Training Pre-Service Teachers in Career Education: Developing Foundational Perceptions, Knowledge and Skills

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Abstract

Students in the K-12 educational system benefit from access to high quality career support (Campbell & Ungar, 2008). However, students report that they are not able to access effective career services (Campbell & Ungar, 2008). Either this support is unavailable or if it is available it is ineffective (Domene, Shapka, & Keating, 2006; Osborn & Baggerly, 2004). This article describes a pilot project offered by the Faculty of Education at the University of Lethbridge that seeks to address these issues. Through this pilot project pre-service teachers receive training in career education and learn to infuse career support in regular curriculum. This article examines the findings of a research project that investigated whether this pilot project effectively prepares pre-service teachers to integrate career education into regular curriculum. The findings suggest that this pilot project helped pre-service teachers acquire the perspectives and skills required to effectively support students in their career explorations and planning.

Young people are dissatisfied with the career support they receive during their Kindergarten-Grade 12 educational experience (Campbell & Ungar, 2008; Magnusson & Bernes, 2002; Osborn & Baggerly, 2004). There are two probable reasons why students are dissatisfied. In the first place, students are often not able to access career support (Campbell & Ungar, 2008). In the second place, when they are able to access career support they report that the support they receive is ineffective (Bardick, Bernes, Magnusson & Witko, 2004; Magnusson & Bernes, 2002). The following section explores the reasons for students' dissatisfaction with the career support provided in K-12 schools. Following this discussion, solutions will be proposed to improving the accessibility and quality of career support provided to students in the K-12 educational system.

Sources of Dissatisfaction With Career Support

Many studies suggest that students in the K-12 educational system are unable to access career services and support (Campbell & Ungar, 2008; Domene, Shapka & Keating, 2006; Green & Keys, 2001; Niles & Harris-Bowsbey, 2005; Osborn & Baggerly, 2004; Rosenbaum & Person, 2003; Whiston, 2002). Students receive little, if any, occupation-related information, career information, or career guidance during their school experience (Campbell & Ungar, 2008). Guidance counsellors at the elementary, middle and high school levels spend very little time providing career counselling and career assessment services (Osborn & Baggerly, 2004). They are stretched to the limit due to discrepancies between the large number of students and the limited number of available counsellors (Green & Keys, 2001; Whiston, 2002) and they spend the majority of their time attending to issues such as crisis counselling, discipline issues, academic failure, course planning, and university/college admission (Domene, Shapka, & Keating, 2006; Feller, 2003; Niles & Harris-Bowsbey, 2005; Rosenbaum & Person, 2003). As a result, very little time is devoted to providing preventative, comprehensive career support services. In fact, many young

people are even unaware that guidance counsellors can help them with their career-related needs (Domene et al., 2006).

Exacerbating students' difficulties in accessing career services and support is that fact that when they are able to access services they often do not find them useful. The *Career Needs Research Project* conducted in Southern Alberta examined the career planning perceptions, understandings and needs of students in Grades 7-12 (Magnusson & Bernes, 2002). This study showed that although the vast majority of students in junior high and senior high see the value of engaging in career planning, they do not perceive those working in the educational system as particularly beneficial in assisting them in this endeavor (Bardick, Bernes, Magnusson & Witko, 2004; Magnusson & Bernes, 2002). For example, only 11% of junior high students report that the career counselling provided by guidance counsellors is helpful (Magnusson & Bernes, 2002).

One likely reason why students express dissatisfaction with the quality of the career support they receive in schools is that those providing these services rarely receive any training in career education or career development. For example, a survey conducted in Southern Alberta with teachers who teach career curriculum (Career and Life Management – a mandatory course Alberta students usually take in Grade 11), school coun-

sellors, and health teachers asked participants: "What training do you have in career development?" Fifty-nine percent of the CALM teachers, school counsellors and health teachers who participated in the survey stated that they had no formal training, 37.5% reported that they had some professional development workshops or in-service training, and less than 2% of participants reported having either a certificate or diploma in career development (Witko, Bernes, Magnusson & Bardick, 2006). It is perhaps because of this lack of training that only 33% of Alberta high school students rated the CALM course as helpful (Witko et al., 2006). It is also perhaps because of this lack of training that students do not find the career support they receive valuable.

Another likely reason why students are dissatisfied with the career support they receive in schools is that the support is often based on traditional paradigms of career interventions. The two major paradigms for career intervention in the twenty-first century were vocational guidance and career education. These paradigms are based on a set of assumptions about career development and decision making including:

- Everything is fixed – stable and unchanging.
- Choice is a matter of rationality.
- Logic is the best decision-making style.
- All the relevant informa-

tion that is needed for a decision can be known.
- There is only one best decision. The process of career development is an orderly pattern of progression.
- Indecision is bad and decidedness is good.
- Making a decision does not affect the context in which the decision is made.
- Choice is about a long-term goal such as "the career".
- Choice implementation must be practical – grounded in reality. Commitment is necessary to overcome obstacles in the way of realizing one's choice.
- Other possibilities are dangerous distractions from the achievement of the original goal. (Pryor & Bright, 2011)

The emphasis on long-term goal setting, stability and predictability and rational choice (characteristic of the traditional paradigm) is reflected in the kinds of career services students receive in the K-12 educational system. Such services emphasize testing and matching, one-time decision-making, and provide career support as an ancillary service best accessed near the end of high school. For this reason, career services in schools continue to prioritize formal career assessments (Campbell & Ungar, 2008) and typically provide services through access to a guidance counsellor and

through marginal integration of career planning in the curriculum provided at the later stages of student's education (for example, the Province of Alberta mandates all high school students to take a course in Career and Life Management – usually in Grade 11).

