CONSTRUCTION FOUNDATION OF BC

Canada

BRITISH COLUMBIA

Funding provided through the Canada-British Columbia Labour Market Development Agreement.

SLMP Skills Ready Multi-Sector Engagement Project

Sector Engagement Report

February 2019

Prepared By: The Construction Foundation of BC

This document was produced in 2019 by the Construction Foundation of BC as part of the Skills Ready initiative. Research and analysis support provided by Zielke Consulting Ltd.

Learn more about Skills Ready at www.skillsready.ca. For additional information on the Foundation please visit www.ConstructionFoundation.ca or contact info@constructionfoundation.ca.

Summary

This Draft Sector Engagement Report represents the outcome of engagement undertaken of assessing the interest from three sectors for inclusion in the Skills Ready initiative. Individuals and organizations were engaged in order to determine their support for collaborative outreach to promote trades and technology careers and improve opportunities for young people to access entry level employment in in demand occupations. This report details the response from organizations, industry associations and employers in manufacturing, automotive and the applied sciences (technicians and technologists). In total 103 individuals in manufacturing, automotive and the applied sciences were engaged, including employers, industry associations and subject matter experts. Engagement activities included group discussions, interviews, and surveys. Additionally, this report considers educator consultation on the Industry ASK and a review of previously produced Sector Labour Market Partnership reports.

Engagement and outreach have provided critical feedback that will inform updates to existing education tools and communication materials. Moving forward, an updated Industry ASK to will be produced. As well, new communication strategies and materials will be developed based on sector specific input. Feedback on implementation strategies has been gathered from representatives of each sector and strong support has been noted by key groups and employers in each sector. Modification to the project advisory board is recommended to include both association and employer representatives, as well as additional educators and a parent representative.

No significant changes to implementation strategies are needed. However, consideration should be given to new opportunities presented by each sector – such as facility tours for manufacturing - and significant limitations noted in engagement. These limitations will require collaboration between CFBC and other groups and may occur overtime – for example coordinating new entry pathways for youth interested in technician employment. Additional efforts to develop targeted training and preparation opportunities may be possible, and efforts to enable these through collaboration with secondary educators will be undertaken.

Commitments to participate in project activities and the advisory have been expressed by the Canadian Manufacturers and Exporters (CME), the Applied Sciences Technicians and Technologists of BC (ASTTBC), and BC Auto Careers on behalf of the Automotive Retailers Association (ARA) and New Car Dealers of BC (NCDBC). Ongoing discussion is occurring with other groups that will

form part of Skills Ready implementation in the 2018/2019 school year. Commitments to participate in awareness and experience-based activities has been made by 76 employers. A list of those engaged through this project is included in Appendix 1.

Engagement identified key opportunities and limitations from employers and industry representatives for inclusion in Skills Ready. Overall, there is significant support for expanding the scope beyond construction – especially amongst employers themselves. There is a diversity of ways that employers would like to be involved and trends were noted in activities employers participated in from awareness building to providing experiential learning opportunities. Based on these findings, it is recommended that implementation in the 2018/2019 school year include representation from the automotive, manufacturing, and the applied sciences. This should be undertaken with the common purpose of attracting and preparing more young people to trades and technology positions in our sectors.

Table of Contents

Introduction: From Construction Ready to Skills Ready

Since its inception as a pilot, Construction Ready has resonated with employers, filling a need expressed by all -- to bring more youth in to industry. As its name suggests, the pilot originally focused on construction trades and those employers who hire apprentices in those trades. While construction was a natural starting place, it quickly became evident that the program was relevant to all industry sectors that hire and train trades. Employers in the manufacturing sector, including shipbuilding, industrial marine and the automotive sector, all need to build their next generation of skilled workers. To do that they often need to see the same attitude, skills and knowledge from youth th at construction employers seek. Within these industries, the role of technology is increasingly shaping how things are designed, made, and used. Technician and technologist roles form a critical component of promoting employment and the sector to young people.

Skills shortages due to economic growth and retirements have encouraged industry to look towards underutilized groups as a source of future workers. In response to this, Construction Ready has sought to engage youth through industry outreach and communication materials that articulate the attributes employers seek in young workers. Through collaboration between industry and educators, new opportunities for youth to discover, experience and prepare for employment have been created.

A critical component of implementation has been increasing youth and educator awareness of industry at a local level. This has best been achieved by directly connecting youth and employers, but it is also achieved through presentations and materials provided to educators for classroom use. The focus has been on entry level jobs and local labour market demand, which has encouraged targeted promotion of labouring positions as an entry to long term career opportunities.

As a result of the feedback and comments the Construction Foundation of BC has received over the past two years from other sector groups and employers, we approached the Sector Labour Market Partnerships program at the Ministry of Advanced Education, Skills and Training to investigate the potential of expanding Construction Ready into other sectors under Skills Ready. A short-term engagement project was established to look at the potential of working with three other sectors. Manufacturing, Automotive and Applied Sciences, Technologists and Technicians were chosen.

Outreach to employers, subject matter experts and industry groups was undertaken. The outcome of this has been developing a network of supporters for collaborative implementation moving forward – including employers and industry groups. Key findings gathered from engagement will inform communication materials, the development of additional educator tools, and strategies for engaging youth, employers and educators.

Moving forward as Skills Ready provides an avenue for employers in multiple sectors to be involved in shaping how young people discover, experience and prepare for work following graduation. It is a chance to reinforce a clear message about the importance of applied learning and the opportunities afforded in pathways that are not predicated on university training. Through collaboration, Skills Ready provides an opportunity for industry to help build the next generation.

