SHOPTALK: WHAT MORE CAN BE DONE WITHIN P.E.I.'S PUBLIC SCHOOL SYSTEM TO PROMOTE FEMALES IN NON-TRADITIONAL SKILLED TRADES?

By

Allyson MacDonald

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Under the Supervision of Dr. Andrew Manning and Dr. Saad Chahine

Halifax, N.S.

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Abstract

The skilled trades have historically been dominated by men. Jobs in areas such as carpentry, welding, electrical work and plumbing have seen far more male participation than female. This is despite the fact that females have many strengths to lend to the industry. Beyond this, female participation can have positive effects on the economic welfare of families, communities, and provinces in Canada. There will be an increase in need for skilled trades workers in Prince Edward Island (P.E.I.) and the rest of Canada in coming years. Supporting the argument of encouragement for female youth to pursue skilled trades work, research has demonstrated that there is a high level of satisfaction that females (and males) can derive from working with their hands and producing tangible products. This study centred around the present state of public education in P.E.I. with regards to recruiting and retaining female talent in skilled trades training. This research project utilized surveys to measure the opinions of secondary Career and Technical Education (C.T.E.) teachers and school counsellors to identify initiatives these educators believe might be useful to improve recruitment rates. The resulting responses reflected the strong value participants place on access to female role models for students within the province, through various avenues such as media, course instructors who are female, and female guest speakers. Additionally, there was a theme of support for tapping in to the potential for peer influence, through facilitated peer shadowing and groups. Many participants in this study expressed a desire for specific professional development to better equip them to meet the needs of female students, and to deepen their understanding of skilled trades (counsellors). Furthermore, there was strong support evident in responses for all-female classes, especially at the introductory level. This

research discovered that a stigma remains firmly attached to trades work within the province, and this is evident within the educational system. These recommendations are important considerations in the endeavor to improve female involvement in the trades within the public educational system in P.E.I..

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Chapter One: Introduction

According to an article in *The Globe and Mail*, 93.4% of skilled trades workers in Canada were male in 2011 (Smith, M., July 14, 2014). Some would take this one step further and assert that if female-centered trades such as hairdressing and floral studies were removed from this picture, the rate of female representation in Canada's trades industry would be only 1 - 2% of those who successfully complete apprenticeships (McMullen et al., 2010). My initial reaction to this figure was of disbelief. "This is 2014!", I thought to myself, "surely these numbers are incorrect.". Sadly, they are not.

There is evidence of a pending shortage of skilled trades workers in many parts of Canada. A high retirement rate is forecast for the coming years, furthering this shortage. Many places in Canada need skilled workers, and find it increasingly challenging to attract and retain skilled and valuable workers. Women, although a heterogeneous group, have been noted for excellence in their trades work, and could be called upon to fill some employment gaps (Ericksen & Schultheiss, 2009).

Employers stand to gain from females' participation in skilled trades, and females who work in this industry report high levels of job satisfaction and personal fulfillment. Females who work in the industry have repeatedly stated their keen interest and pride in working with their hands and seeing the usability of something they constructed or modified (Dabke et al., 2008; Darmody & Smith, 2006; Madsen, 1999; Smith, L., 2013; Phillips, 2014). Beyond this, there are significant financial benefits resulting from female participation in trades, not

just for females themselves, but also for their families, communities, and Canada's economy (Nilsson, 2010). Why, then, are numbers remaining so low for female entrance into trades programs at the post secondary level, and what roles do secondary schools play in this scenario?

This study aimed to explore current beliefs of C.T.E teachers and counsellors in P.E.I.'s public school system regarding what more can be done within P.E.I.'s public school system to promote females in skilled trades. Within this study, the use of the terms 'skilled trades' and 'trades' will be used in lieu of 'non-traditional trades'. For the purpose of this paper, these terms will refer to trades that females do not typically participate in. Likewise, C.T.E. teachers that are referred to herein are those that teach courses (in relation to female enrollment). Thus, trades such as hairdressing, culinary arts, etc. should not be considered to be among the 'trades' that are being discussed in this paper. It is noteworthy that although there have been numerous studies examining the strides that females are making in professions such as law, dentistry, and medicine (Erickson et al., 2009; McMullen et al., 2010), research into the representation of females in types of blue-collar lines of work remains scant (Madsen, 1999). The overarching research question driving this study was: What do P.E.I.'s C.T.E. teachers and counsellors believe could be done within the province's school system to improve female participation rates in skilled trades? Specifically, the research questions addressed were:

1. What do C.T.E. teachers and school counsellors think is standing in the way of females taking C.T.E. classes?
2. What initiatives within P.E.I.'s public school system do these teachers and counsellors believe are working to promote females in skilled trades?
3. What do C.T.E. teachers and school counselors believe would be helpful in encouraging more female students into C.T.E. classes in P.E.I.?

Chapter Two: Literature Review

Research has concluded that the increase in female uptake in skilled trades has been slow for the last three decades. This Literature Review will provide an overview of themes emerging from studies in this field of study. It will look at the benefits of female participation in trades. It will address the barriers females have experienced to working in trades in the past, and what they experience presently. This review will also discuss the effect of barriers on females' sense of self-efficacy, what the major influences on female youth are in relation to their selection of post-secondary fields of study, and finally, what solutions have been suggested to encourage females to take up lines of trades work. It will also discuss the blue-collar nature of skilled trades work, and the stigma frequently attached to this line of work.

2.1 The Positive Impact of Female Participation in Skilled Trades

The studies which have delved into female involvement in skilled trades have highlighted the fact that females often enjoy trades work. Females frequently relish the chance to work with their hands and see a job through to completion. Similarly to males, females develop a sense of confidence and trust in themselves when they create an object with their hands. There is a sense of satisfaction and competence, and an enjoyment derived from the practice of combining intuition, mind, and body in work they enjoy doing (Dabke et al., 2008; Madsen, 1999; Smith, L., 2013). Smith has noted that "…what seemed most satisfying for Lynne [an interviewee] was that the world physically worked better because of her invention." (Smith, L., 2013, pg. 869).

At the high school level, it has been observed that students in C.T.E. classes [of both sexes] enjoy creating objects with their hands, and enjoy the relaxed nature of the atmosphere. This is in contrast to the heavily teacher-directed environment of their other classes (Darmody & Smith, 2006). They appreciate the freedom to move around and to create. Traditional skilled trades study integrates theory and practice very seamlessly (Bilboe, 2011).

Beyond the satisfaction that females can draw from their work, *companies* stand to gain from female involvement. Companies are increasingly in need of skilled-trades workers. Smith asserts that "Canada's labour market already suffers from an acute shortage of skilled workers - a recent report by C.I.B.C. suggested as much as one-fifth of the labour market does not have enough qualified workers" (July 2014, pg. 1).

According to Madsen, females have the talent to fill these vacancies, and have talent to offer, including the ability to provide conscientious work, with great attention paid to details. Furthermore, females often exhibit a high level of manual dexterity and patience in their work. They also often have a penchant for problem solving, are adept at following instructions, and are frequently cited as loyal and driven employees (Madsen, 1999; Roach-Lewis & Ronahan, 2012).

There have been additional findings that female customers often feel more comfortable dealing with other females, and that female employees generally demonstrate strong interpersonal skills and can shine in this area. This stands to benefit companies who are interested in doing their best to meet the needs of their customers. Females may also have

other life experiences or skills they can parlay into their work advantageously. One of Smith's interviewees, Eva, "…an interior designer turner cabinet maker, who designed domestic kitchens for private clients who were mostly women, found that her clients thought that [her] gender was a benefit. They thought that she could make better kitchens than a man because as a woman she would have spent more time in one." (Smith, L., 2013, pg. 867).

Madsen noted that some of the top characteristics employers wish to find in skilled workers include the ability to get on well with coworkers/clients, a desire to continually learn and develop, and overall reliability (1999). These are non-gender-specific qualities.

Furthermore, females have strong verbal abilities. In a study conducted by Wang, it was concluded that within the Science, Technology, Engineering, Mathematics (S.T.E.M.) field: "… among males and females with comparable outstanding aptitude in math, females are likely to outperform males in verbal ability…this pattern of ability differences may allow females more career choice than males and thus more opportunity to consider careers in both S.T.E.M. and non S.T.E.M. fields." (2012, p. 770).

Madsen points out that when young males take up work without an educational background, it is often in a trade, whereas their female counterparts are likely to accept employment in a low-paying position in child care, clerical work, or within the service industry (1999). When compared with employment in the service or clerical industries, females can make better wages in a trade with an expedited education and paid apprenticeships. As trades workers, they also are often granted union benefits (Dabke et al., 2008). According to Nilsson, trades

education can help to “reduce poverty, promote economic growth and increase competitiveness” (2010, pg. 251).

Beyond this, it has been shown that when females benefit economically from higher wages for their work, it falls in line that their families, communities, and the economy at large also benefit (Nilsson, 2010). Gates makes note that females reinvest their earnings into their family’s economic foothold at a rate of up to 10 times what males do. The ripple effects of this on a female’s family and community are vast. This reason alone is a strong motivator to have females earning as high a wage as possible (2014).

2.2 The Barriers Females Experience in Skilled Trades Work

Several themes have emerged in studies pertaining to what holds females back from skilled trades work; specifically what they dislike about their working environment and the industry.

While working on a job site, females have noted common frustrations, ranging from sexual harassment, washroom facilities which are not private or hygienically maintained, tools that are ill-fitted to their smaller frame, the encouragement of dangerous practices which have the potential to cause bodily harm, and overt discouragement from coworkers and management. Most managers on a work site are men, and this enhances the experience of feeling like an outsider. Many females report feeling like they are criticized for being too detail oriented, or slow, which, although it is mentioned here as a negative attribute, has also

been pointed out as a strength in producing quality work (Connell, 206; Darmody & Smith, 2006; Madsen, 1999).

Females have experienced challenges in obtaining work they are qualified to do, due to weak networking paths within the industry. They have spoken of the trades world feeling at times like a 'boys club', where jobs are obtained through contacts in the industry. They mention feeling at a disadvantage because their contacts are often not as well established in the trades community (Madsen, 1999).

Even at work sites where female employees are present, there may be subversive portrayals of sexism. There were women in Connell's study who experienced resistance from some male workers in taking instructions from a female, and others who occasionally experienced difficulty in reinforcing anti-discrimination and harassment rules, and the persistence of 'micro gender' roles within companies (Connell, 2006). Therefore, although the overt actions of the hiring company appear to support female advancement, sexism is still quietly apparent, given close inspection. As Gherardi and Pogio (2001) have stated, "women's entry into masculine domains triggers complex adjustments in which symbol gender dichotomy may be preserved while other changes are conceded" (as cited in Connell, 2006, pg. 838).

