Women in Skilled Trades and Science, Technology, Engineering and Mathematics (STEM) Occupations

Submission to the Standing Committee on the Status of Women

May 4, 2015
Unifor welcomes the invitation to make a submission concerning women in skilled trades and STEM occupations. Unifor represents 305,000 workers in Canada from coast to coast to coast. Over 40,000 of our members can be found in the skilled trades. They work in trades in every major sector of the economy.

We also have a significant number of our members working in science, technology, engineering and mathematics in sectors such as health care, aerospace, universities and telecommunications.

This Committee has asked for our input on the prevalence of women in STEM occupations and skilled trades; the barriers that women may encounter in getting into or staying in these occupations; and any promising practices to encourage more girls and women to pursue a career in STEM occupations or skilled trades.

**Prevalence of Women in STEM and Skilled Trades**

The committee has already heard about the gender breakdown in STEM and skilled trades from other presenters. The testimony heard by the Status of Women Committee in 2010 was similar to what has been heard here. We know that women are highly underrepresented in both STEM and skilled trades. Our membership breakdown confirms this pattern. Female members make up approximately one third of our overall membership. While it is difficult to estimate the number of female members in STEM occupations, we would estimate our female skilled trades membership at about 4%.

While women comprise 48% of the Canadian workforce, the Conference Board of Canada reports that typically less than 3% of all apprentices that are in the construction, automotive and industry trades are women. This clearly indicates that women are an untapped resource, poised to serve the future of both the skilled trades, and on a greater scale, the Canadian economy.

We know that women want to work in skilled trades. Each year we run a Women in Skilled Trades and Technology Awareness course and it is always full. Unifor has also recently partnered with St. Clair College and Women’s Enterprise Skills Training (WEST) in a program to bring women into the trades. There were 67 women in the 2014 awareness course. This number has grown and is already up to 75 registered for the 2015 course.

Looking to the STEM side, we know more and more women are graduating from colleges and university in science. Women represent 22% of college and 39% of university STEM graduates. However, this increased rate of graduation doesn’t translate into an equal representation across or within STEM occupations. Of the members we have working in STEM occupations; we see that there is a gendered pattern to the areas in which they work. For example, we represent a bargaining unit at McMaster University, which is known for its health-care and research. Our bargaining unit is 85% female and about 60-70% of the workers work in health science positions. More of the men work as Principal Investigators and more of the women in the more precarious research assistant role. This has an impact on retention as we will discuss later.
Barriers women may encounter in getting into or staying in these occupations

There are barriers at each stage of increasing women in the trades: 1) attracting women to the trades, 2) completion of apprenticeships, and 3) retention in the trades. For STEM occupations in our bargaining units, the barriers in retention are most visible.

Attracting Women to the Trades

It is important for women to see skilled trades as a career option. It is one thing to not choose a pathway; it is another, to not know that the opportunity exists. Our country’s infrastructure is built by trades, but women are not a part of it. The question is why?

Attracting young people to the trades is a challenge across the board. There is a lack of information about apprenticeships and skilled trades for youth at the senior elementary and high school levels. Even when there are presentations, examples of women in the trades are rarely used. The Canadian Apprenticeship Forum youth survey found that there is a negative perception of skilled trades among young people. The trades are often seen as second or third career choice.

Unifor has addressed the under representation, stereotypes, and lack of skills knowledge internally through education. The development of Unifor Women in Skilled Trades and Technology Awareness program (WSTTA) utilizes practical and hands on workshops to build confidence in our female members that the trades are open to women.

As noted above, of the 305,000 Unifor members, over 40,000 are skilled trades. Our trades are in the most technical areas of our economy. When we lose jobs in this area we lose skilled trades, which results in the loss of a transfer of knowledge. This means there is no longer an opportunity for skilled trades to mentor an apprentice.

Language and Terminology as a Barrier

Adjusting terms goes a long way in changing work environments from exclusive to inclusive. The term “non-traditional” implies that these jobs are not normally associated with women, and reinforces the negative notion placed on these occupations.

To explore this notion of exclusive language, Unifor conducted a survey of 500 women to better understand what the phrase “Women in Non-Traditional Occupations” meant to them. Participant responses highlighted how language reinforces gender bias. For example women associated the term with “women doing men’s work”.

