Career Education: Pedagogical Approaches within the Context of Alberta

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# Abstract

Contemplating a career is an important life decision that teens and adults think about during high school or post-secondary education. This personal decision is often difficult and can be based on a number of factors such as one’s interests, life experiences, skills, knowledge, aptitudes or influences Savickas (2011b). Specific influences on an individual’s career choice may include family, friends, teachers, school counsellors, professionals in the field or individuals in a community. Because there are a large number of factors and influences that a person takes into consideration when making the ‘right choice’, the need for career education and counselling is particularly important as their chosen profession may serve the individual for the rest of their life.

The research encapsulated within this paper addresses how school administrators, counsellors and teachers can pedagogically approach career education so it is effective and meaningful for high school students. A literature review is undertaken with varying themes to inform schools and professional and includes: various influences on student’s occupational choices; the role of the school counsellor and teacher in assisting with career selection; ways in which technology can help with recommendations; how schools can support special needs students; and, other considerations related to career education. Based on the literature, a discussion is provided along with recommendations and approaches for high schools as it pertains to an Alberta perspective to inform best practices.

The project culminates with the introduction, function and rationale of the “Careers Subway Map” which was created as a tool to be used in conjunction with the research in this project. The subway map is a visual of occupations that correspond to specific high school subjects or Career and Technology (CTS) clusters. Each stop or destination along a particular subject line is represented by a specific career with a symbol to represent the type of education required and is situated within various zones to represent the number of years for post-secondary or training required. The “Careers Subway Map” is to create a visual that is interesting to view and to engage students regarding possible occupations based on subject interest. The intent is that this research and visual map will provide guidance for schools to help inform their pedagogical practices towards career education and guidance.

# Introduction

At the beginning of each semester or summer school, I have an icebreaker activity with my Design Studies, Digital Arts and Animation at the 10 level and Career Adult Life Management (CALM) classes. I ask students to stand up one at a time and answer a series of questions on the whiteboard. Students are required to introduce themselves, tell me about their unique talents and discuss what they did over the break or what they plan to do in August if they are enrolled in CALM classes during summer school. One particular question I am always interested in is, ‘what to you want to do when you grow up, except be a fire truck?’ The last question typically elicits laughter but the topic then turns serious as students eagerly or grudgingly await their turn to answer. I am always surprised by the number of students who simply do not know what their career goals may be, especially at the grade 10 level. Some students suggest they may follow in their parent’s footsteps while others may have extremely lofty or perhaps unrealistic goals such as wanting to become a doctor but most are certainly undecided. Interestingly enough, I repeat the same icebreaker activity in my Design Studies and Digital Arts and Animation classes at the 20 and 30 levels. Students begin to narrow their choices with more certainty related Career and Technology Studies (CTS) classes they are taking or have previously taken but generally there are still many individuals with little direction and certainty. While this antidotal observation may seem inconsequential at first glance, it is of serious concern because career education is not addressed adequately in schools. My experiences as a high school teacher suggest students are largely undecided with their career goals, although CTS courses help shape career paths for some. Whether other teachers have similar experiences to my own is uncertain but what is known are that the majority of Canadian teens do not seek career guidance or make occupational choices until their early adulthood (Statistics Canada, 2015). Studying varying approaches to career education at the secondary level that are pedagogically effective and meaningful will be the focus of this research.

## Research Problem, Rationale and Significance of Study

The research that is encapsulated into this Master’s Project will address the following question: *how can school administrators, counsellors and teachers pedagogically approach career education so it is effective and meaningful for high school students?*

The rationale and significance of this study is important for many stakeholders with vested interests in career education and guidance including students, parents, teachers, counsellors and school administrators. As students are at a crossroads in high school, careers education is important in terms of transition to post-secondary education or the world of work (Zunder, 2002). The opening narrative at the beginning of this paper serves as an indication that careers guidance may not be a sustained priority in curriculum throughout secondary education. This paper will then make contextual arguments for varying pedagogical approaches to be used in tandem with each other later in the Discussion section. It is important for school counsellors and teachers to work together in delivering career education to meet the needs of students (Chen, 2005). Thus, exploring a variety of themes as to why career education delivered effectively matters. Students may struggle with career readiness due to career information that is limited from their surroundings, lack of self-awareness and external influences that interfere with their career choices (Lara and Vess, 2015). External influences such as friends, acquaintances and family with their suggestions are most likely made with the best intentions but they could lack expertise which is why it is important to have knowledgeable educators and counsellors.

The Organization for Economic Cooperation and Development (OCED) (2004) makes the argument that career education is important for the growth of economies and that the foundational base of skills and knowledge in societies are essential to compete on a global stage. Due to globalization, career paths are becoming more unpredictable as there is rapid change in the labour market due to increased competition from developing nations. Emerging countries can deliver products and services at lower costs and as such, the workforce in North America needs to adapt quickly to compete where using the latest technology will be key to staying ahead (Gati and Levin, 2014). To better assist students and compete on an international stage, careers education should be regarded with importance especially as individuals may struggle to plan their future from an overwhelming amount of options or lack of guidance on the topic.

In terms of selecting a suitable career, Savickas (2011a) states that for individuals to make wise choices, they should be concerned for their own futures. It is important for education to generate an awareness of the topic in a meaningful way so students are better able to compete on the global stage. Students should also have curiosity of possible career paths and exercise control and autonomy over the inquiry, research and decision making processes that may arise from past experiences, schooling and family. Savickas also believes increased self confidence through knowledge eventually leads to self-belief in reaching careers goals.

## Approach to Research

A literature review will be undertaken as part of this research followed by a discussion. Several major themes were prevalent upon searching and analyzing scholarly journals. After the literature review, a discussion will examine the various findings and recommendations will be provided to advance effective and meaningful pedagogy in secondary schools within the context of Alberta. A Careers Subway Map was also developed specifically for this project. A detailed explanation on how it is used and the thought processes that went into the design that make the resource a useful tool is described below. The careers map is to be used in conjunction with suggestions from this paper and is freely available for viewing, downloading or editing. The literature review and Careers Subway Map becomes a blueprint for schools and professionals to help and promote career education with the intent to better serve the needs of students as it applies to career guidance and counselling. This blueprint uses a well-rounded and balanced approach from many areas of research on career education. This paper attempts to bring the research of various scientific journal studies and coalesce the findings. Several recommendations arise that are based on empirical findings which can be applied functionally towards career education and guidance.

