measures were selected based upon their reliability with younger students. The following three data collection instruments were used:
Childhood Career Development Scale (CCDS) (Schultheiss & Stead, 2004): The CCDS (Schultheiss & Stead, 2004) was designed to assess children's career development across the nine proposed dimensions of Super's (1990) developmental theory. The scale contains eight subscales (a) information (an awareness of the importance or use of occupational information and how one acquires this information); (b) curiosity/exploration (a need leading to inquisitive behaviour and activities such as searching or examining that elicit information about oneself or one's environment in an attempt to meet curiosity needs); (c) interests (an awareness of one's likes and dislikes); (d) locus of control (the degree to which one feels an internal sense of control over one's present and future); (e) key figures (role models or interesting or helpful people who have played a meaningful role in individuals' lives); (f) time perspective (an awareness of how the past, present, and future can be employed to plan future events); (g) planfulness (an awareness of the importance of planning); and (h) self-concept (an awareness of dimensions of

the self in some role, situation, or position; performing some set of functions; or in some web of relationships). The 52 items are rated on a Likert-type scale ranging from Strongly Agree to Strongly Disagree.

Family, Friends, and School Climate (Texas Christian University, 1998): The FFS is used to assess the psychosocial functioning of children within the domains of family, peers, and school settings. It is comprised of three subscales: the Family Relation scale (22 items) that assesses the factors of parental warmth, control, and conflict; the Peer Activity scale (23 items), that assesses the dimensions of peer activities, peers in trouble; peers' familiarity with parents; and peers' conventional involvement, and a Self scale (15 items) that measures the psychological dimensions of self-esteem, environment, and school satisfaction.

Parental/Guardian Involvement Checklist (Keller & Whiston, 2008): Perceived parental/guardian involvement was assessed using a 53 item composite measure adapted from the Career Behaviour Checklist (Keller & Whiston, 2008) that assesses parental behaviours that are predictive of children's career decision making self-efficacy and career maturity. The first subscale, Career Support, includes 13 items that target parental, social and emotional support related to career exploration. The second subscale, Career Action, consists of 39 items that assess specific, career oriented actions and behaviour undertaken by parents/caregivers in relation to their child's career exploration. Participants respond to each item using a 5-point Likert-type scale (1 = Never to 5 = Often) that describes their perceptions of the extent to which their parent/caregiver engages in these activities.

Results

Grade Related Differences in Career Development

Our first objective was to explore how children's career development knowledge changes from the early to middle, and middle to high school years when they have not experienced a career development intervention. To meet this objective, grade related differences were explored by excluding all respondents who identified as having participated in any Career Development Program. Individuals from grades 3 and 4 (6 individuals) and individuals where grade was unknown (42 individuals) were removed from the analysis.

Childhood Career Development Scale

ANOVAs were done to test for grade differences on the subscales of the CCDS (Table 1). The higher the score the more participants agreed with the statements. Post hoc Bonferroni tests were conducted to determine the significance of the group differences. Grade levels significantly differed in two of the nine subscales. The Information subscale was significant for different grade groups $F(2, 1302) = 3.01$, $p < 0.05$, as grades 5-6 ($M = 2.16$, $SD = .86$) and 7-8 ($M = 2.16$, $SD = .86$) students wanted more information than high school students ($M = 1.98$, $SD = .77$). Mean differences between grades 9-12 and 5-6 were significant using Bonferroni post hoc tests, $p < 0.04$. The Locus of Control subscale was significant for different grade groups $F(2, 1299) = 3.18$, $p < 0.04$, as grades 5-6 ($M = 1.88$, $SD = .97$) and 7-8 ($M = 1.81$, $SD = 1.04$) students felt they had more personal control over how well they do and their relationships than high school students ($M = 1.68$, $SD = .73$). Mean differences between grades 9-12 and 5-6 were significant using Bonferroni post hoc tests, $p < 0.04$. No differences were found for the curiosity/exploration, interests, key figures, planfulness, and self-concept subscales.