Affirmative Action has helped females make inroads into the trades world, but not without criticism. Many females who have had opportunities open up through affirmative action report feeling like they were put 'on the spot', and subsequently have had to prove themselves, or felt they had been met by resistance by some who felt they had moved up the

ladder too quickly, and that they were not deserving of a job but had gotten it anyway. Others [male and female] feel that the pendulum has swung too far in the direction of promoting females, and that it needs to balance out again (Connell, 2006). Madsen (1999) purports that this may in fact harm females' acceptance more than help it, especially if others feel that females are being granted special treatment. Possible alternatives would be to offer incentives, instead of regulations for employers, or possible subsidies or payroll deductions. These may entice employers in the industry to hire more female employees in a more proactive manner than a forced implementation (Ewen, 2011; Roach-Lewis & Ronahan, 2012).

Finally, the most commonly noted stumbling block for females working in skilled trades is the culture of inflexibility surrounding family obligations. Repeatedly, females have mentioned the challenging nature of long work hours, contract work, overtime with little foreword notice, limited sensitivity to pregnancy and maternity needs, and the demanding nature of seasonal work as it relates to children and childcare (Dabke et al., 2008; Ericksen & Schultheiss, 2009; Madsen, 1999; Medved et al., 2006). This has made trades work unrealistic for many females.

These negative work experiences lead to employee attrition, and often once females leave, typically they won't return. As Snyder notes, with regards to females in technical lines of work, "…these women are educated, highly trained, and weren't planning to quit. We're losing them anyway. And once we've lost them, we almost never get them back." (Snyder, 2014, Oct. 2)

2.3 Self-Efficacy and Social Cognitive Career Theory (S.C.C.T.)

Bandura et al. noted that it is common for people to gain much of their self-esteem from their careers, herein forming a sense of identity, as well as a confidence in their ability to succeed in future endeavours (2007). This is the theory of self-efficacy, and researchers who support the underpinnings of social cognitive career theory (S.C.C.T.) have extended this to posit that if people trust in their ability and skills in an area, this will increase the likelihood that they will continue to perform associated tasks. In other words, people have a tendency to gravitate towards tasks or jobs that they feel they are likely to do well in (Britner et al.,2007). According to Britner et al., "Individuals' perceptions of their competencies are powerful motivators that affect the choices they make, the effort and persistence they put forth, and the resilience they show in overcoming obstacles." (Britner et al., 2007, pg. 1052)

Van Houtte stated that females tend to have lower self-esteem levels than males beyond the point of adolescence. Furthermore, the self-esteem levels of students in technical/vocational programs of study are often lower than those enrolled in academic programs (2005). Betz and Hackett also determined that females' perceived self-efficacy levels are more noticeably affected by failures and successes than their male counterparts (1986). These are significant reasons to consider the importance of school counsellors' roles with female C.T.E. students at the secondary level.

Having 'primary control' over one's career and educational decisions is a key consideration when examining people's motivations. 'Primary control' envelopes the degree to which people have goals they set themselves and have worked hard to achieve. This influences a

person's self-efficacy and sense of directional purpose in life. It should come as no surprise that individuals who are lacking clear career goals are at risk of never completing college or university, and have a lower salary through the working portion of their lives. Heckhausen notes that, despite recent challenges for young adults to find work, having an academic goal and achieving it creates greater feelings of self-worth, and a more optimistic view of the future, lower depressive rates, and higher levels of satisfaction in life in general (2012).

Females with a high level of self-efficacy feel more personal power in their career choices (Lent et al., 2002). However, as Betz states, "Many women are socialized in such a way that they do not have access to the information necessary to develop the self-efficacy beliefs required to actively pursue male-dominated careers" (Betz, 1992, as cited in Britner et al., 2007, pg. 1054).

For females as well as males, a positive work life will have ripple effects into family and community. This will give staying power and satisfaction to many employees and will thus contribute economically to society (Bandura et al., 2001).

2.4 Vocational Anticipatory Socialization (V.A.S.)

Vocational Anticipatory Socialization involves the process of how people "… form expectations about careers, jobs, and organizations prior to entering them" (Jablin, 2001, as cited in Lucas, 2011, p. 97). Lucas further elaborates that children absorb information from a variety of sources and this ultimately leads them in particular career directions. An interesting aspect of vocational anticipatory socialization is that individuals aspire to that

which they are surrounded by, regardless of whether it's favourable or not. Thus, a child who grows up surrounded by uneducated livelihoods is likely to take up this line of work when they reach adulthood (2011).

According to Lucas, the profession one decides to undertake will have huge bearings on "salary, benefits, job security, opportunities for advancement, working conditions, level of autonomy and creativity allowed, risk of injury, job satisfaction, children's life chances, and more." (Lucas, 2011, p. 96). Therefore, deliberate and conscientious career considerations are very important in the final years of secondary education. The top influences affecting personal career choice can be generalized into five areas. It is important to note that these themes, or areas of influence, appear to be consistent, regardless of the culture or socioeconomic status of one's upbringing (Myers et al., 2011). These five influences are:

1. Educational institutions
2. Family
3. Peers
4. Part-time jobs or volunteer experiences while in high school
5. Media

2.4.1 Educational Institutions

A major influence on high school students' decisions to consider certain careers stems from their teachers and school counselors, as well as their overall school experience. Darmody & Smith propose that females are more keenly influenced by these teaching professionals than males (2006). The power of this influence [for males and females] can be witnessed as early as primary school, when students are often rewarded for acceptable behavior by stickers and candy. This socializes individuals from a very young age to strive for external validation.

Students have cited teacher support and acceptance as strong determining factors in their experiences as females in C.T.E. classes. It is recommended that teachers remain sensitive to both boys' and girls' needs in a classroom, as they can have different ways of learning and working within the space. In particular, educators are encouraged to be aware of the competitive nature among boys, and to organise their classroom and teaching in response to this (Hymlo, 2006; Van Houtte, 2005). Roach-Lewis and Ronahan point out the importance of C.T.E. teachers dealing with unacceptable behaviour on the part of male students, even if a female student says it's okay, and not to bother with it (2012).

If females tend to have lower self-esteem than males in general, and furthermore students who are engaged in technical-track courses also are at risk of having lower levels of confidence, the setting is ripe for counseling to help young females feel more positively about themselves and their decision to pursue a path in the skilled trades (Van Houtte, 2005).

Some females will refrain from enrolling in C.T.E. courses because they feel they are lacking previous experience that males have from growing up tinkering with things. Indeed, some educators believe this could be an advantage for females because they can start off fresh, without poor habits that have to be unlearned (Roach-Lewis & Ronahan, 2012). This is important for females to note. Counselling could help assuage these fears and help bolster their confidence at a key time in these students' lives.

Many females get into trades do so once they have been working various low-wage jobs for several years (McMullen, 2010). Perhaps some solutions will come forward for how to shore up this difference. The transition (from high school to post-secondary education) is very important, according to Heckhausen: "Such programs start with high school counseling and colleges' outreach efforts to high school seniors, but should also include stepping stone or bridge institutions such as community colleges and their articulation with four-year college curriculum requirements." (2012, p. 1397).

Hymlo ushers in the importance of maintaining realistic expectations of what will be required of individuals if they pursue certain career paths (2006). Perhaps this is a place where secondary school counselling and teaching can serve as a bridge to fill in gaps that might otherwise be missing.

2.4.2 Family

Family is found to bear a large impact on what career direction an individual is likely to take following high school. At home, exposure to role models while growing up is

important. Many females who currently work in skilled trades have noted that they saw a family member working on carpentry projects at home and therefore developed an interest (Dabke et al., 2008; Roach-Lewis & Ronahan, 2012). Further family influence comes from connections that family members [especially male] may have within an industry, which allows the opportunity to gain possible employment (Dabke et al., 2008; Madsen, 1999).

There are three modes of career messages children receive from their families while they are growing up: explicit, implicit, and ambient. Explicit messages could take the form of advice, sharing of family stories, mealtime conversation, and conversations about parents' workplaces. However, the messages children receive are often not explicitly presented. They could instead be implicit, or even 'ambient'. Implicit messages may take the form of general advice about work that is not specifically focused, or the sharing by parents of their own experiences at work (Lucas, 2011). The third type, ambient messages, include the experience of excluding children from particular conversations, or topics never being discussed (intentionally on the part of parents) (2011). More often than not, the topic that is not being discussed is *education* (in the case of blue-collar parents). Therefore, this may not take the form of parents explicitly saying "don't go to university"; however, a narrower set of options tend to be presented through conversation and modelling. Ambient messaging also includes the experience of seeing parents go off to work, and witnessing how parents deal with work-related challenges and successes (Lucas, 2011).

Lucas noted that, "blue collar parents – who punch time clocks, defer to bosses, and have little autonomy on the job raise their children in ways that emphasize respect for authority

and compliance with orders. In contrast, white collar parents whose jobs offer more autonomy raise their children to develop skills such as decision making, critical thinking, and initiative … this conditions children for occupations similar to those of their parents" (Lucas, 2011, p. 97). It stands to reason that if parents hold sexist views, it is easy for this to be socially reproduced as well. If parents are not educating their children about realistic opportunities that may be available to them, there is a gap where educational institutions can educate students about their options, and provide stable encouragement for them to feel the confidence necessary to explore these paths.

It has been noted that mothers are typically more verbal in their approach to guiding children. They are more likely to communicate directly in this way with their children, whereas fathers tend to lead by example (Lucas, 2011). Bradford et al. indicate that "the content of parental messages shaped the women's sex-role socialization, encouraged achievement, and set personal standards for success, all [of] which ultimately facilitated social mobility" (Bradford et al., 2001, as cited in Lucas, 2011, pp. 101-102).

2.4.3 Peers

While in high school, females are often influenced in their consideration of enrolling in C.T.E. classes by whether or not they see their female friends doing this (Darmody & Smith, 2006). All-female summer camps, as well as all-female introductory C.T.E. classes have had some success, and could be further developed.

It is important to note that females who are involved in trades work or courses have often commented that their experiences are not as isolating or negative as they feared they would be before they got into their line of work/study (Roach-Lewis & Ronahan, 2012). This could be a key point for the sharing of experiences and stories from female peers who are taking C.T.E. courses, as a way to encourage more females to consider taking these classes. School counsellors and teachers could help facilitate this conversation.

2.4.4 Job/Volunteer Experience

The opportunity to see a trade from the inside while in secondary school can be highly influential in a young person's life. Of particular importance for females in respect to this is seeing other females doing jobs that they might consider pursuing themselves. Apart from seeing female role models directly involved in work, the opportunity to gain inside knowledge through volunteer or work experience can have a lasting effect on one's career decision (Madsen, 1999; Myers et al., 2011).

2.4.5 Media

According to Bandura et al., television is a major player in the perception of gender roles (2001). More recently, this also includes social media such as Facebook, YouTube, Twitter, and Instagram, as well as printed media. The effect of this influence can be seen at a young age. By the age of 5, children are noted to self-monitor their communication, attempting to attain social acceptance (Medved et al., 2006). According to Darmody & Smith, "children are seen as developing stereotyped notions of 'male' and 'female' from what they see and

hear around them and they attempt to behave in ways consistent with these conceptions" (2006, pg. 275).