# Literature Review

Upon searching Google Scholar (n.d.) and accessing periodical journals from the University of Alberta Libraries (2018), using the key words ‘student’, ‘youth’, ‘counselling’ and ‘career guidance’, four main themes emerged from scholarly literature: 1) various career influences on students; 2) the role of the school counsellor and teacher in helping with career choices; 3) how technology or questionnaires can generate student occupational recommendations; and 4) supporting special needs or gifted students using an individualized learning plan as it pertains to career goals. An ‘Other Consideration’ section is added as there are noteworthy studies with regard to vocations and entrepreneurship. The literature is taken from Canadian and international studies and compared for patterns where generalizations can be made.

## Influences on Students for Career Choices

Student uncertainty in relation to careers was studied by Galliott and Graham (2015) in New South Wales, Australia where they found many students are leaving secondary school without direction or choice. Using a large sample of just over 700 participants, the researchers administered surveys trying to determine factors that hindered confidence in career choices. Some of the findings include students who identified themselves as ‘career uncertain’ had less access to elective courses and career education counselling. Schools that had a robust selection of electives and access to career counselling identified themselves 2.12 times more ‘career certain’ than those who were ‘career uncertain’. Overall, there was a strong correlation to career choices in comparison to the diversity of subjects offered within a school. In addition, students who identified with disliking school in general had difficulty choosing a career. Galliott and Graham recommend that students be counselled to take subjects that they had some interest in order to promote career awareness. These authors noted that proactive career counselling that begins in middle school through to high school would have a positive impact on career guidance and decisions. The implications of the Galliott and Graham study demonstrate that a curricula that is wide in scope and encompasses a variety of skill and trades subject areas, has a positive impact not only for the attitudes of students but their knowledge related to their post secondary or career choices. The more informed students are through course selection, the better students can make informed career choices.

A study was undertaken by Bloxom, et al., (2008) in which they sought to find what student resources are needed to assist them with career planning and which are most effective. Over 850 grade 12 high school students who passed the Career Adult Life Management (CALM) course in Southern Alberta participated in the survey in which responses were ranked using a Likert scale ranging from 0 (not important) to 4 (very important). Many of the questions were open-ended which added a qualitative measure to the study. The study affirmed that career planning activities and courses significantly assisted students with their decision making process. The top 10 perceived career resources ranked in importance by these students include: “1) CALM courses; 2) career counselling; 3) written materials; 4) work experience; 5) internet sites; 6) Career and Technology Studies (CTS) courses; 7) computer programs; 8) school career information centres; 9) career fairs; and 10) interest inventories.” (Bloxom, et al., p. 91). Galliott and Graham’s (2015) findings are similar to Bloxom, et al., who also generally found that students surveyed had interest in careers that are linked to “their interests and abilities as well as their passions” (p. 92). Because students rank teachers and school counsellors as high influencers of career choices, it is important that these professionals be given access to proper resources and training to support career guidance for youth.

In contrast to Bloxom, et al. (2008), Kidd and Wardman (1999) found students perceived school counsellors and career education as having little impact compared to parents, teachers and friends; albeit, this study was conducted after students took a careers course. Forty respondents from middle school in the United Kingdom (UK) were interviewed with semi-open questions in which career decisions were explored based on course variety and influences from parents, teachers, friends and careers counsellors. The general theme that emerged was that parents and teachers had the most impact on student career guidance and, as such, reliance on these opinions was held in higher regard. Students acknowledged that career advisors were friendly and helpful but also found that they were not as in-depth or thorough as teachers or family members. The same study concluded that compulsive career education had many students express dissatisfaction overall as to the quality of those programs. The researchers cautioned that the data collected were months or years after events such as speaking with a counsellor or taking a career related course. Almost half the respondents stated they never had taken a career guidance course but upon checking registration records, they were enrolled or the course was integrated with another subject. Lack of interest in career education from the UK study may have fallen short of student expectations or be perceived as boring for many thus resulting in unfavorable responses . Because students are primarily seeking help from teachers and parents, a greater need for strengthening career guidance programs is needed as they were found to be effective in Alberta (Bloxom, et. al., 2008).

Career development in adolescents showed high levels of influences from parents (Keller and Whiston, 2008). Using the Career Maturity Inventory-Revised (CMI-R) developed by Crites and Savickas (1996), almost 300 participants were surveyed from a Midwestern state middle school representing both urban and rural areas. The findings support that parental attitudes were helpful in individuals gaining awareness of pathways and knowledge of how attain career specific goals. As parents are more involved with the topic of careers, it promoted career development as a significant life-decision in youths. However, Keller and Whiston suggest that parents can unduly exert a large amount of influence causing anxiety and stress to their children. One of the recommendations of their study was professional practitioners such as teachers and school counsellors should inform parents of the large degree they have towards influencing their children. Keller and Whiston advocate for a balanced approach in which a parent’s influence over career related matters are supported by warmth and autonomy to ensure the well-being of the child and their choices. In addition, relying on parental advice at times can be problematic in that parents of low-social economic status may be less likely to have adequate knowledge compared to parents with affluent backgrounds (Wikeley and Stables, 1999).

Another study of parental influences on student career decisions was undertaken using grounded theory with a phenomenological perspective with 12 participants; six of which were first year students while the other six were sophomores at the University of Midwestern (Workman, 2015). A theme that emerged was parents had a positive influence in student career decisions but under half the respondents stated there was pressure to pursue careers already held by family members. Parents also influenced these students to declare majors that would lead to prestigious or high profile careers. Students in general felt parental influences, whether it be positive or negative, did affect their overall career choice.