Family, Friends and School Climate (TCU/PMES)

ANOVAs were done to test for grade differences on the subscales of the TCU/PMES Scales on Family, Friends and Self. For the family subscale, higher scores indicated more of the reported behaviours or events.

Family Relation Subscale: The parental warmth subscale was significantly different for different grade groups $F(2, 1287) = 41.88$, $p < 0.00$. High school students reported less parental warmth ($M = 2.70$, $SD = .80$) than either the elemen-

Table 1.

Distribution of the student respondents by grade.

GRADE	*N*=1493
3-6	6
5-6	854
7-8	422
9-12	217

tary (M = 3.21, SD =.64) or the middle school (M = 3.18, SD =.71) students. Mean differences between grades 9-12 and 5-6 and grades 9-12 and 7-8 were significant using the Bonferroni post hoc test, p <0.00.

The parental control subscale was significantly different for different grade groups F(2, 1287) = 3.51, p < 0.03. High school students reported less parental control within their family (M = 2.81, SD =.58) than did either the elementary (M = 2.89, SD =,57) or middle school students (M = 2.94, SD =.49). Mean differences between grades 9-12 and 7-8 were significant using the Bonferroni post hoc test, p <0.03.

The conflict subscale was significantly different for different grade groups F(2, 1441) =7.08, p <0.00. High school students reported more conflict within their family (M = 1.50, SD =.84) than did either the elementary (M = 1.27, SD =.90) or middle school students (M = 1.20, SD=.84). Mean differences between grades 9-12 and 5-6 and grades 9-12 and 7-8 were significant using the Bonferroni post hoc test, p <0.00.

Peer Activity Scale: For the friends section of this measure higher responses indicated more of the reported behaviour or events. The subscale on the number of friends getting into trouble was significantly different for different grade groups F(2, 1267) =15.04, p <0.00. High schools students reported more of their friends getting into trouble (M = 0.53, SD =.56) than either the elementary school students (M=0.31, SD =.51) or the middle school students (M= 0.31, SD =.46). Mean differences between grades 9-12 and 5-6 and grades 9-12 and 7-8 were significant using the Bonferroni post hoc test, p <0.00.

The subscale on friends familiarity with parents was significantly different for different grade groups F(2, 1271) =14.24, p <.000. Both middle school (M = 2.95, SD =.83) and high school (M = 2.80, SD =.85) students reported that their friends were less familiar with their parents than did elementary school students (M = 3.13, SD =.78). Mean differences between grades 5-6 and 9-12 and grades 7-8 and 9-12 were significant using the Bonferroni post hoc test, p <0.00.

The conventional involvement subscale was significantly different for different grade groups F(2, 1270) = 26.32, p <0.00. High school students (M = 2.14, SD =) reported that their friends had less conventional activity involvement than did elementary (M = 2.50, SD =.58) or middle school students (M= 2.49, SD =.59). Mean differences between grades 9-12 and 5-6 and grades 9-12 and 7-8 were significant using the Bonferroni post hoc test, p <0.00. There were no differences on the peer activity level subscale.

Self Scale: For the "Self" section of this measure, higher scores indicated greater happiness with aspects of the student's life. The self-esteem subscale was significantly different for the different grade groups F(2, 1283) = 12.46, p <0.00. High school students had the lowest self-esteem scores (M = 2.79, SD =.79) and this was lower than the elementary school students' self-esteem (M = 3.09, SD =.70) and the middle school students' self-esteem (M = 3.04, SD =.73). Bonferroni post hoc tests showed that the mean difference between the grade 9-12 grade group and the 5-6 grade group was significant and the 9-12 grade group and the 7-8 grade group was significant, p <0.00.

The family environment subscale was significantly differ-

Table 2:

Comparing responses to the Childhood Career Development Scale, TCU/PMES Scale and parent/Guardian Involvement Scale in the different Grade levels of youth who have not participated in any career development programming.