However, the assumptions that underlie the traditional paradigm do not reflect the realities of career planning in the twenty-first century world of work and do not support the types of career support students require. Whereas previously the world of work was characterized by stability, security, and predictability, the world of work in the twenty-first century is described as unstable, insecure and unpredictable (Guichard, 2009; Jarvis, 2006; Kallenberg, 2009; Hartung, Porfeli & Vondracek, 2008; Robinson, 2011; Van Vianen, De Pater & Preenan, 2009). In this context, career planning is not a one-time activity that relies exclusively on rationality and logic. Rather, it is a lifelong process of managing change and often involves capitalizing on serendipity and intuition. As stated in the Government of Alberta's (2011) document "Inspiring Action on Education",

> [Students in the twenty-first century] seek opportunities for personal and professional growth, explore career possibilities and plan accordingly as they confront challenges and adapt to change. They are self-directed and self-aware, using this knowl-

edge to make responsible personal choices and decisions. (p.5)

The career interventions provided to students need to reflect the realities of the 21st century world of work and they need to be geared towards cultivating adaptability.

As Savickas (2005) argues, individuals in the twenty-first century need to:

- Develop concern about their future as a worker;
- Increase personal control over their vocational future;
- Display curiosity by exploring possible selves and future scenarios; and,
- Strengthen the confidence to pursue their aspirations. (p.52)

Savickas (2005) develops these ideas further by stating to thrive in the twenty-first century world of work individuals need to develop career concern, career control, career curiosity and career confidence. Career concern means that individuals develop a future orientation and a sense that it is important to prepare for tomorrow. In describing career concern Savickas (2005) writes, "Attitudes of planfulness and optimism foster a sense of concern because they dispose individuals to become aware of the vocational tasks and occupational transitions to be faced and choices to be made in the imminent and distant future" (p. 52). Career control means individuals de-

velop an understanding that they both feel and believe they are responsible for constructing their careers (Savickas, 2005). Career curiosity refers to inquisitiveness about and exploration of the fit between self and the work world (Savickas, 2005). In describing career curiosity Savickas (2005) comments that it is vital because it "provides a fund of knowledge with which to make choices that fit self to situation" (Savickas, 2005, p. 55). Finally, career confidence "denotes feelings of self-efficacy concerning the ability to successfully execute a course of action needed to make and implement suitable educational and vocational choices" (Savickas, 2005, p. 56).

Competencies such as career concern, career control, career curiosity, and career confidence exemplify the kinds of competencies students require in order to thrive in their careers/lives in the twenty-first century. Students recognize the changing realities of the world of work and the need to develop the competencies to successfully navigate these realities (Campbell & Ungar, 2008). They indicate a desire for more occupational and personal exploration provided throughout their educational experience (Borgen & Hiebert, 2006; Magnusson & Bernes, 2002). As well, they express a desire to "develop a future orientation" (Magnusson & Bernes, 2002; Savickas, 2005). The career support provided to students in the K-12 educational system needs to foster

these capacities and needs to be based on new paradigms of career interventions that emphasize these capacities.

In summary, students express dissatisfaction with the career support they receive during their K-12 education. This dissatisfaction may be caused by the lack of training in career interventions provided to those who deliver career support in schools. It may also be caused by the lack of accessibility students experience when seeking career support. As well, it may be caused by the reliance of career services on traditional paradigms of career interventions.

Solutions to Address Student Dissatisfaction with Career Support

Some potentially effective solutions to address the dissatisfaction expressed by students include:

- Increase the accessibility of career services by infusing career into the regular curriculum through training teachers in career interventions.
- Provide pre-service teachers with training in career interventions.
- Provide career intervention training according to relevant and appropriate career theories.

The following section will describe these recommendations in detail.

Provide Career Support Within Existing Curriculum

Career support needs to be provided in a comprehensive fashion rather than as a marginal activity (for example, provided simply as one course at the end of a student's K-12 educational experience or through limited engagement with a guidance counsellor). As Gypsers (2001) states, "A fully implemented comprehensive guidance and counselling program would best serve the needs of students. When offered in this fashion, guidance and counselling can be an integral and transformative program, not a marginal and supplementary activity" (p. 13). Witko, Bernes, Magnusson, & Bardick (2006) similarly argue that integrating career interventions throughout the K-12 curriculum would be an effective way to address current career concerns. According to Witko et al. (2006), implementing an integrated career curriculum would involve creating career curriculum that is developmentally appropriate and contains a variety of career planning information tailored to students' needs. As these authors suggest, a curriculum that effectively supports students in their career/life construction is one that is comprehensive and integrated throughout the K-12 educational experience. Rathman (2010) describes the value of integrating career guidance into regular curriculum by stating:

> In my view, schools should not leave students

to 'dabble' in a variety of extracurricular classes, activities and experiences with the hope that students will magically discover their individual purposes, their sense of identity, and their ability to function in society. Instead, schools should take a proactive approach to self-knowledge by offering a curriculum designed to help students discover individual assets, attributes, gifts and values...Students then may be able to choose and learn and to do the things in school that will help them materialize the futures they have decided they want. (p. 234)

As is clear, one major recommendation from experts in the field of career counselling to improve the quality of career support in schools is to integrate career education in a systematic and comprehensive fashion throughout the K-12 educational experience.