Increasingly in today's world, young adults are taking their socialisation cues from celebrities who are magnified by the media. This is in contrast to previous generations who sought guidance from historical figures, families, schools, and religious institutions (Hymlo, 2006). Therefore, it's very important to scrutinize the quality of these media heroes. Within Hollywood movies, female characters have historically been portrayed as needing to be rescued by male characters, whilst male characters were depicted as the ones who take action, and make things happen (or save the girl). What is needed, to foster leadership skills in females of the future, is a more positive depiction of them on the screen. According to Hymlo, instead of needing to be rescued, or being depicted as too irresponsible to accept roles of leadership, a different image ought to be inserted and promoted of females who are confident and capable of creating change on their own (2006).

In her study of 18 recent, popular films among American teenage girls, the majority of films depicted girls involved in (or striving towards) careers that are ideal-based, and not realistic. It was common to see a female character who was involved in a career related to celebrity. Furthermore, a majority of working mothers were depicted working as artists, but without the realistic backing of meeting challenges related to work or having to persist in the face of job adversity, or the financial restrictions that often result from being self-employed in an unstable field. Jobs in these films appear trivial and easy to come by (Hymlo, 2006).

Furthermore, the message to young females is that an unethical approach to work is rewarded.

Another important finding from Hymlo's research is that, in popular teenage films, school and educators are frequently portrayed as standing in the way of females achieving their dreams, instead of being a help. Many of the main messages of these films further support the idea of individualism over organizational structure, which, although it is not a negative message in and of itself, stands to have negative repercussions when it is parlayed into real life.

Hymlo stresses the importance for films to depict females of all backgrounds and ethnicities in popular film, and to provide positive modeling of characters who are able to meet challenges and overcome them by developing skills, and through using their own intelligence and resources, instead of needing to be rescued, or otherwise living in a fantasy-land inside their heads. Unfortunately, as Hymlo expresses, "The target audience for the films may be drawn to the formulaic films rather than to films likely to challenge audiences by presenting more complex messages." (Hymlo, 2006, p. 181).

Even this year, in 2015, the Academy Awards have been criticized for a dominance of white-male problems in the leading films. This is not surprising, considering that 77% of the academy members (the individuals who are responsible for nominating films) is comprised of males. Furthermore, the vast majority of film directors continue to be male, with only 4 female directors ever being nominated in the best director category, with only one winning

(Kathryn Bigelow won in 2009 for *The Hurt Locker*). This year, not a single one of the cinematographers, screenwriters, or directors contending for an Oscar is female (Wilkinson, 2015, Jan. 27).

These five influences in V.A.S. point largely to what career path an individual will undertake.

2.5 The Stigma Attached to Trades Work

One challenge in attracting more females to study or work in skilled trades has been the stigma traditionally attached to trades work. Among both males and females, trades work has been considered to be for those who can't do much else academically (Darmody & Smith, 2006; Madsen, 1999). Many people believe that trades work offers "poor pay, status, and reward" (Davis, D.J., 1987, p. 283).

Madsen argues that education is needed around the way skilled trades are perceived; that trades work needs to be promoted as being a feasible way to earn a decent living, and that they offer employability, and the opportunity to work in different geographic locations (1999).

Some countries in Europe promote skilled trades much more favourably than Canada typically has. In Norway, Finland, and Germany, skilled trades are seen as positive career paths to pursue. Programs in these areas are highly regarded, funded, and attended by bright young adults. In fact, in Finland, 45% of students choose to study a skilled trade (technical track), rather than pursue an academic path (Phillips, 2014).

In Darmody and Smith's article, the point is made that trades-track education is seen as more acceptable for students from working-class backgrounds, in particular males (2006). Hymlo's study echoes this point, indicating that in many films, blue-collar work is something temporary and to be left behind. In contrast, white-collar lines of work are something cast in a favourable light (2006).

Trades work is often viewed as "a poor cousin in the educational hierarchy", according to Bilboe (2011, p. 258). Bilboe further goes on to say that [in many parts of the world] the perception of job prospects is that they are more limited within the trades than when one has a university education. The social perception of trades work as low-wage, and undesirable is in need of examination. The skilled trades are employable and people can make good money while working in the industry.

2.6 Established Recommendations to Increase Females' Participation in Skilled Trades

Studies have pointed to the importance of reaching out to children to pique their interest in the trades at an early age. It has been shown that by the ages of 9-13, students will have constructed a perception of status and social ranking, and begin to exclude possibilities for themselves based on this (Ericksen & Schultheiss, 2009).

Suggestions have been made for ways to reach youth through a variety of [V.A.S.-based] sources: teachers, counsellors, parents, administrators, policy-makers, friends, and media (Britner et al., 2007). It has been commented that around grades four-five is an ideal time to

start exploring the field of trades work with students (Ewen, 2011). Educators are key in facilitating exposure to role models, guest speakers and experiences.

Ericksen & Schultheiss propose that secondary school counsellors help prepare females for dealing with feelings of isolation, their [often unfounded] fear of mathematics, and equip them with the necessary skills to deal with sexual discrimination and harassment (2009; Roach-Lewis & Ronahan, 2012). Furthermore, counsellors and educators can help arrange access to job shadowing experiences, and help students uncover their talents, skills, and values (Ericksen & Schultheiss, 2009; Lent et al., 2002; Tang, 2009). Madsen recommends that C.T.E. teachers remain aware of what issues are likely to plague their female students, and prepare them accordingly (1999). Ewen stresses the importance of training and counseling to help prepare females for male-dominated work (2011).

Some schools offer female-only C.T.E. classes, and reaction to this is mixed. While some people hold the belief that females need to be prepared for the 'real world', others argue that this model is of high value, *especially when female students are just starting out*, to allow them time to get comfortable with the equipment and materials (Madsen, 1999). Wang proposes that all students could benefit from having a work and classroom space that allows them to create in a playful manner, which are integral components to meaningful learning (2006).

Within education, school administrators are influential beyond deciding whether or not to offer some classes as girls-only. They can work to establish timetables that "either reinforce

or challenge existing gendered patterns of subject take-up" (Darmody & Smith, 2006, pg. 290), and they can choose to frame course descriptions in ways that appeal to many students. Beyond this, administrators can strive to ensure that their staff are welcoming and encourage smooth interactions between teacher and student. At the board or department level, decisions surrounding the allocation of funding for offering and promoting C.T.E. programs are important (Darmody & Smith, 2006).

It has been noted that financial support is instrumental in facilitating post-secondary training for females in skilled trades programs. This may be in the form of bursaries, scholarships, loans, and programs such as Skills Development (Ewen, 2011; Madsen, 1999).

Comments from female research participants who work in skilled trades include the following: they would like to have sexual harassment policies posted on workplace walls, and posters depicting images of women working in trades, serving as role models. They also deeply desire more workplace flexibility around balancing work and family responsibilities. Perhaps offering staggered start times for work, or a results-based approach to work would make work life more manageable for adults with family responsibilities (Roach-Lewis & Ronahan, 2012).

Additional requests include having increased access to tools which are appropriately sized for women to use, that there be more support for women to advance to managerial positions, and that counselling be available for female employees to deal with the challenges resulting from being a female in a male-dominated industry. One program which has been noted for its

success is the buddy system, in which new female employees are partnered with another female or other worker in the company who has a positive attitude towards women working in their field (Britner et al., 2006; Ericksen & Schultheiss, 2009; Ewen, 2011; Darmody & Smith, 2006; Dabke et al., 2008).

Efforts on the part of employers to work with the strengths of their employees often pay off. There is technology that can help in the heavy-lifting aspect of some jobs (forklifts, for example), and employers or site managers can otherwise find creative ways to work around some of the heavy physical demands. As one participant in Roach-Lewis & Ronahan's study points out, "when we have a heavy load to lift, I just make sure my female employee is busy doing something else. I don't draw attention to this by saying 'You can't do this'. Also, she is strong in areas that my male employees are not. She's well organized and one of my best workers. So I focus on what she can do, rather [than] what she can't" (2012, pg. 11).

Some local initiatives have been proposed in P.E.I.. One of these projects is offered through the P.E.I. Residential Construction Sector Council. It aims to involve more females in trades through a mentorship project that encourages females to pursue employment in residential construction. Another, through the Construction Association of P.E.I., seeks to establish an all-girls carpentry class, wherein high school students do [paid]construction work in exchange for co-op credits and hours towards apprenticeship (Roach-Lewis & Ronahan, 2012). TradeHERizons is also very actively attempting to encourage more females into the trades and technology sector, in conjunction with Canadian Women in Technology (CanWIT). The funding for these programs, however, remains inconsistent.

Some recommendations that resulted from research carried by the Women's Network include an effort to provide a local job bank which is specifically targeted at females who are looking for trades work, and potential online tools allowing females [and males] to see what the expected wages and job descriptions are of different trades. This could be useful for high school counselling. Another recommendation for C.T.E. teachers to consider is meeting with new female students and parents at the beginning of each semester to inquire how they might best meet the needs of the student, and to clearly outline what to do if she should encounter difficulties while enrolled in class (Roach-Lewis & Ronahan, 2012).

Further research into this area is needed. "Given the relative dearth of research with this population, and the need to improve the working lives of all women, scholars are encouraged to explore the personal and working experiences of women pursuing trades and construction careers. Further research on the career development and choice process of non-college women with interests is clearly warranted" (Ericksen & Schultheiss, 2009, pp.83-84).

Connell underscores the importance of bringing these suggestions into everyday practice, outlining that "gender equity is likely to be successful to the extent that it ceases to be a specific policy, pulled off the shelf from time to time, and becomes embedded in organizational culture" (Connell, 2006, pg. 847).

The literature reviewed for this study points to a need for a more concerted effort to recruit females into lines of trades work. Females have multiple strengths to lend to trades work, yet there are still valid barriers standing in their way. This study aims to identify what initiatives

arising from other studies within this field might be adopted by P.E.I.'s educational system in an effort to promote females in trades.

Chapter Three: Methodology

3.1 Introduction

This chapter describes the methods that were used in this study to address the research question: What more do C.T.E. teachers and counsellors believe can be done in P.E.I.'s English Language School Board to promote females in skilled trades? I will first reiterate the main purpose of the study and situate myself as the researcher. I will then go on to describe the methodology and philosophy behind the nuances of conducting this research. This will be followed by a discussion of the ethics requirements for this study. I will further discuss the population that was selected to participate, and my reasoning for selecting this group. Finally I will introduce the specifics of how data was collected and subsequently analysed in this study.

3.2 The Research Question

The central hypothesis driving this data collection was that there is much more that can be done in P.E.I.'s educational system to promote females in trades. This can help raise their socio-economic status, and their sense of self-efficacy. This holds potential to bear ripple effects within their families and communities. Further, having a stronger workforce can help to enhance P.E.I.'s economy, and fill important shortages in trades work with upcoming retirements on the horizon. The surveys aimed to discover: what more do C.T.E. teachers and counsellors believe can be done within P.E.I.'s public school system to promote females in skilled trades?