Measures	Grades 5 & 6		Grades 7 & 8		Grades 9-12				
	Mean	SD	Mean	SD	Mean	SD	F	df	P<
Childhood Career Development Scale									
Information	2.16	0.86	2.13	0.86	1.98	0.77	3.01	2,1302	.05
Curiosity/Exploration	2.45	0.79	2.45	0.74	2.55	0.63	1.49	2,1303	.23
Interests	1.62	0.99	1.70	1.03	1.68	0.72	.873	2,1302	.42
Locus of Control	1.88	0.97	1.81	1.04	1.68	0.73	3.18	2,1299	.04
Key Figures	2.70	0.86	2.69	0.82	2.77	0.69	.508	2,1307	.60
Time Perspective	2.02	0.99	2.00	0.99	1.89	0.95	1.17	2,1295	.31
Planfulness	1.86	0.95	1.93	0.97	1.95	0.80	1.05	2,1295	.35
Self-Concept	1.83	0.96	1.90	0.99	1.85	0.76	.605	2,1291	.55
TCU/PMES Scales									
Family									
Warmth	3.21	0.64	3.18	0.71	2.70	0.80	41.90	2,1287	.00
Control	2.89	0.57	2.94	0.49	2.81	0.58	3.51	2,1285	.03
Conflict	1.27	0.90	1.20	0.84	1.50	0.84	7.08	2,1280	.00
Friends									
Peer Activity Level	2.59	0.84	2.48	0.87	2.59	0.79	2.20	2,1286	.11
Trouble	.31	0.51	0.31	0.46	0.53	0.56	15.04	2,1267	.00
Familiarity with Parents	3.13	0.78	2.95	0.83	2.80	0.85	14.24	2,1271	.00
Conventional Involvement	2.50	0.64	2.49	0.59	2.14	0.58	26.32	2,1270	.00
Self									
Self-Esteem	3.09	0.70	3.04	0.73	2.79	0.79	12.46	2,1283	.00
Environment	3.60	0.53	3.53	0.56	3.11	0.73	50.96	2,1268	.00
School Satisfaction	3.33	0.69	3.18	0.66	2.78	0.66	47.97	2,1268	.00
Parent Involvement									
Parent Support	3.98	0.67	4.07	0.66	3.78	0.68	11.48	2,1310	.00
Parent Action	2.67	0.72	2.83	0.73	2.64	0.65	7.11	2,1298	.00

ent for the different grade groups $F(2, 11268) = 50.96$, $p < 0.00$. High school students were the least happy with their family environment ($M = 3.11$, $SD = .73$), followed by middle school students ($M = 3.53$, $SD = .56$) and elementary school students ($M = 3.60$, $SD = .53$). Bonferroni post hoc tests showed that the mean differences between the 5-6 grade group and the 9-12 grade group was significant, $p < 0.00$; and the difference between the 7-8 grade group and the 9-12 grade group was significant, $p < 0.00$.

The school satisfaction subscale was significantly different for the different grade groups, $F(2,1268) = 47.97$, $p < 0.00$. High school students had the least amount of school satisfaction ($M = 2.78$, $SD = .66$) followed by middle school students ($M = 3.18$, $SD = .66$) and elementary school students ($M = 3.33$, $SD = .69$). Bonferroni post hoc tests showed that the mean difference between the 5-6 and the 9-12 grade groups was significant, $p < 0.00$; and the mean difference between grade group 7-8 was significantly different that the 9-12 grade group, $p < 0.00$.

Parent Guardian Involvement Checklist

The Parent/Guardian Involvement Checklist is divided into two subscales. Participants respond to each item using a 5-point Likert-type scale with higher scores indicating greater perceived parental/guardian career support or action. Career Support: Parent/guardian

career support significantly differed between the grade groups F(2, 1310) = 11.48, p <0.00. Middle school students perceived they had the greatest amount of parent/guardian career support (M = 4.07, SD =.68) followed by elementary students (M = 3.98, SD =.67) and high school students (M = 3.78, SD =.68). Bonferroni post hoc tests showed that the mean difference between the 5-6 and the 9-12 grade groups was significant, p <0.00; and the mean difference between grade group 7-8 was significantly different than the 9-12 grade group, p <0.00.