The implications of the Keller and Whiston (2008) and Workman (2015) studies are that parental influences span from middle years to post-secondary and can be both helpful or a burden. The positive effects are that students are exposed to attitudes and behaviours from parents that can help lead them towards a specific career and can help gain awareness towards the required steps in which to get there. However, negative influences such as high or unrealistic expectations can cause students a great deal of stress or anxiety. A tempered with a balanced approach that focuses on an individual and their abilities is recommended.

Statistics Canada (2015) was also able to support the above literature in terms of various influences on students. Using a large cohort group starting at the age of 15, individuals were provided the same questions in a longitudinal study every two years until the age of 25. The main research question asked what career they would like to have by the age of 30. The findings from the Statistics Canada study show that youths begin deciding careers early in their teens although that number does not increase significantly until adulthood. Career decisions were influenced by both parental valuation of post-secondary education and their socioeconomic status (SES). The researchers also found that individuals with low parental support or SES status had difficulty obtaining advice regarding careers. Economically disadvantaged adolescents need career counselling and support interventions to overcome obstacles associated with poverty (Aguiar and Conceicao, 2015). It was also found that a large number of students with parents in a higher SES were significantly consistent in terms of their career choices over time compared to low or middle classes (Statistics Canada, 2015). Last, individuals who were consistent with their career choices from adolescence into early adulthood were more likely to complete a Bachelor degree as they were more realistic in terms of occupational expectations.

Savickas (2011b) postulates that individuals approach careers using construction theory. This post-modern theory states that individuals using vocational behaviours impose meaning on their choices. Examples of vocational behaviours according to Savickas are: meanings that are personal and from past experiences; based on an individual’s knowledge, skills and attitudes; and, career-related interests and abilities. Vocational behaviours change over time and are continually redefined in order to create intrinsic value that is socially-constituted. Savickas believes when teachers and counsellors approach their students regarding possible future careers, it is important to understand their quintessential lived experiences or narratives based on life events which serve to lay a foundation towards choosing their future occupation. This theory suggests that external influences such as parents, teachers, counsellors, community or friends are not exclusive defining factors in which an individual’s careers choices. These influences are important experiences in reshaping personal decisions in addition to an individual’s abilities, values and interests. Education that is effective and meaningful then adds to student understandings aiding in career construction.

A consistent theme that has emerged from the above articles is that parents, counsellors and teachers play a large role guiding students through their difficult career decisions starting in the early adolescent years through to adulthood. Career education does influence student engagement but the results are dependant on the value of the program. My observation would suggest the quality of courses related to making career decisions are important from a pedagogical perspective. As such, career education should start from an early age or in junior high with a curriculum of clearly defined outcomes delivered with a consistent approach that is not cursory but rather in-depth. This is especially important with students with a low SES who have limited parental support due to lack of resources or knowledge.

## School Counsellors and Teachers in Career Counselling

School counsellors were found to be ill-prepared in relation to career counselling duties according to Morgan, et al. (2014). Using phenomenological research inquiry, a purposeful convenience sample of 18 high school counsellors were interviewed where four key findings emerged: 1) feelings of inadequacy in career counselling; 2) disconnect between formal education and professional duties; 3) operating in a vacuum without a network of resources or outside support; and 4) the perception that professional development programs were non-existent. Many counsellors felt they were inadequate in their role in career counselling and they would seek out other school counsellors as part of informal mentoring. Morgan et al., also found that technology is a vital role in career counselling but rarely used. Also noted in the study was that school counsellors are torn between duties and devote little time to career counselling. This assertion is also supported by Wines et al. (2007) who found that middle and high school counsellors perform many different tasks and their workloads are considered heavy from their quantitative survey results. In addition to personal and career counselling, school counsellors often find themselves as a liaison with the community and parents on a regular basis, work on individual progress plans, register new students, provide orientation and manage results of psychological / academic testing. The research from Morgan et al., and Wines et al., demonstrates that school counsellors do not spend a considerable amount of time on career counselling and often their duties are disproportionately allocated elsewhere. The findings suggest that school counsellors require more time for career counselling. Other countries such as Germany spend a considerable amount of resources and time providing career counselling and guidance compared to their North American counterparts beginning in middle school. As students enter secondary school, they typically have a possible career in mind as they stream into dual education system devoting their studies towards full time vocational studies, upper secondary grammar school (academic stream) or a combination of both (European Commission 2017). The German education system devotes more time and resources into careers counselling at an early age which countries such as Canada can learn or adapt from.

Chen (2005) also found that career guidance is “stretched to its limits (p. 18). He states there is typically one counsellor per 300-700 students depending on the school or district in Canada. In order to be effective, an alternative initiative is required that promotes career and vocational guidance between teachers and counsellors as an integrated approach. Chen further argues that a professional bond between the teacher and counsellor be established in which the expertise of these individuals can help career planning beyond the cursory level. The role of the counsellor is to establish effective communications and engage the willingness of teachers to share ideas of interest with students. Collaboration that is productive should: 1) be voluntary and not mandated by administration; 2) require balance or parity between parties; 3) have shared responsibilities in the decision making processes; 4) encapsulate mutual understanding of professionals towards specific goals; and 5) have willingness of individuals to share resources and time (Chen, 2005). Career fairs, work site field trips, job shadowing, networking with the business communities are all examples of collaborative efforts that can be supported by school counsellors and teachers. Utilizing these cost-effective methods could reach more students (Gysbers and Henderson, 2001). The benefits of collaboration can lead to more opportunities for school staff to gain additional knowledge and expertise in career guidance.