My interest in this area of study stems from an inherent desire to see females have the same opportunities available to them as their male counterparts. I am also intrigued about the subject of student engagement. I wish to learn more about ways that students who may not fit the typical academic model can find their school experience enjoyable and fulfilling. Thirdly, in my spare time I enjoy picking away at hands-on projects, and know the enjoyment that is derived from seeing a piece through to completion. These three interests intersected to a meeting point wherein I'd like to discover if there is more that can be done in P.E.I.'s public school system to engage a wider swath of students and open doors for females.

3.3 Research Method

I chose to conduct my research using an online survey, available through SurveyMonkey.com. There were three types of questions asked in the survey, those designed to collect demographic data (e.g. gender, age), those designed to elicit opinions using a multiple choice format (e.g. What do you think are important barriers to females entering trades work?), and those designed to produce a response using an open ended format (e.g. What do you wish board-level decision makers knew or were sensitive to with regards to female participation in C.T.E. courses?).

Two separate surveys were created, one for C.T.E. teachers, and another for counsellors. While there are several common questions to both surveys, there were specific questions intended to explore the different positions that C.T.E. teachers and counsellors hold in the school system. For example, I asked counsellors how often they work with students

surrounding career considerations, and I asked C.T.E. teachers what would help them better meet the needs of the female students in their classes.

3.4 Construction of the Survey

The questions were generated as a result of assimilating details from literature reviewed for this research. I wanted to know how the participants perceive the elements of V.A.S. to affect the decisions of female students of whether to pursue trades classes or not. I also was curious to know what training the teachers and counsellors have received, if any, in meeting the needs of these students and working with them in career decisions pertaining to skilled trades. Furthermore, I wished to gather their opinions and suggestions for ways to improve our province's public school system to include a maximum number of female students in trades classes.

The surveys took approximately fifteen minutes for educators to complete. The questions centred around the following main themes:

1. Basic demographic information – age, sex, experience in teaching, experience in industry, urban/rural/suburban, etc.
2. General information about their students – what courses the students typically take, what their needs appear to be.
3. What programming is presently in place that appears to be working.
4. What these educators wish board-level administrators could be aware of.
5. What the participants believe are the important influencing factors pertaining to Vocational Anticipatory Socialisation (V.A.S.).

6. What initiatives these professionals believe could be useful to recruit and retain more females in trades training and work.

3.5 Sampling Frame

The population that was selected to take part in this study was comprised of C.T.E. teachers and secondary school counsellors who are presently employed by the English Language School Board (E.L.S.B.) in P.E.I. I decided to target secondary-level teachers because this is a prime age that students are exploring areas of interest and making decisions about careers to pursue, and having initial or expansive experiences with trades. I wanted the opinions of these educators because, in their experience, they may have noticed trends or patterns within the school system or trades industry.

This population was chosen with hopes of uncovering some opinions of those who are presently within the field, so they can reflect ideas which are current and provide an insider's viewpoint

The French school board was not invited to participate because I wished to work only in English for this study, and the numbers of C.T.E. educators and counsellors are scant in the French Language School Board within in the province.

Others who were not invited to complete the survey include teachers of C.T.E. courses that typically see high female participation (i.e. culinary courses). Furthermore, instructors in post-secondary institutions (i.e. Holland College) were not contacted for this study, nor were

school principals and other administrators within P.E.I.'s school system. Despite a desire to know the opinions of these other groups, my priority was to keep the focus of this study concise.

The individuals who were invited to take part in the survey are all currently employed by the E.L.S.B., and include teachers of C.T.E. courses at the secondary level in P.E.I.. This includes those who teach woodworking, carpentry, welding, and automotive courses. School counsellors working at the secondary level in P.E.I. were also invited to participate.

3.6 A Note on Ethics

I was using human participants to complete my research, and was therefore required to obtain ethics clearance from Mount Saint Vincent University's (MSVU) Research Ethics Board (REB), as well as ethics approval from the ELSB in P.E.I.

I received tentative ethics clearance from M.S.V.U.'s R.E.B. on April 15, 2015. I then obtained ethics clearance from the P.E.I.'s English Language School Board. This was a relatively efficient process, and I received permission from the ELSB to carry out my research on May 19th. My final notice of clearance from MSVU's ethics board came two days later, on May 21st.

3.7 Data Collection

Emails containing letters of invitation and informed consent, plus a link to the surveys were sent out initially on May 28, 2015. A follow-up letter and link were sent one week later.

These were sent directly to secondary school counsellors in P.E.I. via Groupwise, the professional email hosting site for educators in P.E.I.. An email with the appropriate attachments and link was sent to C.T.E. teachers via the head of the P.E.I. Industrial Technology Association, who then circulated it to the appropriate teachers within the province.

3.8 Data Analysis

I started by reading through the collected data, and looking for salient themes. I found the mean and standard deviation of the multiple-choice questions. I then examined the open-ended responses to find areas of general agreement or disagreement, and categorized responses.

Chapter Four: Presentation of Data and Discussion

4.1 Introduction

This data reflects the responses of seven participants in this study. The response rate was 14% of educators who were invited to participate. It was hoped that the response rate would be higher than this, but the timing of the study made it difficult to re-issue the survey as teachers were on summer break. Because of the sample size, descriptive results are presented in this chapter.

The results of this survey are presented in two parts. First, demographic data are described and then data from the questions on the survey are presented. The questions were aimed at eliciting respondents' opinions on what more can be done within P.E.I.'s public school system to recruit more females into skilled trades. This is organized around six key themes from the data.

4.2 Demographic

A total of seven of the 58 C.T.E. teachers and secondary school counsellors with the E.L.S.B. invited to participate in the study completed the survey. The respondents who completed the surveys were a mix of male and female. Five participants were female, and two were male. They had an age range from 25 to over 65, and cited English as their first language. Three of the educators were located at rural schools, one at a suburban school, and three at schools in an urban setting.

The participants held a variety of educational degrees, diplomas, certifications, and work experience. All participants had at least one university degree. Six of the respondents had a second university degree, and six had a third degree (four of the counsellors and a C.T.E. teacher had an M.Ed., and one counsellor held an M.Sc. degree in psychology). None of the respondents held a red seal certificate (this is awarded to trades workers after an average of four years of work/study in a trade and gives them a distinction that permits them to work anywhere in Canada, acknowledging a high level of expertise), however three participants had an additional diploma. These diplomas were in inclusive education (counsellor), tool and dye making, and fine woodworking (C.T.E. teacher).

Both C.T.E. teachers came from a background of cabinetmaking and construction. Four of the counsellors have worked in the field of education for more than 11 years. Similarly, the C.T.E. teachers had been in education for a relatively long time, with both respondents indicating they've been teaching for more than 21 years. Two of the counsellors had been counselling for fewer than six years, with the others having four of them been in counselling for 6-15 years; only one respondent indicated they have been counselling for more than 20 years.

4.3 Thematic Analysis

There were three types of survey items intended to extract educators' opinions on potential changes within P.E.I.'s public school system to increase female participation in skilled trades. These three types of questions were likert scale responses, multiple choice answers, and open-ended responses. Likert scale responses were analyzed using means and standard

deviations, and centred around the questions of what barriers are currently preventing maximized female participation, what initiatives are believed to be helpful in this pursuit, and what changes participants would like to see take place in their school or region. This was done despite the small number of responses to give a graphic representation of this data. The multiple choice responses were analyzed by count (the number of responses to each choice) and the open-ended responses were analyzed thematically. This section of the report is thematically organized around topics based on constructs identified from the literature review. Each section contains a mix of the three types of data, and a discussion immediately follows the presentation of data for each theme.

4.3.1 Vocational Anticipatory Socialization (V.A.S.)

Vocational Anticipatory Socialization describes a process by which (young) individuals synthesize five primary influences (education, family, peers, media, and work/volunteer experience) in their lives, thereby leading them to choose a certain career path. There are many other rich points to be extracted from the data produced by this study in their relation to the five strands of V.A.S.

One question in this study asked participants to identify which barriers they believe are holding female youth back in P.E.I.'s public school system when it comes to pursuing study in non-traditional skilled trades. The responses to this question are organised by V.A.S. strand in the table below, and ranked from highest to lowest mean within each category. A score of five represents strongly agree, and one represents strongly disagree:

Table 1: Important Barriers to Females Entering Trades

	Mean	Standard Deviation
Education:		
Lack of cross-listed high school C.T.E. courses with other ones (such as Art) to increase the diversity of students	3.86	0.83
Lack of previous experience required for post-secondary programs	3.33	0.75
Family:		
Lack of family role models and exposure to seeing others working in or enjoying a trade or hobby	4.14	0.35
Lack of encouragement from family	4.00	0.93
Lack of education/information nights for the families of high school students who are enrolled or interested in taking C.T.E. courses	3.71	0.61
Peers:		
Lack of opportunities for peer shadowing	4.14	0.35
Lack of showcasing C.T.E. students' work within the school and community	3.86	0.83
Media:		
Lack of females presenting at job fairs and in brochures	3.71	0.88
Lack of news stories profiling initiatives/programs aimed at promoting females in trades	3.71	0.88
Lack of news stories that feature females who are working in trades	3.71	0.88
Lack of media advertising	3.67	0.94
Lack of posters/images in school which depict females involved in trades	3.43	1.05
Jobs/Volunteer Experience:		
Lack of mentors for new employees	3.86	0.64
Discrimination	3.67	0.94
The recruitment and hiring process	3.50	0.76
Lack of organized pressure on employers to accommodate family responsibilities	3.43	0.90
Lack of available employment	3	1.16

As the table suggests, the largest barriers cited that stand in the way of females getting into lines of trades work are: the lack of opportunities for peer shadowing, the lack of family role

models/exposure to seeing others who are either working in or enjoying a trade as a hobby, and lack of support from family.

There are some initiatives these educators believe are helpful in engaging more female students in trades classes and lines of work. The responses are organised in the chart below. 5 represents strongly agree, and 1 represents strongly disagree:

Table 2: Which Initiatives are believed to be Helpful in Recruiting More Females into Trades Work

	Mean	Standard Deviation
Education:		
Access to female role models (cross-listed with Family and Jobs)	4.43	0.49
Opportunities for job shadowing	4.14	0.64
Summer girls' camps where they can try out some skilled trades and meet others with shared interests	4.00	0.54
Female-only classes	3.86	0.83
Financial support in way of scholarships and bursaries	3.71	0.67
Family:		
Access to female role models (cross-listed with Education and Jobs)	4.43	0.49
Peers:		
Peer groups facilitated by counsellors for females who are enrolled in trades classes	3.29	0.88
Media:		
Advertising which features females working in trades or aimed at females	4.29	0.49
Jobs:		
Access to female mentors for new employees on a work site	4.14	0.64
Affirmative Action quotas	3.43	1.18

All respondents either agreed or strongly agreed that access to female role models is crucial in the endeavour to recruit more females into trades. Participants also placed high value on

seeing advertising which targets and features females in trades work, as well as having mentors available for females who are starting out in trades work or courses.