Career Action: Parent/guardian career action significantly differed between the grade groups F(2, 1298) = 7.11, p <0.00. Middle school students perceived they had the greatest amount of parent/guardian career action (M = 2.83, SD =.73), followed by elementary students (M = 2.67, SD =.72) and then high school students (M = 2.64, SD =.65). Bonferroni post hoc tests showed that the mean difference between the 5-6 and the 7-8 grade groups was significant, p <0.00; and the mean difference between grade group 7-8 was significantly different than the 9-12 grade group, p <0.00.

Comparisons between Participants in a Career Development Intervention Program and Non-Participants

Our third objective was to explore the level of career development in middle school students who participated in a career development intervention compared with those who did not. This comparison was done by examining the career development levels of Career Trek participants that were currently attending the program with a comparable group of non-Career Trek participants (randomly selected from the Grade 5-6 respondents). In the Grade 5-6 Career Trek group participants had a maximum of four days of programming before completing a questionnaire

A further analysis examined the impact of Career Trek on students one year after participation with students who did not participate in a career development program (Table 3).

Comparison One Month into Programming

Childhood Career Development Scale: ANOVA results indicated that there were no program group differences in any of the subscales of the CCDS (Table 4).

TCU/PMES Scales on Family, Friends and Self: ANOVA results indicated that there were not program group differences in any of the subscales of the TCU/PMES scales. Parent/Guardian Involvement: Parental career support differed between the Career Trek and No Program Grade 5-6 participants. Parents/Guardians of Career Trek participants (M = 4.18, SD =.56) were more supportive than parents/guardians of non-participants (M = 3.81, SD =.71), F(1, 88) = 6.91, p <0.01. Parent/guardians career actions differed between the Career Trek and No Program Grade 5-6 participants as well. Parents/Guardians of Career Trek participants (M=3.01, SD =.64) were more active in their child's career development than parents/guardians of non-participants (M = 2.54, SD =.74), F(1,88) = 10.15, p < 0.00.

Career Intervention Comparison One Year Later

Childhood Career Development Scale: ANOVA results indicated that there were program group differences on the following subscales of the Childhood Career Development Scale (Table 5): a) Curiosity F(1,76) = 5.06, p < 0.03. The Career Trek Program (M = 2.62, SD =.84) students were more curious about things they learned in school than the No Program Group (M = 2.25, SD =.55); b) Interests F(1, 76) = 7.12, p < 0.01. The Career Trek Program (M = 1.94, SD =1.28) students were more aware of their interests in school than the No Program Group (M = 1.37, SD =.43); c) Locus of Control F(1, 76) = 4.56, p < 0.04. The Career Trek Program (M = 2.10, SD =1.26) students felt they had more control over their activities and school-related behaviours than did the No Program Group (M = 1.61, SD =.68); d) Planning F(1, 76) = 5.30, p < 0.02. The Career Trek Program (M = 2.14, SD =1.26) students felt that planning for the future was more im-

Table 3.

Post Hoc Bonferroni Tests to the Childhood Career Development Scale, TCU/PMES Scale and Parent/Guardian Involvement Scale in the different Grade levels of the No Career Development Program Group.

Scale	Grades 5-6 & 7-8 P<	Grades 5-6 & 9-12 P<	Grade 7-8 & 9-12 P<
Childhood Career Development Scale			
Information	1.00	0.04	0.18
Curiosity/Exploration	1.00	0.30	0.37
Interests	0.64	1.00	1.00
Locus of Control	0.75	0.04	0.44
Key Figures	1.00	1.00	1.00
Time Perspective	1.00	0.38	0.71
Planning	0.72	0.79	1.00
Self-Concept	0.82	1.00	1.00
TCU/PMES Scales			
Warmth	1.00	0.00	0.00
Control	0.45	0.23	0.03
Conflict	0.80	0.00	0.00
Peer Activity Level	0.13	1.00	0.50
Trouble	1.00	0.00	0.00
Familiarity with Parents	0.00	0.00	0.11
Conventional Involvement	1.00	0.00	0.00
Self-Esteem	0.73	0.00	0.00
Environment	0.17	0.00	0.00
School Satisfaction	0.00	0.00	0.00
Parent Involvement			
Parent Career Support	0.08	0.00	0.00
Parent Career Action	0.00	1.00	0.01

portant than did the No Program Group (M = 1.62, SD =.63); e) Self Concept F(1, 76) = 7.29, p < 0.01. The Career Trek Program (M = 2.16, SD =1.16) students had a clearer self-concept than did the No Program Group (M = 1.60, SD =.57).