Provide Pre-service Teachers with Training in Career Education

In order to integrate career planning into regular curriculum it is imperative that teachers receive training in career interventions. As Bloxom, Bernes, Magnusson, Gunn, Bardick, Orr, & McKnight (2008) state, "Considering that students would like support from school counsellors and teachers during their career planning, [the results of our

study] indicate a need for improved career training for school professionals in addition to improved access to effective career planning resources (p. 93). Rathman (2010) similarly comments, "I suggest that the role of teachers expand to include guiding students in knowledge of themselves. Such knowledge can help students plan a future in which they explore their unique selves, identify their own aspirations and goals, and contribute to the world beyond themselves" (p. 239).

Teachers play a critically important role in supporting students in their career/life construction. As Noddings (2003) writes,

The best educational guidance is a product of a shared life, not of highly specialized assessment. Professional guidance counselors have much to contribute in school settings, but they are not best positioned to guide the selection of courses and tracks for particular students. For this task, we need teachers who know their students ... Teachers who have worked with students closely should know something about their aspirations, work habits, character and personality. When a relationship of care and trust has been established, a teacher can talk frankly with students about their goals and plans. (p. 205)

As Noddings points out, teachers often spend a great deal of time with students, get to know their students well, and form relationships of trust with students. They are therefore in an advantageous position to support them in their career/life construction.

Teachers also play a critical role in student's career construction because students are often unable to access effective support in other relationships. Although young people report that non-professionals such as family members, friends, and employers are beneficial sources of information, advice, and encouragement, very few young people report that they received guidance about choosing an occupation beyond "do what makes you happy" (Ungar & Campbell, 2008). Although children frequently turn to parents for career development support (Bardick, Bernes, Magnusson & Witko, 2005), parents report that they are unsure of how to provide effective assistance to their children (Downing & D'Andrea, 1994); They also report that they require greater assistance to help them provide the kinds of effective career planning support their children require (Bardick et al., 2005). Although it would seem that a child's best source of career support would come from his/her home and family, this is often not the case. As Rathman (2010) comments,

When asked where acquisition of self-knowledge should happen, many people respond that it should happen at home. In a perfect world, perhaps that would be correct. However, for the vast majority of young people, such self-learning conversations are not happening at home for a myriad of reasons...Indeed, as a result of the increasingly pervasive modern family structure, self-knowledge must become part of the mission of educating at school. School is the only equalizing factor in EVERY child's life. It is the only place where each child, no matter what type of family he or she comes from, can be exposed to a variety of adults who could guide and mentor him or her toward making positive life choices. (p. 236-237)

Training teachers to provide effective career support ensures that all students have access to the guidance they require to construct their careers/lives.

It is important to note that teachers often acknowledge that they have an important role to play in assisting students in their career construction; however, many feel unprepared to take on this role (Rathman, 2010). As Rathman (2010) reveals,

Many teachers need extensive training before they will feel comfortable leading meaningful and lengthy discussions that are not academically focused. Some teachers naturally mentor and speak to all aspects of their students' lives, but many are

uncomfortable, unpracticed or unfamiliar with diverse aspects of the development of young people. (p. 238)

Certainly, in order to embed career planning throughout the K-12 educational experience, teachers need to be trained in career education. As Rathman (2010) further writes, "...We cannot expect teachers to take on this added role of facilitating self-understanding without first providing considerable training and scaffolding" (p. 238). Doing so will ensure that career education and guidance is not left only to specialist career guidance staff, but is instead supported by all members of the teaching staff.

Base Career Education Training on Modern Career Paradigms

It is also critically important that any career education training provided to teachers is based on new theories of career interventions. New theories of career intervention have been proposed to more effectively meet the needs of people in the twenty-first century. Training in career interventions provided to teachers needs to reflect the tenets proposed by these theories. These include:

- Systems theory;
- Career construction theory;
- Life design;
- Chaos theory; and

- Culture-infused counselling.

I will briefly discuss each of these in turn.