C.T.E. teachers value having female-only classes. Participating C.T.E. teachers in this study strongly agree that this is an effective method of recruiting and retaining more females in C.T.E. classes. There was more variety in counsellors' responses to this initiative. Participants also see the benefits available through peer shadowing and summer camps, which both allow first-hand experiences of what it's like to try a trade, and have proven successful in other parts of Canada.

Counsellors responded that the request for counselling from female students who have experienced discrimination or harassment in their C.T.E. class or on the job training has been low, and overall, the majority of females who take trades courses in high school have a positive experience. This information could be shared in peer groups, as a vehicle to shed light on what the experience is like. This could serve to help alleviate unfounded fears on behalf of those considering enrolling in C.T.E. classes. Further, participants acknowledged that peer-shadowing could be very helpful in alleviating apprehensions by allowing female students to gain an insider's view of C.T.E. classes.

Specific data from this study pertaining to each of the five areas of V.A.S. is presented below:

a) Education

Several suggestions emerged from the data for ways to strengthen the educational system in P.E.I. in promoting females in trades. One path to this end could be achieved through bolstering the skills and knowledge base of educators within the system. All participants in this study indicated they would like more professional development to educate them in ways to meet the needs of female students who are enrolled in or interested in taking trades classes. When respondents were asked to identify specific ways to do this, counsellors stated they would find it useful to be able to observe a Skills Canada competition, or to try their own hand at some of the trades, so that they have a more intimate understanding of the subject area. Some counsellors expressed an interest in having female guest speakers from the trades industry to come in to share their stories of what their experience has been like.

Other counsellors indicated they would like some enrichment in their understanding of body language, and familiarity with ways they might help female students develop the ability to project a confident presence in a shop class. Amy Cuddy was cited as a source for enhancing this knowledge, through her Ted Talks videos that address the power of body language. Amy Cuddy is a professor in the Harvard School of Business, and a public speaker specializing in the areas of stereotyping, discrimination, and the power of non-verbal behaviour. Three of the five participating counsellors responded that they feel they know enough about skilled trades to discuss them with students. This is in contrast, however, to the opinions of the C.T.E. teachers who took part. The C.T.E. teachers believe that counsellors are lacking this knowledge base.

Participating counsellors responded that they believe young individuals who are considering trades work need to consider what kind of lifestyle they would like to have. This is consistent with the findings of Dabke et al. (2008), Ericksen & Schultheiss (2009), Madsen (1999), and Medved et al. (2006). These researchers noted that females (as well as males) who work in the trades industry cite inflexibility surrounding family obligations as a primary source of frustration. Workers in this industry often have to work long hours, put in much over-time, endure challenging schedules that cause conflicts with childcare needs, and encounter frequent insensitivity to maternity and pregnancy needs. Educators are aware of these limitations and provide students with a realistic view of what to expect if they decide to pursue a career in the trades. This is in line with Hymlo's (2006) emphasis of instilling realistic expectations of what will be required of those who choose to pursue a career path in a skilled trade.

The participating C.T.E. teachers indicated they have never received any professional development training to enrich their skills to meet the needs of female students in their classes, and both expressed a desire to do so. It was noted by one of the counsellors that it is imperative for C.T.E. teachers to be strong leaders in their classes and that they demonstrate clearly that harassment will not be tolerated. One respondent replied that these teachers need to remain vigilant of how female students are treated by the male students in their classes. Another participant responded that inclusion needs to be explicitly taught and addressed in the class, so that it is regarded as everyone's responsibility to treat others with sensitivity.

This evidence of a desire for strong leadership skills in course instructors is in alignment with the findings of Hymlo (2006), Van Houtte (2005), and Roach-Lewis & Ronahan (2012), who agree that teachers need to be aware of the needs of female students in their classes, and they also need to effectively deal with unacceptable behaviour, even when a female student says it's okay.

It is interesting to note that C.T.E. teachers believe there needs to be more pre-emptive counselling to prepare female students for possible sexual harassment and isolation in classes and on work sites. 80% of the counsellors in this study indicated they have not done any preparatory counselling of this nature. Perhaps there is a way schools in P.E.I. can shore up this discrepancy.

b) Family

The counsellors and C.T.E. teachers who took part in this survey were in agreement that the influence of family carries a lot of weight when students are deciding what courses to take in high school. They cite having a lack of family role models as a significant barrier for females when they are deciding whether or not to pursue trades training. This exposure includes seeing others working in or enjoying a trade as a hobby. Frequently, lack of encouragement may be due to a residual stigma attached to trades work.

The survey responses to the suggested recommendation of hosting family nights at schools where students and their parents can try some trades had a mean score of 3.714. This reiterates the value of having family on board to lend their support and encouragement. An

initiative of this sort could help to open the minds of family members regarding the potential of working in or learning a skilled trade (for male and female students).

The participants in this study acknowledged that a key to success in this area of study, as for any other area of study, is possessing a keen interest in and passion for the subject matter. There is much support to get families involved in encouraging female youth in this area of study (Lucas, 2011).

c) Peers

Friends' opinions and course selections are very important to adolescents when they are considering which courses to take in high school. The counsellors who completed this survey highlighted the heavy bearing peers have on the decision for female students pursue C.T.E. classes or not. All of the counsellors who participated either agree or strongly agree this is a key factor for females who are considering taking C.T.E. courses.

The counsellors were more supportive of school-based peer group endeavours than the participating C.T.E. teachers in this study. In response to the value of peer groups facilitated by counsellors for females who are enrolled in trades classes, the responses of the whole group of respondents garnered a mean value of 3.29, with a standard deviation of 0.88. This indicates there is varying opinion on the value of peer groups, with much enthusiasm coming from counsellors and less value placed on this approach apparent in the responses of C.T.E. teachers.

Many counsellors believe peer groups could be very helpful in encouraging more females into trades classes, especially since the experience of female students taking C.T.E. courses is generally very positive. This could be spun into peer-related mentoring through peer groups, or facilitating female students speaking to other classes, writing blogs or having their stories posted outside shop classes or counsellors' offices. This echoes Darmody & Smith's (2006) point that females often do not consider or rule out taking C.T.E. courses because their friends and other female students do not do so.

It is possible that multimedia and technology might facilitate sharing the positives of enrolling in C.T.E. courses. This is a potential platform that facilitates sharing the message that high levels of personal satisfaction and low rates of sexual harassment are experienced by female students enrolled in many C.T.E. courses.

Roach-Lewis & Ronahan (2012) also wrote of the importance for females to hear real-life stories that reflect the positive experiences of females in trades work or classes, and to note that this is despite many of them having fears or apprehensions before commencing. If some females get this message early on, this might open doors for them that they would not have otherwise considered.

Participants noted, in agreement with Dabke et al. (2008), that it would be beneficial for female students to be aware of the satisfaction they can derive from creating things with their hands, and seeing a job well done. Further, the value of showcasing students' finished work was acknowledged in the survey results, as well as that of peer/job shadowing. This

indicates that educators are aware of the intrinsic value for students to share ideas, experiences, and finished projects with one another.

d) Media

All the participants in this study agreed that it is important for female students to be exposed to strong role models. Their responses were favourable to the use of media to feature females who are engaged in trades work. The salient avenues to this end include providing access to role models (mean=4.429), advertising which features females in trades (mean=4.290), news stories featuring females in trades (mean=3.714), and providing exposure to posters which depict females working in skilled trades (mean=3.429).

Within the realm of media, positive images of females involved in roles in television and films are vital (Hymlo, 2006). The further possibility of websites and blogs that support females in trades, and the use of current technology to connect females who might experience feelings of isolation in classes or on work sites are key ways to encourage more females into lines of work and study. The development of the internet has been instrumental in breaking down isolation and aiding to connect people in various geographic locations. The possibility of growth in this area stands to expand in the future and further break down isolation.

Participants in this study responded that creating more advertising featuring females working in trades or aimed at females is a worthwhile endeavour. Printed media, such as newspapers, brochures, posters could continue to point in the direction of depicting females working

outside of traditional roles. Schools can provide positive imagery in the way of posters with strong imagery that represents female participation.

e) Job/Volunteer Experience

The C.T.E. teachers and counsellors who took part in this study believe it is important for new female employees to have mentors they are paired up with when on a new work site (mean=4.143). This principle could extend to shop classes. Participants saw this as one of the most helpful ways to recruit more females into trades work, and reiterated the point made by Myers et al. (2011) that it is vitally important for job shadowing opportunities to exist. This allows female students (as well as male) the opportunity to gain a realistic view of what certain jobs may be like.

A lack of mentors on a job site is perceived as an important barrier to females entering trades (mean= 3.857). Other top barriers cited include discrimination (mean=3.667), lack of organized pressure on employers (mean=3.429), and the hiring process (mean=3.5). The perceived lack of employment had a large deviation (1.155), with a mean score of 3.

Responses to the question pertaining to the value of affirmative action as a possible avenue to recruiting more females into trades showed much variation. This suggested initiative received a mean score of 3.43, with a standard deviation of 1.18, indicating a wide spread in responses to this question. This reflects back to the findings of Connell (2006) and Madsen (1999) which indicate that perhaps there is a negative backlash associated with affirmative action initiatives, and that the merits of these efforts are not valued equally by all individuals.

In the future, it would be positive to see employers respond to the needs of their employees in a more meaningful way. Many females have avoided pursuing trades work due to insensitivities towards maternity needs within the industry, as well as a general disregard for childcare needs. Schedules within the trades industry often include long hours and erratic shift work. A mean score of 3.429 is representative of responses to the suggested initiative of seeing more organised pressure on employers to accommodate family responsibilities. This is increasingly important for male, as well as female workers.

4.3.2 Social Cognitive Career Theory (S.C.C.T.) and Self-Efficacy

Social Cognitive Career Theory (S.C.C.T.) and self-efficacy are closely connected to each other. The theory of S.C.C.T. (Britner et al., 2008) posits that individuals will naturally desire to pursue that which they do well at. It stands to reason that if an individual is studying or working at something that they do well in, their level of self esteem will raise, and they will hold a higher perception of themselves, seeing that they are capable and talented. This raises their personal level of self-efficacy.

In turn, this fuels them on to further work or study in this area, and the process continues, thereby raising levels of confidence and self-efficacy along the way, leading them in the direction of personal and professional success. Bandura et al. (2001), in their work, highlighted the importance of individuals feeling good about their careers, as this is a major area where a sense of self is derived. Britner et al. (2008) also acknowledge the importance of this sense of identity, self esteem, and propose that people tend to gravitate toward that which they know and can do well in.

If female students are given the opportunity to try something new to them in an environment where they feel very comfortable and free of harassment or being pushed aside by male classmates, it stands to reason that the chances that females will continue to pursue trades studies are strengthened. The respondents believe public schools in P.E.I. need to provide opportunities so females can gain confidence in themselves and develop their skill set.