TCU/PMES Scales on Family, Friends and Self: ANOVA results indicated that there were program group differences on the following subscales of the TCU/PMES (Table 5).

Family Relation Subscale: The two groups differed in the conflict items in the family relations subscale F(1, 76) = 5.32, p <0.02. The No Program Group (M = 1.11, SD =.87) had less conflict in their family than the Career Trek Group (M = 1.58, SD =.94). The two groups did not significantly differ in parental warmth or control.

Peer Activity Subscale: The two groups differed in the peer trouble items in the peer activity subscale F(1, 76) = 7.78, p < 0.01. The Career Trek Group (M = 0.62, SD =.72) had friends who were more often in trouble than did the No Program Group (M = 0.25, SD =.40). As well the two groups differed in the conventional involvement items F(1, 76) = 4.66, p < 0.03. The Career Trek Group (M = 2.32, SD =.58) had friends who engaged in less conventional activities than did the No Program Group (M = 2.60, SD =.57). The two groups did not significantly differ in the familiarity with parents items in

the peer activity subscale.

Self Subscale: The two groups differed in the school satisfaction items in the self subscale $F(1, 76) = 4.17$, $p < 0.05$. The Career Trek Group ($M = 2.99$, $SD = .80$) reported less school satisfaction than did the No Program Group ($M = 3.32$, $SD = .63$). The two groups did not significantly differ in the self-esteem or environment items in this subscale.

Parental Involvement

No significant differences between Career Trek participants and non-participants were found in the two parental involvement subscales (Table 4).

Discussion

Children's Career Development

Using data from children in grades 5 – 12, we provide a more reliable perspective of children's career exploration processes as they progress in school. Not surprisingly, the findings from this study confirm that children's career exploration processes change as they transition from elementary grade levels to senior years. What was interesting is the direction of these changes. Findings suggest that children in grades 5/6 demonstrate the highest levels of career interest, planning, and curiosity with

Table 4

Comparing the responses of Grade 5-6 Career Trek participants with a comparable No Career Development Program Group in the TCU/PMES Scales and Parent/Guardian Support Scale

Measures	Career Trek Group		No Program Group				
	Mean	SD	Mean	SD	F	df	p<
Childhood Career Development Scale							
Information	1.91	0.87	2.16	0.94	1.73	1,88	0.19
Curiosity/Exploration	2.25	0.87	2.47	0.89	1.43	1,88	0.24
Interests	1.62	1.17	1.52	0.82	0.23	1,88	0.63
Locus of Control	1.85	1.06	1.94	0.87	0.20	1,87	0.66
Key Figures	2.27	1.00	2.08	0.85	0.90	1,86	0.35
Time Perspective	1.90	1.06	2.01	0.99	0.25	1,86	0.62
Planning	1.75	0.98	1.86	0.78	0.32	1,86	0.57
Self-Concept	1.82	1.03	1.84	0.77	0.01	1,86	0.92
TCU/PMES Scales							
Family							
Warmth	3.30	0.59	3.17	0.59	1.24	1,85	0.27
Control	2.98	0.54	2.91	0.60	0.30	1,85	0.58
Conflict	1.49	0.79	1.38	0.99	0.33	1,84	0.57
Friends							
Peer Activity Level	2.62	0.84	2.74	0.99	0.36	1,85	0.55
Trouble	0.40	0.52	0.21	0.41	3.57	1,84	0.06
Familiarity with Parents	3.14	0.63	3.13	0.73	0.00	1,84	0.95
Conventional Involvement	2.58	0.56	2.54	0.57	0.14	1,84	0.71
Self							
Self-Esteem	3.23	0.59	3.09	0.86	0.86	1,85	0.36
Environment	3.64	0.41	3.56	0.50	0.62	1,84	0.43
School Satisfaction	3.49	0.52	3.31	0.66	2.15	1,84	0.15
Parental Involvement							
Parent Career Support	4.18	0.56	3.81	0.71	6.91	1,88	0.01
Parent Career Action	3.01	0.64	2.54	0.74	10.15	1,88	0.00