Systems theory. Patton and McMahon (2006) have characterized their "Systems Theory Framework of Career Development and Counseling" (STF) as a metatheoretical framework for career theory. They construct their theory as an "overarching theory within which all concepts of career development described in the plethora of career theories can be usefully positioned and utilized in theory and practice" (Patton & McMahon, 2006, p. 154). The significance of STF is that it creates an awareness of the multiple factors that influence career development. Whereas traditional career theory has tended to focus on specific discrete concepts relevant to individual career behaviour (to the exclusion of other important factors), STF provides a framework for considering the myriad factors that influence career behaviour (McMahon, 2011; Patton & McMahon, 2006). STF emphasizes the plethora of influences that impact an individual's career trajectory – influences such as the individual system, the individual's social system, as well as the broader environmental/societal system (Patton & McMahon, 2006). The individual system includes such elements as gender, health, disability, personality, world of work knowledge, ethnicity, self-concept, etc. (Patton & McMahon, 2006). The broader environ-

mental/societal system includes such elements as the employment market, globalization, socioeconomic status, political decisions, geographical location, and others. These systems are also located within the context of time (for example, the past influences the present and together the past and present influence the future) and are affected by chance (Patton & McMahon, 2006). As all of this suggests, STF rightly presents career development as a dynamic process that is influenced by process influences, recursiveness, change over time, and chance (McMahon, 2011; Patton & McMahon, 2006). This theory offers an extremely useful perspective because it recognizes the complexity individuals face when constructing a career/life in a complex world.

Career construction theory. Career construction theory is based on personal constructivism and social constructionism. Its basic premise is that careers do not unfold (a notion favored in traditional theories); rather, they are constructed as individuals make choices that express their self-concepts and substantiate their goals in the social reality of work roles (Savickas, 2005). Career construction theory asserts that individuals construct their careers by imposing meaning on their vocational behaviour and occupational experiences. The term career, then, denotes "a subjective construction that imposes personal

meaning on past memories, present experiences, and future aspirations by weaving them into a life theme that patterns the individual's work life" (Savickas, 2005, p. 43). This approach is vastly different than traditional approaches to career interventions because it emphasizes identity rather than personality, adaptability rather than maturity, intentionality rather than decidedness, and stories rather than scores (Savickas, 2012). As Pryor & Bright (2011) comment, "Counselling is not about discerning a good match between the person and the occupation, but rather it is about assisting individuals to identify and utilize their life themes through narrative telling and then actively constructing the future" (p. 20).

Life designing. The "Life Designing" (Savickas, 2012) theory of career counselling is built upon the premise that, as a result of the unpredictability and instability of the twenty-first century, workers need to develop skills and competencies that differ substantially from the knowledge and abilities required by twentieth century occupations. Individuals need to become lifelong learners who can "use sophisticated technologies, embrace flexibility rather than stability, maintain employability, and create their own opportunities" (Savickas et al., 2009, p. 240). This theory of counselling emphasizes career construction throughout the lifespan of an individual. The use of the term "career con-

struction" highlights the notion that individuals progressively design and build their lives/careers.

Chaos theory of careers. The "Chaos Theory of Careers" emphasizes the need for theories of career counselling to address the "realities of the contemporary experience of the 21st century students and workers" (Pryor & Bright, 2003, p.121). Chaos theory recognizes the "sheer complexity and range of potential influences on people's careers" (Pryor & Bright, 2003, p. 121) as well as the nonlinear nature of careers in the twenty-first century. Bright & Prior also note, "In chaos theory, the future is conceptualized not principally as some place or time out on the horizon; rather, the future is essentially an individual's next thought, work or action" (2005, p. 53).

The "Chaos Theory of Careers" also emphasizes the Dynamic, interactive and adaptive nature of human functioning in the world and in making career decisions and taking career action...the tendency of humans to construe and construct experiences and perceptions into meaningful and often unique interpretive structures for understanding themselves, their experiences and their world...[and it recognizes the fact] that human experience and career development in particular, tends to be laced with unplanned and unpredictable events and experiences which are often crucial and sometimes determinative in the nar-

rative of people's careers... (Pryor & Bright, 2003, p. 121).

Chaos theory identifies four cornerstone constructs:

- Complexity;
- Change;
- Chance;
- Construction.

The construct "complexity" recognizes the "multiplicity of influences in career decision making" (Bright & Pryor, 2011, p. 163). As well, this construct recognizes that these influences are "interconnected and have the potential to interact in unpredictable ways" (Bright & Pryor, 2011, p. 163). The construct "change" highlights the impacts and effects of change in peoples' lives. The construct "chance" emphasizes the impact that chance has on peoples' careers/lives. Finally, the construct "construction" addresses the opportunities presented by "the lack of ultimate control or predictability" (Bright & Pryor, 2011, p. 164) inherent in life. As Bright & Pryor (2011) express, "The lack of ultimate control or predictability opens up the opportunity for individuals to become active participants in the creation of their futures rather than pawns in a rigidly deterministic system of cause and effect" (p. 164).