## Role of Technology and Career Assessments in Career Counselling

Gati and Levin (2014) review three cost-free questionnaires to see how effective they are in the career decision making process: 1) the Career Decision-Making Difficulties questionnaire (CDDQ); 2) the Emotional and Personality-Related Career Decision-Making Difficulties questionnaire (EPCD); and 3) the Career Decision-Making Profile questionnaire (CDMP). The purpose of the CDDQ is to assess deficiencies according to an individual’s attributes using a taxonomy. Some domains of assessment include a person’s barriers to motivation, lack of readiness, dysfunctional beliefs, pessimistic views and general indecisiveness among others. Rather than focus on barriers for career selection, the EPCD focuses on emotional factors that may be difficult to overcome such as pessimistic views of the decision making process, negative ramifications for making the wrong choice or anxiety and uncertainty towards a decision. The last questionnaire type reviewed, the CDMP, uses a more comprehensive research gathering technique tailored to an individual’s need (Gati and Levin). The CDMP uses 12 dimensions with varying scales to determine a clients’ needs. For example, the dimension of an individual’s ability to process information can range from holistic versus analytic and the criteria dependence on others can be rated from low to high. Other dimensions include effort invested in career investigation process, aspirations for optimal occupation, ability to compromise based on choices, and reliance or dependence on others for career choices. It is also important to note that the CDDQ, EDPC and CDMP can be administered face to face, using the internet or with pencil and paper.

Using an in-depth interview from a sophomore as part of a composite case study from an undisclosed university in the United States (U.S.), Gati and Levin (2014) found that all three assessment questionnaires were important to administer before one-on-one meetings. Gati and Levin found the three questionnaires: CDDQ; EDPC; and, CDMP created insight based on the student’s responses before an interview and complimented a counsellor’s intuition during sit-down discussions. Questionnaires produced specific avenues for counsellors to explore and provided a segue into more meaningful conversation. The research from Gati and Levin is significant for school counsellors in that they can administer these questionnaires or similar equivalents for students to complete in advance of a sit down meeting to help identify various traits that can be channeled towards a specific career. From an efficiency standpoint, online assessments are helpful to ease counsellors’ heavy work loads that, in addition to career counselling, include families and special needs or English as a second language (ESL) students. Considering many schools at the junior and high school levels are have a large population with varying demographics, counsellors may not know many students who approach them and the questionnaire results can help focus discussions for student career opportunities.

A case study of the Occupational Information Network (O\*NET) was undertaken by Lara and Vess (2015). A single freshmen at a northwestern public university in the U.S., was interviewed after using the career database. The O\*NET database was built specifically for helping the general public find careers. The site was developed in the United States by the Department of Labor/Employment and Training Administration and has identified over 900 occupations based on eight domains: “abilities”, “interests”, “knowledge”, “skills”, “work activities”, “work context”, “work styles”, and “work values” (National Center for O\*NET Development, 2018). The internet site can be used independently or in conjunction with career counsellors. Individuals can search using various domains to further narrow down their choices into sub-domains. For example, if an individual selects the domain “abilities” from the menu, he/she can further reduce choices to “cognitive”, “physical”, “psychomotor” and “sensory”. In the case of selecting “cognitive abilities”, a number of sub-domains are listed such as “deductive reasoning”, “mathematical reasoning”, “oral expression”, and “originality” (National Center for O\*NET Development). Upon choosing the sub-domain of “mathematical reasoning” a variety of careers are listed such as statistician, physicist, actuary, and mathematician. Another way O\*NET can be used is by completing the personality profiler that will produce a number of recommendations based on compatibility. A locator is also built in to help an individual find careers within a geographic region. The site is extremely comprehensive but can also be overwhelming with the tremendous amount of information available. Lara and Vess (2015) reported that the study participant expressed concern that there were too many options and the database can be over-detailed. Overall, Lara and Vess showed that O\*NET is a useful tool in career counselling because it challenged individuals to think reflectively about themselves rather than rely on authority figures solely for advice.

I would also concur with Lara and Vess’ (2015) finding based on my own use of O\*NET. The internet site is an extremely useful tool but is packed with too much information with a large number of recommendations and results. Another concern I have for O\*NET is there are many ways of searching for career and knowing which one among the many methods is difficult to choose from. The O\*NET database also has geographical limitations as it was designed specifically for the United States and any selection of online databases for educators, counsellors and schools should help compliment regional needs. However, certain aspects of O\*NET such as filtering careers according to domains and sub-domains can be helpful despite geographical or regional biases. None-the-less, O\*NET and other online equivalents are excellent for career investigation while representing one of many tools that teachers, counsellors and schools can use to help students.

An extensive literature review was undertaken by Gati and Asulin-Peretz (2011) regarding internet career self-assessments. These authors investigated advantages and disadvantages, which they summarized into a succinct analysis to help career counsellors. Gati and Asulin-Peretz found that a large number of individuals initially seek advice from family members and acquaintances before using technology or scheduling an appointment with a school counsellor. Upon scheduling a meeting, typically a school counsellor provides internet career assessments before one-on-one discussions take place. The researchers recommend strategies for counsellors to increase student readiness for career decision making: pre-screening; in-depth exploration and analysis; narrowing choices; and guidance implementation. Gati and Asulin-Peretz found online assessment tools are an integral part of the process in that they are complementary and do not compete with counsellors.

Some of the advantages of online self-assessments, according to Gati and Asulin-Peretz (2011), are that these are tools that can be administered at the convenience of an individual at the time and place of his/her choosing. Flexible timing could reduce the stigma of seeking professional career advice and increase anonymity. Online recommendations can target specific pathways for a counsellor to explore and will help narrow discussions which is similar to the findings of Gati and Levin (2014). A range of quality career assessments are available at no cost that utilize research-based algorithms, which provides a high level of validity and reliability (Gati and Asulin-Peretz, 2011). Disadvantages of career online tools are: 1) the number of choices presented may be overwhelming; 2) an individual may not necessarily agree with the recommendations; and, 3) the absence of counsellors or teachers during the assessment is a major drawback as their professional judgement and intuition is not given at the time of administering.

Gati and Asulin-Peretz (2011) identifies two approaches to technology: 1) that schools buy-in to a career guidance service with personality inventories and questionnaires; and 2) a member of staff is available to oversee career counselling. It is recommended that career counselling professionals incorporate a variety of tools because of their overall efficiency and efficacy to meet the needs of students.