A literature review conducted for this survey indicated that there is no internationally standardized definition of what constitutes a non-traditional occupation. Statistics Canada and the U.S. Department of Labour define a non-traditional occupation as a job in which one gender makes up less than 25% of the total number of workers in that occupation.
Agencies in Saskatchewan and Quebec report that a "non-traditional job" is in an occupation where less than 45% and 33% (respectively) of the workers are women. This enforces the notion that the term “non-traditional job” is no longer a useful term in a time of change for women’s roles in the workforce.

To address this issue Unifor has proactively:

- Presented our study findings on terminology and language to Canadian Apprenticeship Forum (CAF)
- Changed references of "non-traditional" in all skilled trade presentations
- In 2009, changed the designation journeyman/woman to journeyperson in collective agreements

Completion of Apprenticeship

The statistics show that apprentices don’t always complete their apprenticeships. Over the past 10 years, there has been a 5% increase in female new registrants under 30, from 13% to 18%. This is encouraging. However, the share of young women completing those programs has only increased by 1%. This completion rate is poorer than the completion rate of males in the same group. One of the barriers identified by women is lack of accessible, affordable childcare.

Retaining Women in Skilled Trades and STEM occupations

The recent efforts by the federal government do not go far enough to help workers in apprenticeships. The $4000 Canada Apprenticeship Loan is an example of an initiative that sounds good but in reality is useless without a job. The loan must be repaid with interest after the apprenticeship is completed but with no guarantee of a job.

There has been a significant change in women’s workforce participation over the last generation. Women in male-dominated workplaces may face a hostile work environment. Negative attitudes about whether women should be in occupations like skilled trades are still pervasive in some workplaces and can grind women down.

Where women are involved in research within the STEM occupations, women often wind up in precarious work and leave the occupations for more secure, but lower paying, employment. Research within the university setting is mostly funding by grants. The cycle of grants often lead to the repeated layoff of the research assistants. These classifications are most often filled by women.

We won’t say that our workplaces are perfect, but we can point to strong anti-harassment language and joint investigations of complaints that can give women an antidote to negative attitudes and actions they may encounter in the workplace. Our union education is always conscious to break down stereotypes and support a respectful workplace. In our current Skilled Trades Union Education Program, there is a module on equity.
Promising practices to encourage more girls and women to pursue a career in STEM occupations or skilled trades

Change often requires intervention and positive actions. Our Skilled Trades Department and Master Bargaining Committees recognize the need for collaborative, innovative strategies to build diversity in our skilled trades workforce. Our union has participated in a number of promising programs to increase the number of women in the trades.

The Unifor Skilled Trades Department is in the process of doing a comprehensive gender, sector, and classification survey. This survey of skilled trades testimonials will be used as a form of outreach to students. The actual process of uncovering testimonials provides a link to potential mentors and provides a network to other trades.

We see more pre-apprenticeship programs readying women for opportunities in the trades. We have a long history of doing outreach and awareness workshops including raising awareness of possibilities for young women in the skilled trades through mentoring and community speaking as advisor for Women’s Enterprise Skills Training WE Succeed: Beyond the Status Quo project. We have also worked on identifying barriers to girls entering skilled trades on the Girls in Trades Taskforce 2014 and 2015.

In 2009, one of the predecessor unions to Unifor, the Communications, Energy and Paperworkers Union participated in a joint venture with the Saskatchewan Institute of Applied Skills and Technology, Women in Trades and Technology program through the CEP Humanity Fund. The union’s fund contributed $15,000 to the joint program that recruited, oriented, and educated over 20 Aboriginal women in the Regina area on the basics of the construction industry. These women – who were otherwise unfamiliar with construction -- learned about the basic skills of construction trades, the apprenticeship options and responsibilities, the economic benefits of the construction industry, and the “tricks of the trades” they need to get their “boots on the job.”

After a successful graduation from the six-month classroom exploration of the industry, the CEP immediately dispatched four eager participants to a nearby construction project represented by the CEP. Another promising practice is Unifor’s Women Skilled Trades and Technology Awareness (WSTTA) program which runs each year for women who work in production bargaining units in the automotive industry. Women are able to explore the skills and aptitude needed for success in the trades and connect with existing female tradespersons.