Culture-infused counselling. Educators providing career support to students in a twenty-first century classroom in Canada are confronted by a mosaic of people with different customs and cul-

tures (Arthur & Collins, 2010). In order to effectively serve such a diverse population, educators need to gain cultural self-awareness, awareness of client cultural identities, and an understanding of how to develop a culturally sensitive working alliance with students (Arthur & Collins, 2011). Cultural self-awareness involves reflecting on how one's personal culture influences one's view of work, life roles, beliefs about success, and personal agency (Arthur & Collins, 2011). Awareness of student cultural identities involves "understanding the organizational, social, economic, and political contexts that affect presenting concerns; [student] career development behaviour; and [student] perspectives on the meaning and relevance of career-related interventions" (Arthur & Collins, 2011, p. 148). Such awareness goes beyond understanding and extends to selecting interventions that "go beyond helping [students] cope and adapt to oppressive conditions that contribute to work and career barriers in the first place" (Arthur & Collins, 2011, p. 148). Finally, developing a culturally sensitive working alliance involves understanding how to form a collaborative, trusting and respectful relationship with students that values the students' goals and culture and works to address the "systematic and social power disparities that limit [students] from reaching their full potential" (Arthur & Collins, 2011, p. 148). Educa-

tors who develop these competencies are well positioned to support the diverse array of students under their care and have the greatest likelihood of ensuring that all students are effectively supported in con structing flourishing lives.

In summary, students express an inability to access effective career support during their K-12 educational experience. However, in order to thrive in the twenty-first century world of work they require access to such support. In particular, they require access to comprehensive career support throughout their educational experience, integrated into regular curriculum and supported by teachers who have a strong understanding of how to effectively support students to build careers and lives in the context of the twenty-first century world of work. A pilot project offered by members of the Faculty of Education at the University of Lethbridge seeks to provide pre-service teachers with the foundation to provide this kind of support. The following section will describe this pilot project.

Career Education Pilot Project

The goal of the *Career Coaching Across the Curriculum pilot project* was to train pre-service teachers to integrate career interventions into curriculum and to provide them with opportunities to develop the skills necessary to prepare, and deliver, career interventions in the K-12 educational

system.

The pilot project contained two components. The Career Education course was offered over four weekends. The first three weekends were designed to provide pre-service teachers with the knowledge and skills they require to effectively integrate career interventions into regular curriculum. The fourth weekend provided pre-service teachers the opportunity to present lesson plans, unit plans, and school wide interventions they developed to their peers. Through sharing their work with their peers pre-service teachers were provided an opportunity to receive feedback on the career intervention lesson plans, unit plans, or school wide interventions they planned to implement in their internship experiences. Table 1 identifies the topics covered in the first three weekends.

As Table 1 identifies, the Career Education course endeavored to provide pre-service teachers with the opportunity to develop the knowledge, skills and attitudes required to effectively support students in their career construction. During the first weekend, students learned about modern, relevant career theories. In addition, they were introduced to fundamental skills required to support students effectively exploring career concerns. Finally, in the first weekend, pre-service teachers engaged in a discussion about desired outcomes in career interventions.

Table 1

Career Education Course Topics

Weekend #1	Weekend #2	Weekend #3
Career theorists	Discussion of initiation strategies	Self-portraits exercise
Career counselling skills	Guided imagery exercise	Discussion of career decision-making process
General counselling process	Ninety-nine year old question exercise	Discussion of exploration strategies
Career counselling skills triad exercise	Pride story exercise	Discussion of decision-making strategies
World of work in the 21st century	Exploring past experiences exercise	Discussion of preparation (action-planning) strategies
Career counselling outcomes	Discussion of formal career assessments	Discussion of implementation strategies
Career counselling process	Discussion of semi-formal career assessments Discussion of informal career assessments	

In the second weekend, pre-service teachers learned about practical interventions to utilize with students to engage them in the process of considering their careers/lives (called initiation). These activities are designed to get students excited about possible futures and possible selves. They are also designed to help students acquire self-knowledge through the exploration of interests, aptitudes, significant experiences, personality features, personal dreams and goals, and sources of meaning. Pre-service teachers were also provided an overview of the various types of assessments available to them to assist students in exploring their interests, aptitudes, and personalities.

In the third weekend, pre-service teachers learned about practical interventions to implement with students in order to explore the world of work and make tentative career decisions and plans (exploration, decision-making, action planning, and implementation of action plans). Pre-service teachers learned practical strategies for assisting students in exploring possibilities in the world of work. They also learned how to assist students in making career-related decisions, how to help students develop goals, and how to prepare students to pursue their goals in the context of the twenty-first century world of work.

In the fourth weekend, pre-service teachers presented lesson plans, unit plans, or school wide interventions they developed as part of a major assignment in the class. They received feedback from their peers and from their instructor about the strengths and weaknesses of their planned inter-

ventions and they were afforded the opportunity to reflect on their interventions in advance of their internship experience (where they will have to deliver their lesson plans, unit plans, or school wide interventions to students).

The *Career Coaching Across the Curriculum* pilot project also included an internship experience for pre-service teachers. The internship experience was meant to provide an opportunity for pre-service teachers who had successfully completed the career education course to transmit the knowledge and skills they acquired in the career education course to students through specialized curriculum. This internship experience was offered as a half-time (12 week) teaching internship in a school placement in an elementary, middle, or high school in Southern Alberta. During the internship, pre-service teachers were engaged in professional study under the direction of a Faculty Mentor. The pre-service teachers' internships were centered on their teaching major (English Language Arts, Physical Education, for example) but required the integration of a special unit on career into their practicum experience. During the internship, I conducted two rounds of interviews with each pre-service teacher – one at the beginning of the internship experience and one at the end of the internship experience.