## Special Needs

Individuals with special needs can face a myriad of problems in which schools may be ill equipped or unprepared to handle when transitioning students from secondary to post-secondary. When approaching career counselling, it is important to take into consideration the type of disability, level of maturity, social skills and the emotional, verbal or intellectual capabilities of an individual (McEachern and Kenny, 2007). McEachern and Kenny found that a number of group sessions lasting between 45-50 minutes and ranging between 20-40 students at the secondary level were helpful. Discussions amongst the students focused on major themes such as: 1) awareness of self and others; 2) self-advocacy; 3) making good choices; 4) understanding admissions and requirements of post-secondary; 5) accessing support services; and 6) making connections with others (McEachern and Kenny, 2007). Counsellors found these sessions are particularly helpful in terms of getting to know individuals personally and gaining in-depth knowledge about their interests and aptitudes. Ice breaking activities helped identify student strengths and weaknesses. Learning styles inventories used in later sessions provided more data to better match learning styles to careers. The notion of advocating for self and providing tools and resources was especially helpful for students. The McEachern and Kenny study based on interviews of special needs students attending sessions has many merits but a major unknown is the level of ‘buy-in’. Students with learning or physical disabilities may not want the stigma associated with meeting others from their peer group. Schools in general offer a large degree of integration of special needs students into regular programming, so motivation and participation levels of coded students attending these meetings was not studied nor mentioned. Perhaps a better approach to only special needs career counselling meetings may be to have a range of students irrespective of coding attend to reduce stigma. An integrated approach could be insightful as a topic of future study.

Special needs encompasses a broad range of individuals who are learning disabled, have a physical disability, may be at high risk for not completing school because of emotional issues or are learning English as a second language (ESL) but can also include gifted students. Peterson (2015) argues that gifted children experience social and emotional challenges and need career counselling support. Peterson defines gifted students as those who have an intelligence quotient (IQ) of 130 and above. Too often gifted children are neglected due to the perception that they are intelligent and are competent to make independent career decisions, but what Peterson found, gifted students typically suffer from behaviour disorders, anxiety or depression and are under represented as a group asking for assistance from school counsellors. Counsellor bias was suggested as another reason why gifted students do not receive special attention they may require. As students feel “intimidated, insecure, inferior, competitive, or judgemental, counsellors might assume that successful students cannot have serious counselling concerns” (Peterson, p. 156). Peterson argues that high achievers require the same attention as regular or special needs students and should be identified with the help of teachers. What is not known in Peterson’s (2015) analysis or based on his previous or other researcher’s studies, is how parental or home pressures can cause high levels of stress and anxiety in students based on unrealistic and lofty expectations. The research identifies the importance of career education in terms of identifying and supporting students who are gifted and debunks the myth that low achieving students as the only group requiring support. The notion that gifted teens will figure out career paths on their own is not sufficient and a variety of strategies and interventions may be required.

Chen and Wong (2013) view gifted students as people who have great capacity and aptitude in a variety of domains such logical reasoning, problem-solving, ability to learn, and managing or completing tasks while scoring high in a variety subject areas. Typically, these individuals score in the top 10 percentile compared to their peers and identify as wanting to hold top ranked occupations such as a doctor, engineer, or scientist. Although gender differences in terms of career engagement are slightly higher for females than males according to Statistics Canada (2015) and Haynes, et al. (2013), Chen and Wong (2013) found that expectations of careers differed significantly due to traditional stereotypes. Chen and Wong recommend counselling that discusses contextual factors that influence a woman’s decision. Counsellors and teachers may encourage female students towards career planning that is not limited to traditional roles and to those where gendered assumptions are removed.

An individualized learning plan (ILP) can help as an intervention strategy for students who have special needs on either side of the continuum. Solbert et al. (2012) view ILPs as a way for students to become more engaged with career choices in order to make the transition from secondary to post-secondary schooling. An ILP is a goal driven document with student input that takes into consideration his/her interests, skills and values. The document also consists of indicators as to how well the student is meeting his/her goals and is updated on a regular basis. As such, the document can and should be adapted to included careers goals. Individual learning plans should,

...support college and career readiness by assisting students in the selecting courses that align to self-defined career goals, a process that facilitates career development and career exploration activities, and a portfolio document that organizes these course plans and career development activates as well as serves as a repository of record for personal accomplishments and workforce readiness skills. (Solbert et al., p. 502)

 The inclusion of career goals in an ILP can help raise an awareness of which high school courses are required to gain admittance to post-secondary, how to obtain the necessary qualifications for a skilled trade and what post-secondary institutions are suitable for specific programming. Teacher and school counsellor engagement in these documents is critical to ensure student success and should not be treated as an afterthought or burden in addition to regular teaching duties. Students should be regularly reminded about goals set early in the year so they can achieve goals that will help towards post-secondary, training and related career goals.

## Other Considerations

Vocational education training (VET) is another important consideration for career counselling. Canada’s education system is historically rooted in a classical or liberal education dating back to the 17th century (Lyons, Randhawa and Paulson, 1991). Trade schools founded during this time were under represented in terms of the number of students training and the majority citizens viewed an academic education as an important means to serve their primarily needs. As such, trades and vocations took a secondary role (Barabasch and Watt-Malcolm, 2013). In the 19th century, the primary composition of secondary schools was dominated by the middle class especially in Ontario. Immigrants who came to Canada that were trained in the dual system of trades in Europe, found their skills did not transfer well. Even today, Canada continues to focus on a classical liberal education where vocations, skills and trades are considered less important than their core subject counterparts (Lyons, Randhawa, and Paulson, 1991). This line of thinking appears to be culturally entrenched in the national psyche where an academic education is valued over VET education.