Table 5.

Comparing the responses of Grade 7-8 Career Trek participants with a comparable No Career Development Program Group in the TCU/PMES Scales and Parent/Guardian Support Scale

Measures	Career Trek Group		No Program Group				
	Mean	SD	Mean	SD	F	df	p<
Childhood Career Development Scale							
Information	2.21	1.08	1.82	0.66	3.80	1,76	0.06
Curiosity/Exploration	2.62	0.84	2.25	0.55	5.06	1,76	0.03
Interests	1.94	1.28	1.37	0.43	7.12	1,76	0.01
Locus of Control	2.10	1.26	1.61	0.68	4.56	1,76	0.04
Key Figures	2.36	0.93	2.07	0.56	2.80	1,76	0.10
Time Perspective	2.10	1.20	1.81	0.79	1.67	1,76	0.20
Planfulness	2.14	1.26	1.62	0.63	5.30	1,76	0.02
Self-Concept	2.16	1.16	1.60	0.57	7.29	1,76	0.01
TCU/PMES Scales							
Family							
Warmth	2.84	0.78	3.10	0.81	2.15	1,76	0.15
Control	2.93	0.48	3.02	0.53	0.67	1,76	0.41
Conflict	1.58	0.94	1.11	0.87	5.32	1,75	0.02
Friends							
Peer Activity Level	2.61	0.84	2.41	0.78	1.10	1,76	0.30
Trouble	0.62	0.72	0.25	0.40	7.78	1,76	0.01
Familiarity with Parents	2.97	0.73	3.02	0.76	0.09	1,76	0.76
Conventional Involvement	2.32	0.58	2.60	0.57	4.66	1,76	0.03
Self							
Self-Esteem	2.85	0.78	3.02	0.76	0.87	1,76	0.35
Environment	3.26	0.69	3.41	0.75	0.89	1,76	0.35
School Satisfaction	2.99	0.80	3.32	0.63	4.17	1,76	0.05
Parent Involvement							
Parent Career Support	3.93	0.72	4.10	0.68	1.09	1.76	0.30
Parent Career Action	2.89	0.64	2.93	0.69	0.05	1,76	0.83

statistically significant decreases when compared to children in middle and senior years.

Career interest, planning and curiosity are all critical in career exploration. Super (1990) noted that curiosity is a basic need for children "exploring possible selves and future scenarios" (p. 47). Children manifest curiosity through exploration, experimentation, risk-taking, and inquiring (Savickas, 2005), and findings suggest that the earlier the grade, the greater the career-related curiosity. The "drop off" in these skills between Grade 6 and middle school years may limit exploration, resulting in unrealistic aspirations and expectations about the future (Hartung, Porfeli, & Vondracek, 2005). Children will typically choose to explore careers that they associate with their interests. Tracey (2002) provided evidence that career interests change over time, becoming more stable from elementary to middle school. Our research shows that students' perceptions of their interests do not differ between elementary and high school levels. Students who have some degree of awareness of the need to approach career exploration in an organized manner, either by having a clearly-defined goal that they can describe a strategy for attaining, or who

have an awareness of multiple career options along with some kind of plan to work toward these, will be more effective in their career decision-making.