The research described in this article investigates whether the Career Coaching Across the Curriculum pilot

project (and the Career Education course in particular) is successful in providing effective career intervention training to pre-service teachers. Specifically, the research described in this article examines whether pre-service teachers experienced growth in their career intervention knowledge, skills and perceptions as a result of taking the Career Education class. It also examines whether pre-service teachers grew in their confidence to engage in the provision of career support to students in the Kindergarten-Grade 12 educational system. As well, it investigates whether pre-service teachers made important shifts in their perspectives on careers that reflect the realities of the twenty-first century world of work and modern career theories.

Method

Participants

Eligibility to participate in the Career Education course was limited to students who had successfully completed the first and second semesters of a cohort-based teacher preparation program in the Faculty of Education. Completion of both semesters entails a total of 11 mandatory courses and two (five and six week) practica spanning elementary and secondary contexts, respectively. Interested participants were then required to apply for the career education specialization. Courses were offered in May/June and September/Oc-

tober of 2009 and 2010. Forty-seven students were accepted into the four available Career Education cohorts. The same male professor in the faculty offered course instruction for all four cohorts thereby ensuring reliability and continuity.

Procedure

As stated earlier, courses were offered over four weekends. Each class attended to various understandings and issues surrounding career counselling. To create baseline data, a pre-test of career counselling knowledge and perceptions was administered at the outset of the course. To demonstrate growth and change in perceptions, the same questionnaire was re-administered at the conclusion of the course. Additional data collection involved a formative evaluation of lectures and activities administered at three separate junctures in the course, and a summative assessment administered after the final class. Although not included in this article, two interviews were conducted with each pre-service teacher during their internship experience, while students in the K-12 educational system completed a research questionnaire after participating in the career education lesson plans, unit plans and school wide interventions provided to them by the pre-service teachers during the internships.

Instruments

The Career Counselling Knowledge Questionnaire was researcher developed. It contained three sections including Demographic Information (i.e., age and gender); Previous Knowledge (i.e., career counselling courses, personal experiences, knowledge of theorists, and inventories); and Perceptions (i.e., 13, five point Likert response questions ranging from Strongly Disagree to Strongly Agree on questions concerning career preferences, selections, and planning).

The Weekend Exit Surveys were also researcher generated. They were two part response questions based on the content for the weekend. The first section asked the student to determine whether they had "Participated Fully", "Somewhat Participated", or "Didn't Participate" in the topic/exercise. The student was then asked on a five point Likert scale whether they found the topic/exercise to be "not useful", "not really useful, but almost there", "minimally useful (but still OK otherwise it would be 0 or 1)", "somewhere between minimally useful and extremely useful", or "extremely useful".

The Summary Evaluation for the course was also researcher generated. It was a split response format that asked the student to address a statement regarding understandings and knowledge of career counselling. The student was asked on a five point Likert whether "Before taking this

class...." his or her understanding or knowledge was anywhere from "unacceptable" (i.e., 1, 2) to "acceptable" (i.e., 3, 4, 5). This same scale was used on the second portion of the question that asked "After taking this class........" his or her understanding or knowledge ranged from "unacceptable" to "acceptable".

Data Analysis Plan

To address the research questions, initial descriptive statistics were computed to explore frequencies, central tendencies, variability, and distributional qualities of the variable of interest. Following preliminary analysis, Pearson Chi-Square analyses and Wilcoxon's Signed Ranks tests were employed to test the non-parametric outcomes of the surveys. All analyses were conducted using version 19 of IBM SPSS Statistical package.

Results

Demographical Information

Descriptive frequency counts were calculated for participants. For the purposes of explanation, students are organized according to Gender and Age (Table 2). Forty-seven undergraduate students were enrolled in four sections of the Career Education course. As see in Table 2, the majority of participants were females between the ages of 20 to 24.

Table 2

Summary of PSIII Career Education Student Age and Gender Frequencies

Age	Female	Male	Total
20-24	26	3	29
25-29	5	3	8
30-34	4	0	4
35-39	1	0	1
40 or over	3	2	5

*N = 47

Table 3

Summary of PSIII Career Education Student Previous Knowledge

	f*	
	Yes	No
Number of students who have taken a previous course regarding Career Counselling	4	43
Number of students who have previous personal experience with Career Counselling (i.e., test, counselling, career fair, etc.)	43	4

* N = 47

Prior Knowledge Questionnaire

To determine changes in career counselling knowledge and perceptions, students were required to complete the prior knowledge questionnaire at the start of the course, and on the last day of the course. Students were asked whether they had taken a previous course on career counselling or whether they had personal experience in career counselling. Table 3 provided descriptive information that identified the lack of previous academic career counselling knowledge in contrast with notable personal experiences with career counselling.

In regards to perceptions of career counselling prior to the commencement of the course, Pearson chi-square analyses were conducting using age. Several question responses were found to be significant (see Table 4).