In partnership with Women’s Enterprise Skills Training (WEST) and St. Clair College, Unifor has used WSTTA program as a recruitment tool to expose unemployed and underemployed women in Windsor to the requirements and classifications in trades. Unifor National Skilled Trades Coordinator Terry Weymouth coordinates the program delivered by tradeswomen which gives applicants a good sense of what is involved in entering the trades and served a mentoring component. Sixty-seven women completed the program in 2014 and 75 are enrolled for 2015. Meeting women in trades is part of breaking down the barrier — they need to see it to be it.

In 2010 Unifor, through its predecessor union CAW, partnered with Saugeen First Nation Education to promote skilled trades for indigenous women. A three day program was offered at the Union’s Education Centre which included identification of mechanical aptitude, numerical and spatial relations, mechanical comprehension and reasoning. The women assembled and programmed robots, were introduced to the basics of electrical wiring, attended a health & safety workshop, as well as
participating in mock interviews. On the final day, a panel of indigenous women in trades spoke about their challenges in overcoming barriers. It was a community event which included the men of the community providing childcare.

Wrenches and Roadblocks, a board game based on the Unifor Women in Trades and Technology program concept was successfully launched in 2,800 Ontario schools by Skills Ontario as Skills Work, Skills Play.

We are part of Irving Shipbuilding’s Centre of Excellence Women Unlimited Pilot project, helping 20 women embark on a new career. They will be entering into a two year welding and fabrication program. Successful graduates will be employed by Irving Shipbuilding in 2017. Unifor is very supportive of the mandate to increase workforce diversity at the shipyard. We are proud to promote women in skilled trades there. We recognize that to increase women’s participation in the trades, we need innovative approaches and real commitments that include having Industry, Union, Government, Education, and Community working together in partnership. It is key to have all stakeholders at the table including the union. Unifor journeyperson, Koren Beaman, participated in interviewing potential candidates.

Candidates get a clear message that women are currently working in shipbuilding and they can see that they would have a mentor. The Centre of Excellence considered how to address barriers such as transit and childcare. The Centre of Excellence presenters can provide more detail.

Unifor has met with the Kiikenomaga Kikenjigewan Employment and Training Services (KKETS) in connections with their pre-apprenticeship training for welding, heavy duty equipment mechanics, plumbing and electrical. To date there have been 300 youth through this training including 30 young women. Graduates of the program have been hindered by lack of job opportunities and discrimination. We have been able to suggest opportunities in Thunder Bay facilities where we are the bargaining agent. We are also exploring developing a community chapter group with them. And the Skilled Trades Department introduced the KKETS to the International Brotherhood of Boilermakers who are in need of workers/apprentices.

Our most recent promising practice occurred at Fiat Chrysler Automobiles (FCA). FCA recommitted to the apprenticeship program to create a new generation of highly skilled certified journeypersons. FCA in partnership with the union has just completed the selection process for 100 apprentices of which 10% are women.

This was the first time since 1998 that FCA has taken on apprentices. The agreement stipulated that all the apprentices would be taken from the existing production workforce.

After being selected through an initial aptitude test, applicants were able to take a preparatory course designed and delivered by Unifor. Unifor ensured that the materials used were gender neutral and made sure that the course included a female instructor from the trades.

The internal intake meant that women were used to working in a production facility, had exposure to the trades, and more of an understanding of the work than the average worker. The union held information sessions where questions could be asked and regularly issued updates on the process. Unifor skilled trades representatives utilized membership meetings, social media, and posting boards, embracing transparency for a fair process.

The new apprentices will be working in a workplace where there is regular training on respectful workplaces and where the union leadership have all had human rights training.
We are excited to follow these apprentices, men and women, through this intake method and compare their experiences to the norm.

Conclusion

Women can excel at science, technology, engineering and mathematics. We see this around the world. Action must be taken to ensure that girls remain in STEM educations and that they are not clustered at the bottom of STEM occupations.

Unifor is committed to changing the perception of who a skilled tradesperson is, to one based on competency and not gender. We need industry, government and labour to work together to educate, reduce barriers and create opportunities for apprenticeships in general and for women in particular.

\footnote{Statistics Canada. Table 477-0054 - Registered apprenticeship training, completions, by age groups, sex and major trade groups, annual (number), CANSIM (database); Statistics Canada. Table 477-0053 - Registered apprenticeship training, registrations, by age groups, sex and major trade groups, annual (number), CANSIM (database).}