The majority of counsellors replied that they focus on career decisions with students often to very often. Participating educators in this study believe that females need to bear the following in mind in relation to considering entering trades work: what type of lifestyle is this going to permit (same for males); how they are going to deal with opposition and prove themselves to be resilient in the face of this; how they will develop confidence in themselves.

Some of the key ideas that respondents believe female students should keep in mind when considering a career in a skilled trade include:

Table 3: Key Ideas Females Should Keep in Mind When Considering Trades

Category of thought:	Take introductory courses to get a taste	Lifestyle they can expect	Resiliency for dealing with opposition	Confidence in their skills and abilities	Keeping a passion for what they are doing	Many females don't consider it at all
Number of responses:	1	1	1	2	1	1

The general consensus is that there needs to be more positive talk of trades work in general, and exposure (first-hand) for potential students to know what trades work is like. Specifically, one counsellor commented that exposure to skilled trades need to be provided for female students so they have the opportunity to find a niche that becomes a passion. This

counsellor commented, “They need to keep in mind that they can do anything as long as they are interested in the area and have a passion for the trade.”

Allowing and encouraging female students to fully explore their talents and interests will bode well for their future sense of self, and can ultimately can lead to great contributions to P.E.I.’s economy. The more frequently females have a sense of primary control over their careers and lives, the more engaged they will be with their work, and this will lead to more role models in the workforce for young females who are growing up. This reinforces the importance the participants in this study placed on strong role models (Heckhausen, 2012). If females are given a chance to explore in an environment which is comfortable (for example, all female introductory courses), and not feel ashamed to ask questions or stumble along the way (Betz & Hackett, 1986), they can be spurred on to explore fields of study that were out of consideration for females a mere generation or two ago.

Bandura et al. (2001) highlighted the importance of exposure –for individuals to opportunities to develop a skill or interest and that this will lead to more and greater work in that area. Public schools in P.E.I. have the opportunity to provide female students with the chance to try their hands at something unique and gain a greater sense of mastery, achievement, and contribution.

4.3.3 Which Initiatives Are Currently Effective in P.E.I. Schools

The school system in P.E.I. currently has some initiatives underway that participants noted are helpful in encouraging more females to study skilled trades. In an open-ended question, participants identified initiatives they think are presently working well:

Table 4: What Initiatives Are Currently Working Well?

	Female-only Classes	Co-op Programs	Career Exploration Courses	Transition Programs	None
Number of Responses:	1	1	1	1	2

As the table indicates, C.T.E. teachers and counsellors in P.E.I. believe that the E.L.S.B. is currently helping to promote female participation in trades work through the availability of co-op courses, the offering of female-only carpentry and automotive classes, and the facilitation of the Transitions Program. Participants acknowledged current opportunities which are not specific to female students, but which promote trades-related study none-the-less. These opportunities include career information sessions, career explorations classes (these are offered in grade ten and feature many guest speakers and a Holland College tour), including many who work in a trade, having a Holland College tour, and programs offered through Skills Canada.

When participants were asked what areas they believe will experience the most growth in trades work in the coming 10-15 years, responses were varied. Carpentry garnered the most responses, however:

Table 5: Which Trades Will See the Most Growth in the Next 10-15 Years

	All	Carpentry, including finishing carpentry	Plumbing	Welding
Number of responses:	1	3	1	1

Bricklaying	Automotive	Electrical	Not Sure	Other
1	1	1	1	1

Additionally, finishing carpentry was identified by participants to be the area that will see the most growth in female participation in the coming 10-15 years. This could be an important niche for females, who tend to excel and thus gravitate towards finishing carpentry (Smith 2006). Secondary schools in P.E.I. currently offer a range of courses in woodworking and carpentry (more than other types of trades classes).

4.3.4 Recommendations Pertaining to the Education Strand of V.A.S.

The participants in this study provided responses to suggestions of possible initiatives the English Language School Board in P.E.I. could undertake. These desired changes are reflected in the chart below. These recommendations are represented from highest to lowest mean. A 5 represents strongly agree, and 1 represents strongly disagree:

Table 6: Changes Participants Would Most Like to see in Their School/Region

	Mean	Standard Deviation
Professional Development for counsellors to be able to effectively promote trades professions	4.14	0.83
More C.T.E. teachers who are female	4.00	0.00
An increase in the number of posters depicting females involved in trades displayed in schools	3.86	0.64
Increased opportunities for job shadowing	3.86	0.64
Professional Development in female instruction for C.T.E. teachers	3.86	0.64
Improved course descriptions to appeal to females	3.43	0.90
More female-only C.T.E. classes	3.40	0.49
Better scheduling of courses to avoid conflicts	3.14	0.83

The change educators would most like to see is more professional development, in particular for counsellors (mean=4.143). This is a higher score than professional development for C.T.E. teachers (mean=3.857). Participating counsellors acknowledged they would like to be more knowledgeable about the trades industry, and C.T.E. teachers would like them to be, also.

There was a high response rate to providing access to female role models. This could happen through an increase in the percentage of C.T.E. teachers who are female (mean=4, with a noteworthy standard deviation of 0), an increase in the number of posters depicting females in trades (mean=3.857), and through opportunities to shadow other students and employees on job sites (mentors could be either female or males who are supportive of females in trades work; this garnered a mean score of 3.857).

Although some of the educators who took part in the survey believe that administrators know enough to effectively promote the trades, some were undecided on this, and two participants stated they believe these administrators do not know enough in this area.

The participating C.T.E. teachers believed course descriptions in course handbooks could be modified somewhat to seem more appealing to female students. In contrast, counsellors believe the descriptions are fine as they are. Together, they had a mean score of 3.429 in response to this suggested initiative, with a standard deviation of 0.904. Particular suggestions from C.T.E. teachers were not included. Administrators could be more aware of the needs of female students when they are deciding on course offerings, descriptions, and scheduling options. For example, course descriptions in courses such as woodworking and carpentry could be tailored to pique the interest of female students who have a natural inclination toward this area of C.T.E. training (Smith, 2006).

The educators who took part also would like more sensitivity to time constraints some students might have in taking C.T.E. classes (mean=3.143). This is true in situations where students are involved in other specialties such as French Immersion or Band.

The suggestion of initiative to reach students when they are younger (as young as grade four) was positively responded to. One respondent was undecided on this topic; all the rest replied that yes, they see this as a worthwhile initiative to be considered in P.E.I. No participants disagreed with the possibility of an initiative of this sort. This ties in closely with the work of Ericksen/Schultheiss, who highlight the importance of exposing children to the trades at young ages (2009).

One counsellor responded that they wish administrators were sensitive to the value of having females try trades before signing up for courses. Possible avenues to this end include providing tours for female students of skilled trades college programs, and holding open houses, where females get a chance to try things in a hands-on manner. Another suggestion made was that there should be more discussion about skilled trades in non-trades classes.

There was a strong voice of support for implementing a summer camp for female youth, where they can learn about some specific skilled trades and connect with other females. There was a 2007 initiative of this sort in P.E.I. called 'Girls Exploring Trades and Technology Camp". It was funded jointly through Skills Canada, the Department of Education, and Service Canada. The main focus was carpentry, welding, and industrial design. The girls learned some theory, were exposed to many different careers within the trades, had guest speakers, and were given the opportunity to try some trades themselves. It was intended that the participants would be monitored as they grew older. This program was discontinued due to a lack of funding. Another initiative of this kind could be worth investing in, considering the high value participants in this study place on early exposure.

C.T.E. teachers mentioned time constraints they experience already, and one participant suggested that the school board or department of education could hire personnel to do some specific training for schools. They commented that, "Many times counsellors and teachers already have their assigned roles and curriculum and it is difficult to make time for more."

The overarching theme of what participants wish school and board-level administrators could be more acutely aware of is a deeper knowledge of the skilled trades sector in general, and a sensitivity to the needs and desires of female students within this framework.

4.3.5 Stigma

Literature as well as the data arising from this survey point to a persistent stigma attached to trades work in Canada. Individuals who pursue this line of work or study are perceived to have limited intellectual ability, from a lower "working" class, and with limited professional prospects. It follows a parallel line that trades teachers are perceived negatively within the school system, and this is partly cause and partly effect. The educational requirements of individuals wishing to teach C.T.E. courses have been inconsistent with those of other educators within the E.L.S.B. for many years. This is changing, but the stigma attached to trades workers has historically extended to trades teachers.

Almost all educators who participated believe that trades work is going to continue to grow in the future. One counsellor who participated in this study commented that C.T.E. teachers are perceived by many educators and members of the public to be "not real teachers". In P.E.I., certification requirements for C.T.E. teachers continue to be inconsistent with those required of other educators in the public school system. As one counsellor states, "We will struggle to have trades promoted in the current system until some of these underlying beliefs are addressed."

One participant responded there needs to be a more positive attitude towards trades work in general. They noted the perception of trades work to be a path for individuals to pursue who don't have what it takes to be successful in university. They look to administration for leadership efforts to help shift this perception within P.E.I.'s public school system.

One participant reflected a main point of Darmody & Smith (2006) very closely when they stated:

> ... [trades work is perceived as being] only for those who have lower grades and less potential to succeed at university. Students who are strong in math and science are often discouraged from entering a trade route or do not have space in their schedule if they want to 'keep all doors open to science at university'. This is often the way they are counselled by teachers and counsellors who are not really supportive of trades. These attitudes need to change.

Researchers such as Phillips (2014) have shed light on the international perception of trades training and work. Within some leading educational systems in countries such as Norway, Finland, and Germany, many students, including those who are academically very bright, are openly encouraged to pursue skilled trades training. This is in contrast to a pervasive level of general academic snobbery in Canada. As one counsellor stated, "It is my personal belief we will struggle to have trades promoted in the current system until some of these underlying beliefs are addressed."

4.3.6 Female-only Classes

There was a strong, consistent value placed on all-female classes woven throughout participants' responses in this survey. Participants acknowledged, as did Madsen (1999), that this is especially true for introductory level courses, when students are just starting out and

getting comfortable with tools and materials. One participant noted that there had been an initiative of this sort in their school, but it was discontinued because enrolment numbers were not high enough. Participating C.T.E. teachers pointed out that the school board and department will need to be patient with low numbers initially in a program like this, until momentum is gained.

One C.T.E. teacher commented that all female classes should be "…put on the books and heavily promoted to lower grades. Small class sizes will have to be endured by admin for several years until momentum is achieved." This teacher also believes that there needs to be some curriculum development for this, even if it's just at the introductory level.

Perhaps, as Connell (2006) notes, there will be some resistance to this, where individuals will feel that females are getting too many breaks or special opportunities, but it is evident that initiatives such as this could help to balance out the playing field and give females a solid start in an environment where they feel comfortable enough to explore and ask questions. Even when male students are simply trying to help by doing something for a female student instead of being helpful by encouraging her do to it herself, a negative impact is borne on female learning. One respondent noted that males in the class are sometimes act belligerently, show off, harass other students, or otherwise show little respect towards their female classmates.