Upon examination of the cells, significantly more 20 to 24 year old and 25 to 29 year old students chose "Strongly Disagree" and "Disagree" in response to question #1, asking whether selecting a career is a one-time activity. The 20 to 24 year students also significantly chose "Disagree" in response to

Table 4

Summary of Significant Chi-Square Analyses using Student Teacher's Age and Responses on the Pre-Perception Questionnaire

Question	Value*
#1. Choosing a career is a one-time activity that remains relevant throughout your life	29.29
#5. When selecting a career path, the most important consideration is whether there is a high demand for workers in the occupation you are considering.	38.49
#9. Career planning is an important activity	16.35
#12. Schools are currently doing a good job in assisting students in their career development.	28.46

*X^2 (16, N=47), $p < .05$

Table 5

Summary of Significant Chi-Square Analyses using Student Teacher's Age and Responses on the Post-Perception Questionnaire

Question	Value*
#6. Today's world of work is predictable and stable.	21.96
#11. Teachers can play a substantial role in assisting their students in their career planning.	28.21

*X^2 (8, N=47), $p < .05$

question #5 regarding selecting a career path in high demand for workers; "Disagree" and "Slightly Agree" for question #12 that asks whether schools are doing a good job in assisting students in career development; and "Agree" and "Strongly Agree" for question #9 that asks whether career planning is an important activity.

There were fewer significant responses on the perception questionnaire following completion of the course (see Table 5).

Again, the 20 to 24 year old students significantly selected "Strongly Disagree" and "Disagree" in response to question #6 asking whether today's world of work is predictable and stable, and "Strongly Agree" in response to question #11 asking whether teachers play a substantial role in assisting students in career planning.

Wilcoxon Signed Rank tests were calculated between the pre-perception to post-perception responses. Several significant changes in perceptions were detected (see Table 6).

For all question responses the students demonstrated a significant change in perception regarding the importance of career counselling

and the need to be flexible in regards to career change. With the exception of question #9, the students shifted from selecting "Disagree" for their pre-perception responses to "Strongly Disagree" for their post-perception responses. In regards to question #9, the students significantly shifted from selected "Agree" to "Strongly Agree" when asked whether career planning is important.

Weekend Course Content Evaluations

Pearson chi-square analyses were conducted on Weekends #1 (Table 7), #2 (Table 8), and #3 (Table 9) exit surveys. For all three of the weekend exit surveys, those students who reported that they "Participated Fully" in the activities also significantly reported that they found the following activities to be "Extremely Useful".

Summary Evaluation

Wilcoxon Signed Rank tests were utilized to compare student self-evaluations in knowledge and understandings of career counselling from "Before taking this class……" to "After taking this class……". Significant changes were detected on all questions (Table 10).

The following section will discuss the implications of this research study.

Table 6

Summary of Significant Wilcoxon Signed Rank Tests from Pre-Perception to Post-Perception

Question	Mean		Z
	Pre-	Post-	
#1. Choosing a career is a one-time activity that remains relevant throughout your life.	.78	.21	-3.41
#2. The most effective way to select a career path is to complete a career interest inventory or a career aptitude test.	1.42	.67	-4.48
#3. The main goal of career planning is to determine the perfect occupational match.	1.82	1.52	-2.07
#4. The most important goal of helping students with career planning is to let students to make a decision about the occupation they want to pursue.	2.08	1.34	-3.41
#5. When selecting a career path, the most important consideration is whether there is a high demand for workers in the occupation you are considering.	1.14	.73	-2.73
#6. Today's world of work is predictable and stable.	.53	.32	-2.23
#8. Your career begins after you complete your college or university education.	1.19	.80	-2.60
#9. Career planning is an important activity.	3.53	4.00	-4.26
#12. Schools are currently doing a good job in assisting students in their career development.	1.42	1.17	-2.04

$p < .05$ (two tailed)

Table 7

Summary of Significant Chi-Square Analyses using Student Teacher's Declared Level of Participation and Usefulness on Week Course Content: Weekend #1

Topics	Value*
Career Counselling Skills	7.12*
General Counselling Process	6.86*
World of Work in the 21st Century	10.02**
Career Counselling Outcomes	11.78**

*X^2 (2, N=45), $p < .05$
**X^2 (4, N=45), $p < .05$

Discussion

As indicated earlier, students in the K-12 educational system need to develop critical competencies to thrive in the 21st century world of work. It appears that in the current milieu, students are not being provided the opportunity to develop these competencies. One promising solution to this problem involves providing career education training to pre-service teachers. As the results of this study seem to suggest, providing such training to pre-service teachers assists them in developing critical attitudes, perspectives, knowledge and skills essential to providing effective career planning support to students.