For many youth, high school graduation signifies a shift to another stage of life, one in which career decisions are more immediately relevant. Career-related curricula is generally introduced at the senior grade levels, at the time when adolescents are choosing high school course levels and electives that may or may not facilitate entry into post-secondary education (Dietsche, 2012). From this, it may be reasonably expected that students in the senior years are more likely to report higher levels of career exploration activities. However, findings from this study indicated that career exploration decreases from elementary to high school years. There are a number of possible explanations for this change. It may be that some adolescents have solidified their career and post-secondary plans so do not perceive career exploration to be a priority. A second explanation may be found in the substantial body of research that has documented that youth are increasingly direction less in their planning for careers (Staff, Harris, Sabates, & Briddell, 2010). Although the post-secondary participation rate in Canada is 37% of 18-24 year olds, approximately 35-50% of students drop out, partially due to not liking their program or feeling that it did not fit with their interests (Parkin, 2009). As well, findings suggested a significant decrease in adolescents' self-esteem from middle to high school. For some adolescents, decreased engagement in career exploration activities may be related to feeling overwhelmed and unable to articulate a defined sense of self (Usinger & Smith, 2010).

Impact of Career Intervention Program

This study tested the hypothesis that children who participated in the Career Trek program would demonstrate higher career-related self-efficacy and awareness than their peers who did not participate in the program. Our findings supported this hypothesis. Given that students participate in the core program of Career Trek in Grades 5-6, the results suggest that the benefit of participation emerges in Grades 7-8. Perhaps engaging in experiential career learning through hands-on skill building helped participants recognize opportunities to think about careers in a manner that they would previously not have perceived, giving them the necessary skills to actually conceptualize the tasks related to career planning. These findings are particularly promising if Super's model is viewed from an epigenetic perspective: when children's career exploration trajectories emerge from environmental factors including quality educational and extra-curricular activities and supportive family/and school relationships, that facilitate the successful navigation of the growth stage (birth to age 14), they achieve a more solid foundation from which they can transition to the exploration and later stages of career development.

Social Contextual Factors

Parental involvement is a powerful influence on children's career exploration processes. In our study parental involvement and action in career development was significantly higher at the middle grades (Grades 7/8) and supports the notion that guidance by adults with influence could lead to a stronger sense of control and self-efficacy in career development. Scores on parental career support and career action were significantly greater for the Career Trek participants when they were enrolled in the program (Grade 5-6) and yet did not differ in the following year. This suggests that Career Trek acted as a catalyst for parents to provide tangible and emotional support for their children's career exploration when they were in the program.

In contrast, children who did not participate in Career Trek reported a predictable pattern of decreased parental involvement as they transitioned from elementary to high school. This is entirely consistent with research that has found overall parental involvement diminishes during the middle school years to minimal involvement at the high school level (Hill & Tyson, 2009; Wang, Hill, & Hofkens, 2014). At the time when children could benefit from greater parental

involvement, parents become less actively engaged with their children. There are a number of possible explanations for this situation. Many parents believe that their children have gained sufficient knowledge regarding post-secondary choices and careers through school-based courses. Others feel that they do not want to "push" particular career directions onto children (Levine & Sutherland, 2013). Parents who may not have high school or post-secondary education may perceive that they are constrained in their efforts to adequately support and encourage their children to achieve their educational/career expectations. Parents may also perceive a period of "developmental indecision" as typical for this stage (Guay, Ratelle, Senecal, Larose, & Deschenes, 2006). Finally, parents may support the idea of "naïve psychology" for career exploration that is constructed from the popular discourse of matching interests and occupational roles position (Marshall, Young, Domene, & Zaidman-Zait, 2008, p. 199). This position reflects the idea that when parents observe their child is interested in particular subjects such as dinosaurs or the planetary system, this attraction will easily and readily translate into an aptitude for archaeology or astronomy. Although this is a reasonable and common belief, it is almost always erroneous as it is not grounded in a well-formulated conceptual framework that accounts for children's developmental stages.