Halpern (2012) supports Lyons, Randhawa, and Paulson (1991) and Barabasch and Watt-Malcolm (2013) notions, arguing historical happenings in North America have limited curricula and further states education is not responsive to how students learn nor does it integrate VET with core subject areas. For example, mathematics lacks specific objectives for reading or creating blueprints for a design. What is also lacking is that many subjects do not take into consideration an individual’s strengths and interests. School should function to “… help young people find the domains in which and means through which they learn best” and VET can serve that purpose especially in career programming (Halpern, p. 86). Creating change is not easy though because the existing system views VET with ambivalence. In preparing students for their role after high school, Halpern believes that adults serve a major role in terms of mentoring and counselling VET whether it be teachers, counsellors, school administrations, community member, influential adults and family. He calls for a reconceptualization of VET in which there is financial support in the development of curricula and programs to ensure integration with core facets of education. Halpern believes that VET is especially significant because technology is rapidly. Necessary knowledge and skills are required for individuals so they can adapt to technological advancements to compete on the international stage. A well trained labour force is necessary towards maintaining a global competitive edge.

Another consideration for career education is to develop entrepreneurial qualities in students as it pertains to their career choices. Ishiguro (2015) conducted a survey of 2600 high school students in Northern Japan to determine to what extent personal traits influence students’ entrepreneurial careers mindset. Ishiguro uses various entrepreneurial behaviours: “… task orientation; strong work ethic; a tendency to set challenging goals; and a planning orientation for achievement” (p. 46). Questionnaire results found that 70% of students are quite conservative and not entrepreneurial in terms of their personal role in the career decision process. This same group rated themselves as lacking confidence to take personal ownership and had difficulties identifying careers that interested them. Students who identified themselves as being creative, risk takers, goal orientated, and able to identify a future career, were considered entrepreneurial in nature.

Similar to Ishiguro (2015), Fabio (2014) found that students who are self-motivated and identify as independent are more likely to have career direction. Rather than use the term ‘entrepreneurial’, Fabio uses the term ‘intrapreneurial’ with ‘self-capital’ to describe students who are independently career orientated. Fabio defines intrapreneurial as persons who solve problems creatively and make decisions carefully or rationally in their personal lives while identifying possible career outcomes for the future. Using a sample of 171 participants in their last two years of high school in Italy, a questionnaire was administered that measured student ability to: identify self-capital; solve problems creatively; achieve objectives; and identify areas of deficiency in training or education. The longitudinal study showed scores that were high in various intrapreneurial categories were linked to career and employment success in later years. Reciprocally, students who had difficulty setting goals, making decisions or showing self-efficacy had difficulties with career choices and employment.

Ishiguro’s (2015) and Fabio’s (2014) studies are important because they identify attributes and qualities students need to possess in high school in order to be more successful with their career choices. Individuals who posses self-capital “… are better able to handle and succeed in a constantly changing labour market” (Fabio, p. 107). Teachers and counsellors should be encouraged to continuously have students identify and develop entrepreneurial and intrapreneurial attributes in order to prepare and be successful in their future careers. Although these two studies are international, they are helpful in a broader context since students face similar challenges in North America towards developing ‘career awareness’. Encouraging students to identify entrepreneurial or intrapreneurial values can make them more self-reflective, independent and capable to establish their own career direction while navigating the complex world of careers.

# Discussion

Based on the varying themes presented in the literature including: influences on student career choices; teachers and counsellors in career counselling; the role of technology and career assessments; special needs; and other considerations, there is no ‘one fits all’ solution about career education for youth. Career counselling and education should be a coordinated effort between school administrations, teachers and counsellors and draw on a number of approaches. Although technology is shown to be effective in providing career options based on personality and interest inventories, it is not a panacea. The in-person interaction between students, counsellors, and teachers add a human touch or professional intuition. School counsellors are more effective in their roles as career educators when they engage in additional career training and can access a support network. Although secondary schools face budgetary constraints, it may be helpful to assign a dedicated school counsellor, teacher or hire a career practitioner who can oversee career education duties providing occupational advice, organizing career fairs, bringing in guest speakers from professions or post-secondary representatives, keeping track of student portfolios from CALM or other career related courses, and coordinate registered apprenticeship or work experience programs. Teachers could collaborate more with school-wide career education efforts whether that involves taking their classes to career fairs or hosting guest speakers from industry or post-secondary to provide broader perspectives. A school’s administration could have a professional development day to discuss and create initiatives related to career education, which could involve planning a careers and trades day. This initiative should include the entire school population. Rather than have attendance to career fairs, guest speakers, resume writing workshops or career portfolio updates be an optional activity for teachers and their students, a school-wide careers day event could be made available for the entire school population and presented as an alternative learning opportunity. Buy-in may from teachers could be problematic as time constraints to meet curricular outcomes is always of concern but a school initiatives surrounding a career theme affords administration and educators to collaborate and plan accordingly. Ownership through feedback from educators can have a positive influence especially as it pertains to cultural diffusion of practices.

Although the Alberta Program of Studies (Alberta Education, 2018d) has specific learning outcomes in core subjects throughout the curriculum regarding careers, these specific learning outcomes do not register as a factor in the Bloxom, et al., (2008) study as influencers of occupations. Whether teachers pay lip service before moving on towards larger objectives is not known. Perhaps the curriculum is so robust in nature that there is not enough time to cover career investigations in core subject areas other than a brief mention. Curricular objectives may have competing interests for teachers and deciding what is the most important to teach and why can be a difficult task especially due to standardized exams or other constraints. The inclusion of career investigation of skills and trades careers is also within the CTS curriculum (Alberta Education, 2009). Career Technology Studies has the exploration of career pathways integrated within the one-credit courses and interestingly enough came in at number six as a career influencer (Bloxom, et al.). In this author’s opinion, one explanation to account for the discrepancy between core and CTS subject areas is courses that lend themselves to skills and trades make a better connection to real world occupations and assist with the career decision making processes compared with core subject areas. Because teachers are regarded as professionals, they must use their discretion in both core and CTS areas to determine the best way of delivering goals and objectives. As a result, career studies may take a back seat in subjects such as sciences, math, English or social. This trend may continue without professional development and school-wide initiatives that emphasises an interest in career education throughout the broad spectrum of courses offered at the secondary level.