It was reiterated by participants that females have many strengths to bring to and from the table when they participate in trades work. Participants noted, in agreement with Dabke et al.

(2008), that females need to be aware of the satisfaction that they can derive from creating projects with their hands, and seeing a job well done. The educators who took part in this survey noted that, from what they have observed, female students enjoy participating in C.T.E. courses. They typically are very detail oriented, maintain neat work stations, offer different perspectives, have a high level of creativity, remain open minded, are very organised, and have a lot to offer to C.T.E. classes. One participant pointed out that they wish board-level decision makers could be aware of the high level of personal satisfaction and sense of success female students derive from their experiences in trades classes.

Madsen (1999) and Roach-Lewis & Ronahan (2012) also noted typical female strengths that could be highlighted when considering why it's worth attempting to recruit more females into trades work. This can, in turn lead to a high sense of self-efficacy (Bandura), which then propels females to stay in trades work and thereby set an example for other females to follow. The counsellors who participated believe that trades work will continue to grow. One of the participants stated they believe, "that there will be jobs, and the pay will be good." Encouraging female participation in trades stands to help P.E.I.'s economic health, as well as Canada's.

Chapter Five: Conclusion and Limitations

5.1 Introduction

In this thesis, I investigated the perceptions of secondary counsellors and C.T.E. teachers in P.E.I. regarding what more can be done within P.E.I.'s public school system to promote female involvement in trades. I have summarized the results in this concluding chapter, organised under the following three questions:

> What is preventing females from participating in trades?
> What can be done to encourage more females to pursue trades?
> What can be done to support C.T.E. teachers and counsellors in meeting the needs of female students?

This is followed by a section on limitations and future implications.

5.2 What is Preventing Females from Participating in Trades?

There were several obstacles to female participation in skilled trades that were cited by respondents in this survey. The participating educators in this study indicated that a large contributing factor to low female enrolment in trades classes is a lack of role models. This deficiency may manifest itself through a lack of seeing female family members involved in a trade. Other ways include a shortage of female guest speakers visiting classes who work in trades, a low ratio of females depicted in posters and brochures who are involved in trades work, and a paucity of C.T.E. teachers who are female.

It was noted by respondents that the majority of female students who take C.T.E. courses have a positive experience, and find a great deal of personal satisfaction as a result. This is

often in the face of females having fears and apprehensions of what they anticipate the experience will be like before deciding to try a trades course. This message is not being maximized for students to hear, however; thus a pervasive fear exists for many female students who consider taking shop classes.

Participants also noted there is a lack of leadership coming from principals and board/department-level administrators to encourage females (as well as males) into trades-based courses. Respondents felt that these administrators need to be more knowledgeable about the trades industry in general, and that the level of esteem for this line of study and work needs to be raised. As one participant noted, "I don't think there is enough knowledge about the trades by administrators for either male or female students." Another comment came from a participant who indicated they had piloted an all-female carpentry course, but it was discontinued due to low numbers and "insufficient analysis of the initiative to ensure its continuation". It appears that a cohesive and consistent approach from administration to encourage female students to enrol in C.T.E. courses is absent. This is reflective of deep systemic inconsistencies in trying to edge females into the trades sector and to promote skilled trades in general.

The pervading stigma surrounding trades work is evident in the educational system in P.E.I.. One counsellor who took part would like to see a more positive attitude towards trades work in general. They stated that, "Many still will only encourage a trade route to those who they do not believe have the ability to be successful in university. This is true for both male and

female." Another comment arising from this survey that speaks to the perception of skilled trades reads:

> This survey specifically asked about trades for females. I think this is wonderful and hope it continues. I also believe C.T.E. support needs to happen for all. There are a number of educators who still believe trades are only for those who have lower grades and less potential to succeed at university. This is often the way they are counselled by teachers and counsellors who are not really supportive of trades. These attitudes need to change. There are also educators who believe 'trades teachers are not real teachers'. I have personally heard this comment. This is also reinforced through many of our decision-makers as policies for C.T.E. teachers are very different than for academic teachers. There is still discrimination of certifications…it is my personal belief we will struggle to have trades promoted in the current system until some of these underlying beliefs are addressed.

5.3 What can be done to Encourage More Females to Pursue Trades?

There were many insightful recommendations that arose from the survey data. There was a high rate of consensus on the value of exposure for female students to trades work and those involved in the skilled trades sector. This could manifest itself by having guest speakers in to speak who are working in the trades industry, providing the opportunity (such as through open houses) for females to try their hands at skilled trades before signing up for courses, and providing opportunities for job shadowing, as well as shadowing students who are enrolled in C.T.E. courses.

Many counsellors who took part see value in facilitating peer-to-peer opportunities through peer groups. This could be a platform to facilitate female students getting together to exchange ideas and stories of their experience of engaging in a skilled trade.

The value of peer communications extends to work sites. Many participants believe it is important for new female employees to be paired up with mentors when they do get into the

industry. These mentors could be female or female-friendly, and can provide much value to the experience of females who may be daunted when starting out.

The data from this survey revealed that an area of skilled trades work where females tend to excel in is finishing carpentry. They are noted for their general attention to detail, patience, creativity, open-minded approaches to problem solving, strong organizational skills, and the value of different perspectives. These strengths could be emphasized when efforts are made to recruit females into trades courses. Finishing carpentry could also be cited as a niche where many females may find success.

The suggested initiative of introducing the topic of skilled trades to younger students (as young as grade four) was positively responded to in the survey. This could help to reduce the trades stigma, as well as open minds to the possibility of becoming involved in this field of study for male as well as female students. An effort from P.E.I.'s educational system to reach students in this age bracket could pay off with higher female enrolment when students reach high school age.

Finally, the effort to have female students feel comfortable in classes was viewed as an important factor by participants who took part in this study. Many responses from C.T.E. teachers centred around this. This was communicated as a desire to see more all-female classes, at least at the introductory level. As one participant acknowledged, "All female classes need to be put on the books and heavily promoted to lower grades." This respondent went on to mention the importance of class size, stating that this should not be a deterring

factor to offering this option, indicating that, “Small class sizes will have to be endured by administration for several years until momentum is achieved.”

Another comment included, “I wish they [administrators] would consider the overall make-up of classes in this area. No father would want their daughter to be in the same classroom as some of the students I have to teach. All female classes, at least for the intro level, are the only answer. Some curriculum development for such a class would also be an asset.”

5.4 What more can be done to Support Counsellors and C.T.E. Teachers in Meeting the Needs of Female Students

The data from this survey clearly indicates that participants feel the need for some training for themselves to assist them in meeting the needs of female students who are enrolled in or considering enrolling in a C.T.E. class.

A common observation from counsellors was that they would like to know more about skilled trades in general. Some of these counsellors noted a desire to try their own hand at some of the skilled trades in a workshop, so they have a deeper understanding of some trades. The C.T.E. teachers who took part also believe counsellors need have a better knowledge base in this area.

Professional development for C.T.E. teachers could include workshops to develop strong leadership skills. The counsellors who took part commented that C.T.E. teachers need to have these leadership skills, and also need to communicate to their students that there will be no tolerance for harassment or discrimination in their classroom.

Moreover, it appears that participants in this survey desire strong directional leadership from the school board and department of education. One respondent commented, "It might be helpful to hire people to do this specific training for the schools. Many times counsellors and teachers already have their assigned roles and curriculum and it is difficult to make time for more." The initiative of instructional coaches has grown in popularity in recent years; perhaps this type of initiative could also include those involved in C.T.E. education.

5.5 Limitations

This study aimed to examine the opinions of educators in P.E.I. regarding present initiatives within P.E.I.'s public school system to encourage female participation in untraditional skilled trades. Unfortunately, the sample group was very small. Due to the limited number of responses to this survey, this study must be considered merely exploratory in nature. It would have been a more substantial study if there had been a wider representation of educators' voices. Further, this research reflects only the opinions of C.T.E. teachers and secondary counsellors. The viewpoints could have been extended to administrators, who also play a key role in the promotion of females in trades classes.

5.6 Future Implications

Future study in this area could delve more deeply into any of the three main themes that emerged from the data (what is preventing females, what can be done to encourage more females, and what support do C.T.E. teachers and counsellors need). Furthermore, it could be insightful to research the opinions of youth on this matter. It would also be interesting to compare P.E.I.'s initiatives with others across the country, or internationally.

It appears that there will continue to be a need within the industry for highly skilled, trained workers. One counsellor who participated commented that, "Everything I have read or been told points to there being a shortage of trades workers in the near future. I believe that both males and females will enter this field as there will be jobs and the pay will likely be good."

Seemingly, much of the challenge will be to increase exposure for female (as well as male) students. One participant made the comment that, "I don't think many consider it at all! The challenge is to get some of them to consider taking these courses."

It is encouraging to note that female participation in skilled trades is increasing. However, without some organised and focused changes, the rate of female participation stands to remain stagnant. It would be encouraging to know that female youth are provided ample opportunities to discover individual skills, passions, and ways to support themselves in fields they may have never considered in past generations.

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Appendix A: Questions on the Survey for C.T.E. Teachers

1. Are you male or female?
2. What is your first language?
3. How many years have you been teaching C.T.E./Industrial Arts?
4. Is your school junior or senior high?
5. Is your school urban, suburban, or rural?
6. What is the smallest class size you have?
7. What is the largest class size you have?
8. What percentage of your students would you estimate are female?
9. What trades are you trained in?
10. What do you teach, or have you taught in the past?
11. What education and training do you have?
12. How old were you when you started working in your trade?
13. How long did you work in the trades industry before becoming an educator?
14. What prompted this switch?
15. When you worked in the trades industry, what was your perception of the general attitude of employers with regards to hiring women?
16. What time period was this?
17. Do you currently work in the trades, i.e. during summer break or in your spare time?
18. What do you think are important barriers to females entering non-traditional trades work?
    a. The recruitment and hiring process
    b. Lack of available employment
    c. Lack of encouragement from family
    d. Lack of female role models who are working in the field
    e. Lack of media advertising
    f. Discrimination
    g. Lack of guidance from C.T.E. teachers
    h. Lack of mentors for new employees
    i. Lack of personal finances to pay for training
    j. Lack of previous experience required to get into post-secondary trades programs
    k. Lack of education/information night for the families of high school students who are enrolled or interested in taking C.T.E. courses
    l. Lack of family role models and exposure to seeing other working in or enjoying a trade as a hobby
    m. Lack of organised pressure on employers to accommodate family responsibilities (flex time, staggered start time, pay given for job completion instead of hours worked, increased job security, consideration for parental leave)
    n. Lack of cross-listed high school C.T.E. courses with other ones (Such as Art) to increase the diversity of students, and to increase their exposure to others with shared interests

o. Lack of opportunities for peer shadowing (of another student who is female or female-sensitive and enrolled in a non-traditional C.T.E. course
p. Lack of showcasing C.T.E. students' work within the school and community
q. Lack of news stories profiling initiatives/programs aimed at promoting females in non-traditional trades
r. Lack of news stories that feature females who are working in non-traditional trades
s. Lack of posters/images in school which depict females involved in non-traditional trades
t. Lack of females presenting at job fairs and represented in brochures