Implications for Practice

Career intervention programs in general have been found to have positive impacts on participant career development. The results of this research suggest that timing of career exploration can also play an important role as elementary-aged children are clearly receptive to early intervention career exploration. From a practical standpoint, it is important to appreciate that when children are presented with new and interesting information in the form of career exploration, they are more likely to report engaging in career-related behaviours. "Doing" is generally rated as holding greater relevance and meaning for students compared to solely listening (Reynolds & Harel-Capterton, 2011). Having this knowledge encourages educators and other stakeholders, including non-profit youth organizations, to plan for the specific types of experiential learning activities that may facilitate greater understanding of particular careers.

Moreover, given that a decrease in parental involvement is associated with less career exploration activities in the middle and high school periods, key stakeholders are encouraged to develop more effective ways of linking parents and family members to information that can promote career-related discussions. Parents/family members report a lack of confidence in their abilities to engage in these activities with their children without support (Levine & Sutherland, 2013). Helping parents generate conversations that are focused on individual abilities, talents, and qualities may promote greater career awareness.

There are a number of other important findings. For some students, the universal, population-based approach to career exploration is sufficient. However, these programs may not meet the career exploration needs of youth who experience academic, social, emotional, or economic challenges. Low socio-economic status, single-parent family structure, parents who did not graduate from high school, absence of vocational guidance, racial/ethnic minority status, and child welfare involvement are all associated with poorer academic performance (Bauer & Riphahn, 2007; Hill & Tyson, 2009; Hussey, Kanjilal, & Nathan, 2016; Lefmann & Combs-Orme, 2014; Nguyen, 2011). Research has suggested that academically at-risk children and adolescents who participate in targeted career development programs demonstrate an increase in both self-esteem and post–secondary school aspirations (Jackson et al., 2011; McIlveen, Morgan, & Bimrose, 2012; Medvide & Blustein, 2010; Turner & Conkel, 2010).
The finding that Career Trek participants report higher levels of friends who were more often in trouble, who engaged in less conventional activities, and whose perceived higher levels of conflict with parents suggests that schools are in fact targeting the appropriate students for the pro-

gram. Moreover, the finding that Career Trek participants demonstrated higher levels of career exploration behaviours reinforces the position that early intervention programs can be effective in mitigating negative risk factors.

Limitations of the Study

One of the limitations of this study was the absence of a contextual analysis that focused specifically on culture. Although the FFS and Career Behaviour checklist have been validated in different cultural contexts (Glozah & Pevalin, 2017), neither have been tested/adapted to address culturally sensitive dynamics that influence career exploration. Children's career exploration develops within specific culture and social contexts and clearly, similar considerations must occur with respect to how these supports and behaviours are assessed. Secondly, a potential limitation exists with respect to the research participants. Given that participants were limited to those who returned completed parental consent forms, the results may be biased toward youth from higher socioeconomic circumstances. Previous research has identified differences with inner-city youth demonstrating lower scores on beliefs related to career exploration, planning, and decision making (Turner, Ziebell, & Conkel, 2011). Therefore, it is possible that the youth who completed the research measures had access to parental and family contexts that prioritized career exploration, thus suggesting selection bias.

Areas for Future Research

The findings from this study suggest a number of areas for future research. For example, Oliveira, Taveira, and Porfeli (2015) have encouraged researchers to further explore children's interactions with key-figures, and development of career interests along with the influence of support offered by key-figures such as parents and teachers. The finding that parental involvement regarding career exploration drops off in the high school years suggests that this is an important area for further exploration. This suggests that a key for further exploration includes investigating how to facilitate and sustain parental involvement in career exploration throughout early, middle, and senior years.

Current thinking affirms that the key factors that facilitate youth post- secondary participation are cultural, where there is: a) an understanding of the benefits of post-secondary education, b) it is perceived as a meaningful option, and c) there has been early and sufficient preparation to facilitate success (Finnie & Pavlic, 2013). In view of this, the research team is currently conducting a longitudinal study that is assessing the long-term impact of the Career Trek program on former participant's high school graduation and post-secondary participation rates. Using propensity score matching, the research team will compare Career Trek participants to a matched control group on educational outcomes, post-secondary participation rates, child welfare and criminal justice involvement, mental health issues, and income assistance to assess the effect of early intervention career exploration as a protective factor for at-risk youth.

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