The CALM course was found to be the most important factor that influenced student careers awareness (Bloxom, et al., 2008). Attention should be paid so the course is delivered in a meaningful way. Career Adult Life Management can be delivered as a stand-alone course or integrated with physical education and/or other courses at the high school level. What is not known is the effectiveness of this course after a decade of delivery because of changing funding formulas for Alberta high schools. High School Redesign is an initiative from Alberta Education (2018c) that provides schools flexibility in terms of how curriculum is delivered. For schools that follow the High School Redesign model, no longer is a minimum of 25 hours instruction required to qualify for funding for each credit. In addition, schools under High School Redesign are not funded according to the number of credits earned per student or based on a mark of 25% and above with an attendance rate of at least 50%. Without going into considerable detail, high schools under the redesign format are block funded as a school using a three year formula based on student population averages and other variables (Alberta Education, 2017). The program initiated by Alberta Education (2018c) is intended to create flexibility so schools can focus on other learning outcomes deemed important for teachers and can extent beyond curriculum. The implications from the provincial government initiative is that CALM courses may be cut short of time or viewed as an burden by teachers who may integrate the course into physical education. There still are merits from stand-alone CALM courses but schools are gravitating away from this approach. There is no formal data at this time to support a shift is occurring but based on my informal discussions with school counsellors and physical education teachers, the CALM course is being paired down during the regular school year. This theme is worthy of future consideration for study as a large gap exists in the literature within the province of Alberta. The CALM course should not be treated as an after thought in which students are required to complete a series of questions in a booklet without significant experiences from teachers, guest speakers or professionals or it may resemble the course from the UK study in terms of reported low engagements or perceived lack of helpfulness (Kidd and Wardman, 1999). The understandings of CALM outcomes should also be memorable or make an impression. Even after completion of the course, it is recommended that students continue researching careers and keep updated careers portfolios throughout high school rather than take a one and done approach only broaching CALM through a narrow window of instruction. Career Transition (CTR) courses are available at all three grades in high school (Alberta Education, 2018b) but the amount of time for instructional time is generally limited and teachers may perceive these courses as a burden. My experiences at a large urban high school where previous students were asked to complete the CTR one-credit courses were mixed. Students, after taking the CALM course, found that there was a lot of overlap and redundancy and expressed that they did not need to complete CTR assignments. Some teachers informally expressed dissatisfaction marking booklets. When this large urban high school became part of the High School Redesign initiative, the CTR booklets were eliminated as were CALM stand-alone courses with exception of summer school for students transitioning from junior to senior high. Nonetheless, the CTR one-credit courses are a resource but not much is known of their efficacy or whether they factored in the Bloxom et al. (2008) study.

Another worth-while study would be to examine the effectiveness of CALM or CTR courses a decade later to see if it parallels the Bloxom, et al., (2008)study and how that might compare to approaches from countries with internationally recognized VET systems in, for example, Germany or Finland. At first glance, it appears that countries that have a strong VET system do a much better job with career education and that would be an interesting comparison for investigation.

In terms of the using technology for career counselling, the Alberta Learning Information System (ALIS) (Government of Alberta, 2018) was developed using current provincial occupational information. Included are profiles for more than 550 careers including: salary or hourly wage averages; employment outlook; education or certificate requirements; related high school subjects; similar professions; and, other sources of information. For Alberta students, ALIS would be more helpful than O\*NET. The biggest concern I have regarding ALIS is difficulty navigating around the website. The Alberta Learning Information System underwent a significant redesign a few years back and teachers or counsellors using the website should familiarize in advance of using this resource with students. It is easy to get lost finding information because of the poor layout, long vertical scrolling pages and overwhelming number of links.

MyBlueprint (n.d.) is another important resource that school boards in Alberta have invested heavily in. This resource is an internet website and is thorough, well organized and easy to use for career planning. MyBlueprint keeps track of individual student profiles where they can complete surveys, plan high school courses, search post-secondary programs, apply for scholarships, create a cover letter or resume, and search for actual job positions in Alberta. The surveys within MyBlueprint are designed for students to identify personality traits, learning styles, interests and motivations. Possible careers are recommended based on the surveys but what is not known is how valid or reliable algorithms are that produce results. This web-based planner is excellent for students who want to chart their high school courses for possible post-secondary institutes, apprenticeships or pathways requirements. It contains a directory of all high school courses in the province of Alberta. The course planner can be updated on a regular basis and individual courses can be marked as complete while a status indicates whether a student has met the requirements of a diploma or what requirements remain for graduation. Students who wish to create a cover letter or resume can use the template, which provides instruction and exemplars for various fields (personal information, work or volunteer experience, education, etc). Perhaps the most powerful feature is the ability to search requirements needed from high school towards post-secondary institutes or apprenticeship programs around the country. This search feature in is an extremely useful tool as all links are current. This is especially important as it can be difficult to navigate individual educational institution websites for high school requirements to gain admissions. Overall, MyBlueprint is easy to use, well organized and contains powerful features which I highly recommend. The only issue I had with MyBlueprint in my CALM class is that it is difficult for some students with an Alberta Education student identification number to login. They are not recognized for reasons unknown; however, students can bypass the authentication process that requires a unique key and use this website to its full extent.

Technology should play a large role in relation to students with special needs who require an ILP or what is referred to as Learning Support Plans (LSP) in Alberta. Technology can aid school administrators, counsellors and teachers to enter and monitor student goals while periodically updating progress in which comments are easy to enter and communicate online with parents protected by a user identification and password for confidentiality reasons. The option to include career goals for regular or special needs students is important; however, the current LSP template used by the urban school district the author is employed, has no such option to select from. A recommendation to the district is they should modify their template to accommodate career goals as the research indicates it is valuable for students.