Through their participation in the Career Education class, pre-service teachers reported that they experienced important changes in perceptions. More specifically, by the end of the course the majority of pre-service teachers strengthened their perception that schools could do a better job of assisting students in their career development and they strengthened their perception that teachers can play a substantial role in assisting students in their career development. As well, they strengthened their perception that career planning is an important, life-long activity (not a one-time activity) and that personal meaning is a fundamentally important consideration when making career decisions (as opposed to only making career decisions based upon labour market information). Finally, they strengthened their perception that the world of work is unpredictable and unstable and therefore necessitates that students develop competencies to effectively manage change. At the outset, younger pre-service teachers (as compared to older pre-service teachers) more strongly endorsed certain career perspectives (for example, the in-

Table 8

Summary of Significant Chi-Square Analyses using Student Teacher's Declared Level of Participation and Usefulness on Week Course Content: Weekend #2

Topics	Value
Discussion of Initiation Strategies	12.86*
Guided Imagery Strategies	15.74*
Exploring Past Experiences Exercise	18.08**
Discussion of Formal Career Assessments	5.88***
Discussion of Semi-Formal Career Assessments	10.03****
Discussion of Informal Career Assessments	17.33*****

*X^2 (2, N=44), $p < .05$
**X^2 (2, N=40), $p < .05$
***X^2 (1, N=43), $p < .05$
****X^2 (4, N=43), $p < .05$
*****X^2 (6, N=43), $p < .05$

Table 9

Summary of Significant Chi-Square Analyses using Student Teacher's Declared Level of Participation and Usefulness on Week Course Content: Weekend #3

Topics	Value
Self-Portraits Exercise	46.41*
Discussion of Career Decision-Making Process	12.42**
Discussion of Decision-Making Strategies	5.42***
Discussion of Preparation (Action-Planning Strategies)	5.26**
Discussion of Implementation Strategies	7.83***

*X^2 (6, N=46), $p < .05$
**X^2 (2, N=45), $p < .05$
***X^2 (1, N=46), $p < .05$

stability of the world of work, the need to engage in life-long career planning, the relative effectiveness of schools in providing career development support, etc.). However, by the end of the class all participants came to strongly endorse these items.

In addition to critical changes in perceptions, pre-service teachers who partici-pated in the Career Education course also experienced changes in knowledge and confidence. Specifically, as a result of participating in the Career Education course, pre-service teachers reported that they developed: a much better understanding of career development theory and how it influences practice; a better understanding of how to engage students in career planning; increased knowledge of valuable career development resources for students and teachers; increased confidence to integrate career education into curriculum; better knowledge of the processes involved in career self-management and a greater understanding of the importance of life-long career self-management; and a increased appreciation for the impact teachers can have on the career planning of students.

As a result of experiencing these important shifts in perceptions, knowledge, and confidence, the likelihood that pre-service teachers will engage in providing the kinds of career education activities students require to develop the competencies described earlier is greatly enhanced. That is, as a result of developing a heightened understanding of the instability of the 21st century world of work, the need to engage in life-long career self-management (and the need to develop the skills to do so) and the significant role that teachers can have in supporting students in developing the knowledge, skills and attitudes to thrive throughout their lives/careers, pre-service teachers are more likely to intentionally integrate career interventions into curriculum and provide critical career learning opportunities. Further research needs to be conducted to determine whether this in fact the case. However, these preliminary findings are promising.

Although the intention

Table 10

Summary of Significant Wilcoxon Signed Rank Tests from Before Taking the Course to After Taking the Course

Question	Mean		Z
	Before	After	
A clear understanding of the theories of career development	1.41	4.04	-6.03
A clear understanding of how the theories of career development influence practice	1.41	4.26	-5.98
A clear understanding of how to get students involved in, and excited about, the importance of career planning	2.15	4.71	-5.97
Knowledge of resources available to students and teachers to assist students in their career planning	2.02	4.45	-5.98
Confidence in my ability to integrate career development concepts into the curriculum	1.67	4.63	-5.92
Knowledge of the processes involved in effective career self-management	1.84	4.71	-5.97
Understanding the importance of lifelong career self-management	2.73	4.84	-5.57
Understanding of the impact a teacher can have on the career development/career planning of student	2.97	4.86	-5.64

$p < .01$ (two tailed)

of this article is not to provide a template for how to offer a course in career education to pre-service teachers (or to provide detailed descriptions of what to include in such a course), the results of the research described in this article suggest some broad topics that seem to be particularly engaging and beneficial to pre-service teachers when training them in career education. These include: career counselling skills, general counselling processes, the world of work in the 21st century, initiation strategies (activities designed to engage students in self-reflection – especially related to exploring sources of personal meaning and visualiz- ing a preferred future), career assessments (especially informal career assessments), career decision-making processes, career decision-making strategies, action/planning strategies and implementation strategies. These particular topics were most strongly endorsed by the pre-service teachers in our sample.

In summary, the *Career Coaching Across the Curriculum* pilot project was developed to improve the level of career support available to students in the K-12 educational system. Experts in the field of career development suggest that students require particular competencies to thrive in the 21st century world of work. Research suggests, however, that they are not accessing the level of support they require to acquire these competencies. The research described in this article suggests that, as a result of participating in the Career Education course (offered as part of the *Career Coaching Across the Curriculum* pilot project) pre-service teachers developed important perceptions, knowledge and skills about career planning in the 21st century. It is hoped that these changes in perception, knowledge and skill will result in these pre-service teachers infusing effective career planning support into curriculum when they participate in student teaching internships and when they pursue career opportunities in the educational system. In this way, the goal of providing effective, comprehensive support to students in the K-12 educational system will be advanced and students will receive the level of career support they both want and require. The researchers involved in this study are currently conducting follow up research to investigate whether providing this training to pre-service teachers in fact results in enhanced career planning in students and will report on this in subsequent publications.

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