19. What do you think is important for female students to keep in mind when considering a career in a non-traditional skilled trade?
20. Which initiatives do you think are helpful in recruiting more females into non-traditional trades work?
    a. Affirmative Action quotas
    b. Government tax incentives
    c. Female-only classes
    d. Advertising which features females working in trades or aimed at females
    e. Access to female role models
    f. Access to female mentors for new employees on a work site
    g. Opportunities for job shadowing
    h. Financial support in way of scholarships and bursaries
    i. Peer groups facilitated by school counsellors for female students who are in non-traditional classes (either in or out of school) where female students can connect and exchange experiences and stories
    j. Summer girls' camps, where females from the age of nine and up can learn about non-traditional trades and connect with other females who share their interests
21. Have you received training or Professional Development with regards to working with female students to meet their needs?
22. What do you think needs to change about non-traditional C.T.E. classes to make them more appealing to females?
23. In the last ten years, has the percentage of female participants in C.T.E./Industrial Arts classes increased, stayed about the same, or decreased?
24. Do the tools, equipment, and resources available in your classroom suit the needs of female students?
25. What programming is currently offered through the E.L.S.B. that you believe is effective to recruit and retain female students in C.T.E./Industrial Arts classes?
26. What changes would you like to see in your school or region?
    a. Increased opportunities for student job shadowing
    b. PD for counsellors to promote trades professions
    c. PD in female instruction for C.T.E. teachers
    d. Better scheduling of courses to avoid conflicts
    e. Improved course descriptions to appeal to females
    f. More C.T.E. teachers who are female

g. An increase in the number of posters depicting females involved in non-traditional trades displayed in schools

27. Do you think it is useful to introduce the topic of trades work to students at a younger age, starting in grade 4?
28. What do you believe would help you, as an educator, better meet the needs of female students?
29. What are your thoughts on female-only classes – like, don't like, undecided?
30. Do you believe school counsellors know enough about the trades industry to be able to promote it as a viable option for female students?
31. What do you wish school counsellors knew or were sensitive to with regards to female instruction in non-traditional trades?
32. Do you believe school principals and board level decision-makers know enough about trades to be able to promote it [to] them as viable options for female students?
33. What do you wish principals and board-level decision-makers knew or were sensitive to in regards to female education in non-traditional trades?
34. What trades do you predict will see the most significant growth in female participation over the next 10-15 years?
35. Additional thoughts?

Appendix B: Questions on the Survey for Secondary School Counsellors

1. Are you male or female?
2. How many years have you worked in the field of education?
3. How many years have you worked as a counsellor?
4. Is your school junior or senior high?
5. Is your school urban, suburban, or rural?
6. What is your first language?
7. How long have your lived in P.E.I.?
8. What degrees, diplomas, or certifications do you have?
9. How often do you work with students surrounding career considerations?
10. Do you feel you know enough about the trades industry to sufficiently discuss it with students?
11. Do you offer counselling to female students who are considering work in a non-traditional trade with regards to dealing with possible feelings of isolation, discrimination or sexual harassment?
12. What type of Professional Development do you believe would be useful for you surrounding females and non-traditional trades work?
13. Have you received training or Professional Development with regards to working with female students who are considering non-traditional career paths or courses?
14. In your opinion, what is the experience like for females who take non-traditional C.T.E. courses in your school?
15. Do you believe more females are choosing to enter non-traditional trades now than in the past?
16. What are some unique abilities or skills you believe females can bring to non-traditional skilled trades work?
17. What do you think is important for female students to keep in mind when considering a career in a non-traditional skilled trade?
18. How do you think your school could encourage more females to take non-traditional C.T.E. classes, or consider a career in a non-traditional trade?
19. What do you wish board–level decision-makers knew or were sensitive to?
20. What do you think are the biggest influences for female students considering taking [C.T.E] courses?
21. Do you offer any preemptive counselling for students to prepare them for handling potential sexual harassment, discrimination, or feelings of isolation in class/on a work site?
22. Have you counselled female students who have experienced discrimination or harassment in their C.T.E. class or on-the-job training?
23. How useful do you think peer groups would be, where females who are in or interested in non-traditional trades can come together to share experiences and stories?
24. Do you think peer shadowing would be helpful, where females can shadow other students in non-traditional C.T.E. classes?
25. What do you think are important barriers to females entering non-traditional trades work?

a. The recruitment and hiring process
b. Lack of available employment
c. Lack of encouragement from family
d. Lack of female role models who are working in the field
e. Lack of media advertising
f. Discrimination
g. Lack of guidance from C.T.E. teachers
h. Lack of mentors for new employees
i. Lack of personal finances to pay for training
j. Lack of previous experience required to get into post-secondary trades programs
k. Lack of education/information night for the families of high school students who are enrolled or interested in taking C.T.E. courses
l. Lack of family role models and exposure to seeing other working in or enjoying a trade as a hobby
m. Lack of organised pressure on employers to accommodate family responsibilities (flex time, staggered start time, pay given for job completion instead of hours worked, increased job security, consideration for parental leave)
n. Lack of cross-listed high school C.T.E. courses with other ones (Such as Art) to increase the diversity of students, and to increase their exposure to others with shared interests
o. Lack of opportunities for peer shadowing (of another student who is female or female-sensitive and enrolled in a non-traditional C.T.E. course
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s. Lack of posters/images in school which depict females involved in non-traditional trades
t. Lack of females presenting at job fairs and represented in brochures

26. Which programs do you think are helpful in recruiting more females into non-traditional trades work?
a. Affirmative Action quotas
b. Government tax incentives
c. Female-only classes
d. Advertising which features females working in trades or aimed at females
e. Access to female role models
f. Access to female mentors for new employees on a work site
g. Opportunities for job shadowing
h. Financial support in way of scholarships and bursaries
i. Peer groups facilitated by school counsellors for female students who are in non-traditional classes (either in or out of school) where female students can connect and exchange experiences and stories

j. Summer girls' camps, where females from the age of nine and up can learn about non-traditional trades and connect with other females who share their interests

27. What programming is currently offered through the E.L.S.B. that you believe is effective to recruit and retain females students in non-traditional C.T.E. classes?
28. What changes would you like to see in your school or region?
    a. Increased opportunities for student job shadowing
    b. PD for counsellors to promote trades professions
    c. PD in female instruction for C.T.E. teachers
    d. Better scheduling of courses to avoid conflicts
    e. Improved course descriptions to appeal to females
    f. More C.T.E. teachers who are female
    g. An increase in the number of posters depicting females involved in non-traditional trades displayed in schools
29. Do you think it is useful to introduce the topic of trades work to students at a younger age, starting in grade four?
30. What are your thoughts on female-only classes (like, don't like, undecided)?
31. What do you believe is important for C.T.E. teachers to be sensitive to regarding female education?
32. Do you believe school principals and board level decision-makers know enough about trades to be able to promote it [to] them as viable options for female students?
33. What do you wish principals and board-level decision-makers knew or were sensitive to in regards to female education in non-traditional trades?
34. What trades do you predict will see the most significant growth in female participation over the next 10-15 years?
35. Additional comments?

Appendix C – Letter of Informed Consent

Research Office

INFORMED CONSENT

Background:
You are being invited to take part in a research study. Before you decide to participate in this study, it is important that you understand why the research is being done and what it will involve. Please take the time to read the following information carefully. Please ask me, the researcher, if there is anything that is not clear or if you need more information.

Risks:
The risks of this study are minimal, and are similar to those you experience when disclosing work-related information to others. The topics in the survey may upset some respondents. You may decline to answer any or all questions and you may terminate your involvement at any time during the survey by exiting the screen. Once you have clicked "Submit" at the end of the survey, your answers will be non-retractable.

Benefits:
There may be possible benefits for you, in way of a better understanding of the connection between gender and the choice to enter skilled trades.

Alternative Procedures:
If you do not wish to be in the study, you may choose not to participate by selecting "I Decline" or leave answers blank.

Confidentiality:
Every effort will be made by the researcher to preserve your confidentiality. To this end, I will ensure that physical and electronic data is kept secure at all times. Furthermore, to maintain anonymity, there will be no collection of identifying information. Each participant will have the opportunity to read the final copy of my thesis resulting from this research. Please note that Survey Monkey will be used for this survey. This online survey company is hosted by a websurvey company located in the U.S.A. and as such is subject to U.S. laws. In particular, the U.S. Patriot Act allows authorities access to the records of internet service providers. This survey or questionnaire does not ask for personal identifiers or any information that may be used to identify you. The websurvey company servers record incoming I.P. addresses of the computer that you use to access the survey but no connection is made between your data and your computer's I.P. address. If you choose to participate in the survey, you understand that your responses to the survey questions will be stored and accessed in the U.S.A.. The security and privacy policy for the websurvey company can be found at the following link: https://www.surveymonkey.com/mp/policy/privacy-policy/

Persons to contact:
Should you have any questions about the research or any related matters, please contact me (Allyson) at (***)***-***** or by email at _____. You are also welcome to contact my supervisor, Dr. Andrew Manning, at (***)***-**** or by email at _____.

Institutional Review Board:
If you have questions about how this study is being conducted and wish to speak with someone not involved in the study, you may contact the Chair of the University Research Ethics Board (UREB) c/o MSVU Research Office, at 902-457-6350 or via e-mail at research@msvu.ca.

Informed Consent

Voluntary Participation:

Your participation in this study is voluntary. It is up to you to decide whether or not to take part in this study. If you do decide to take part in this study, you will be asked to agree electronically to this consent form. If you decide to take part in this study, you are still free to withdraw at any time and without giving a reason. You are free to not answer any question or questions if you choose.

Unforeseeable Risks:
Every effort will be made to minimize risks and there are no physical, psychological, economic, or social risks anticipated in conjunction with this study. Anonymity will be maintained for all participants, and data will be carefully secured. The E.L.S.B. has granted permission for this study to be carried out, and supports the purpose of this research.

Costs to Subject:
There are no costs to you for your participation in this study.

Compensation:
There is no monetary compensation to you for your participation in this study.

Consent:
By clicking 'Next', you confirm that you have read and understood the information and have had the opportunity to ask questions. You understand that your participation is voluntary and that you are free to withdraw at any time before the survey is completed, without giving a reason and without cost. You acknowledge that you voluntarily agree to take part in this study. If you do not wish to participate, you may exit this screen now.

I have read the terms and conditions of this study, and by clicking 'Next', I grant my consent to participate in this research.

Halifax Nova Scotia B3M 2J6 Canada
Tel 902 457 6350 • Fax 902 457 2174
www.msvu.ca