# Careers Subway Map

To support the literature review and the subsequent discussion, the Careers Subway Map that is included in Appendix A was created as a resource for schools. Teachers and counsellors require a multi-faceted approach in regards to career education. There is no magic bullet or simple solution as outlined in the Discussion section. The map was created as a tool that provides a significant amount of information on education and training towards a variety of careers. This information is represented in a visual format based on the London Underground Subway map (Transport for London, n.d.). As students may be hesitant or embarrassed to approach a career counsellor or teacher for career advice, a banner that measures 52” x 72” is prominently displayed in a high traffic areas in my large urban high school and in other high schools within the school district. Placing this map in a prominent location is intended to creatively draw a crowd and gain students’ attention. The full-sized copy can be downloaded at https://robpetrovic.wordpress.com/careers-map/ as a jpeg for viewing or Adobe Illustrator (.ai) format for editing and is available for anyone to use (Petrovic, 2018). The intent is for students to glean information from the graphic, conduct further research online and then connect with a teacher or counsellor.

The idea to create the Careers Subway Map was originally borne from an assistant principal and career practitioner at my large urban high school. Both individuals approached me with questions about how to create a visual that would provide cursory career guidance according to a student’s favourite subject. After doing a considerable amount of brainstorming and thinking, I thought the best way to represent the information was through a subway map. The subway theme was selected because it is a metaphor for a personal life journey. Perhaps the single most important decision for teens is what they want to do when they grow up. The decision is shaped by many factors such as an individual’s background, culture, interests, influences, achievements or aptitudes (Savickas, 2011a). Every decision towards discovering a career is a personal one and each decision matters. Much like the old adage that ‘life isn’t about the destination but rather the journey’, thus “Every Journey Matters” as reflected in the tagline beside the logo prominently displayed in both the Careers Subway Map and London Underground (n.d.). The journey is also personal much like taking the subway that carries one where he/she needs to go with purpose, to explore or look around depending on the stop.

The Careers Subway Map was also based on the London Underground (n.d) because students might recognize the visual as a map of sorts or identify the international logo for the London Tube map. The idea is to encourage youth to view from afar and entice them to interpret at a closer proximity. My assumption is that students interact with maps of different varieties as part of their schooling or as part of life in general and can deduce the graphic as a subway map. The ideal state will be to generate motivating interest thus individuals will spend time studying the map.

The Careers Subway Map has instructions clearly listed at the bottom, which direct students to: 1) to pick their favourite subject; 2) follow the particular subway line; 3) select occupations along the path to see the type of education or training required and amount of time needed to achieve a specific career; 4) use the website: https://alis.alberta.ca/ to search for additional information (Government of Alberta, 2018); and, 5) connect at the Career Center. At the bottom left of the map is a legend with a number of ‘subway lines’ representing subject areas including CTS clusters. Subject or CTS cluster lines intersect at various junctures representing how possible careers paths overlap. Each line colour or pattern was selected to differentiate an area of study such as math, sciences, English, social studies, etc... To further enhance the map for persons who are colour blind, and to increase accessibility, the image was de-saturated into greyscales and complimentary tones selected for discernable degrees of contrast. Also in the bottom left hand corner is a legend representing the type of education required at each stop but each with a slightly different circular symbol indicating whether the occupation requires a degree, diploma, certificate, apprenticeship, or on the-job training. The Careers Subway Map has a zone demarcation which represents the number of years of education required ranging from zero or on-the-job training, to six plus years of post-secondary. The London Underground (n.d.) map uses a zone boundary to calculate the amount of fare required based on distance travelled. When creating the Careers Subway Map, it was important not only to maintain a similar design to the London tube map for recognition but also functionality in analogous form.

Another important design intent I consciously made in creating the layout of the Careers Subway Map was to illustrate many occupations from skilled trades and vocations merging back to a career as a CTS teacher. I felt it was essential to depict how individuals with a journeyman certificate, diploma or other accreditation have an opportunity to become a CTS teacher via the CTS Bridge to Teacher Certification Program (Alberta Education, 2018a). Career Technology Studies is a very specialized area of teaching and as such, it is beneficial to attract individuals from skilled trades to the teaching profession; therefore, a CTS teacher is depicted as an important destination or major hub on the map.

Feedback to the Careers Subway Map has been favourable based on informal discussions with school counsellors and students. Counsellors have expressed a high degree of engagement. These individuals have observed students viewing the graphic in detail for periods of time that extend beyond a casual glance. During the summer school CALM class geared mainly towards students who are transitioning from junior high to high school, I use the Careers Map as an introduction before they complete their online career profilers. Students have indicated that they like the clarity and ease of use of the graphic in which they can quickly and effectively gather pertinent information. Some individuals have expressed that the visual gets them thinking about careers in ways that extend beyond their previous junior high experiences. Overall, the response has been positive and students indicated they find the Careers Map a useful tool of interest. This has been a worth while endeavour on my part, which has been shared around the district and beyond by the administration of my large urban high school.

As a note, the Careers Subway Map based on the London Underground (n.d.) meets copyright rules in Canada as it passes two distinct tests for educational purposes: 1) the dealings of materials include “… research, private study, criticism, review, news reporting, education, satire, and parody”; and, 2) the use of materials must be ‘fair’ in that short excerpts and not entire works are shared (Counsel of Ministers of Education, Canada, n.d., pp. 3-4). In the case of the Careers Subway Map, a similar design with identical logo with slogan are adopted from the London Underground and would meet the criteria for use for in education as a limited representation to the original copyrighted image.

# Conclusion

Careers education can be overlooked even though it is especially important in the 21st century. Considering that a workforce needs to be flexible and adapt to uncertain market conditions in an ever competitive globalized world, varying approaches that use both technology and professionals are required. Embedded in these approached is the awareness of family influence on youth’s career choices. It is worth pointing out that career education should not be reduced as binary or objectivist where the ultimate goal is to have students definitively declare future careers many years away from post-secondary or training. Rather, professionals in the field should advance with tacit understanding that students are dynamically reshaping their ideas on careers continually and meaningfully as careers education is imperative to the process. The role of the professional cannot be reduced to a series of online surveys that churn out possible future career paths based on an algorithm then disseminated by the flow of information into the student like an empty vesicle. Careers education should be significant and presented by teachers and counsellors so students are able to shape create purpose from their lives.

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# Appendix