Methodology Overview: Engagement Leading to Implementation

Sector engagement was undertaken to identify the level of support for the addition of three sectors into Skills Ready activities. This included work to catalogue variations and common themes across sectors, specifically focusing on youth in high school and their transitions into entry level jobs.

All stakeholders interviewed, surveyed or invited to group discussions were engaged under the assumption that, if interested, they would be included in project activities beginning in the Fall of 2018.[1] As such, outreach incorporated specific questions related to how employers would like to be involved in future activities.

Three separate groups were intentionally engaged. Targets included:

1. Outreach to the leadership of associations, industry groups and ad-hoc employer networks;
2. Outreach to association membership through the associations.
3. Direct outreach to employers in the automotive and manufacturing sector;

Outreach to associations and industry groups was done through interviews and consultation, in most cases over multiple meetings. A short and long form survey made available to all associations who identified an interest in distributing it to their members.

Outreach to individual employers was done face to face, by phone or through an online survey. Nearly half of all employer respondents were contacted multiple times.

Four methods of employer outreach were undertaken

1. **Face to face conversations using a consistent interview guide**. The focus of the conversation was to review the ASK attributes and determine if there was variation between what an automotive or manufacturer employer would require. Those contacted were encouraged to complete an on-line or paper survey as well.
2. **Long form interviews**. 20-30-minute interviews with automotive and manufacturing employers using an interview guide. Interviews provided the opportunity for a focused conversation about each ASK attribute to determine in detail the variations/similarities amongst the construction ready ASK attributes.
3. **Three small group discussions using a discussion guide**. The focus of the small group discussion was to hear collectively from a group of employers in each sector. A set of questions was used to guide the conversation and employers were encouraged to follow up with more information by completing the on-line or paper survey.
4. **Employer survey**. Survey questions focused on gathering information on the priority attributes that are desired by employers and on gather information related to how employers are involved, or would like to get involved, in outreach to youth.

[1] Throughout consultation, industry groups and individual respondents indicated that they were "surveyed-out," indicating that they would only be inclined to provide input if it led to action being taken.

Interviews and face to face outreach was led by Construction Foundation of BC staff, including Catalysts, who worked with employers to identify potential opportunities for project participation on an ongoing basis.

External consultation was provided through Zielke Consulting Ltd, who provided support to the development of interview and survey schedules, conducted interviews and group workshops, and provided analysis of primary and secondary data.

Respondents

A complete respondent list is available in Appendix 1. Note that some respondents did not want their information made public and they have been excluded from the list and the overall engagement count presented here.

From the various methods of engagement, a total of 103 individuals were consulted, interviewed, surveyed or collaborated with. 60 unique survey responses were completed (22 of these were completed in person), and 46 interviews were completed with employers, industry representatives or subject matter experts, and leadership of industry associations and ad-hoc employer groups. In some cases, long form interviews followed short form surveys (14 total), and long form surveys followed the completion of a short form survey (7 total).

A total of 15 industry group/association responses were gathered, 83 employers provided responses through interviews and surveys (a minimum of 310 were contacted, including outreach through partner associations), and 5 industry representatives or subject matter experts were consulted. A total of three group discussions were held, two with manufacturing employers and one with automotive to review the Industry ASK. Shortest engagement was 5 minutes for short form survey, and the average engagement time is estimated at 25 minutes.

In total, 51 representatives of the automotive sector were engaged, 46 from manufacturing and 15 from the applied science, technicians and technologists.[2] 15 employer respondents indicated they operate in in more than 1 sector – most often this was a combination of manufacturing and another sector. Amongst respondents in the manufacturing sector, subsectors included marine, value added wood, apparel, clean technology, bioscience and automotive parts.

[2] Fewer respondents were received from the applied sciences due to limited survey outreach to employers in this sector. As was a direct result from agreement with ASTTBC to focus and provide outreach at a later date. ASTTBC provided significant information that was not available for other sectors and therefore this report is largely informed by that content.

Table 1: All Sector Engagement by Regional Operations

Region	Employer	Association/Group	Total
Cariboo	6	10	16
Kootenay	4	10	14
Mainland / Southwest	43	11	57
North Coast & Nechako	7	10	17
Northeast	6	10	16
Thompson-Okanagan	4	10	15
Vancouver Island / Coast	42	14	56

Companies operating in multiple regions: 7 (All Manufacturing)

Associations and Industry Groups Working in Multiple Regions: 10

Respondent's Strategic Significance to Project Activities

There was different strategic importance for engagement with employers, subject matter experts and industry groups. In the lead up to multi-sector collaboration, it was critical to engage all three groups. Representatives from all three groups were engaged in all three sectors. The majority of employers were engaged from the automotive and manufacturing sectors.

Industry Groups – Industry groups are the most likely to organize outreach efforts to schools. Engagement with these groups was undertaken in order to determine what existing initiatives are operating and where, what initiatives are intended and what can be implemented through collaboration. A key focus of this was to identify potential duplication of service and duplication of funding. Industry groups also represent strategic implementation partner as they can frequently mobilize membership to participate in activities and events. Outreach also identified the importance of training programs to groups and associations. This formed an important finding for future initiatives – especially for manufacturing and the applied sciences.

Employers – Direct outreach to employers was a principal means of testing support for Skills ready implementation. Just as with Construction Ready, employers are a critical stakeholder in the initiatives activities from awareness building to employment. Outreach has identified a minimum of 50 potential project participants for the 2018/2019 school year.

Subject matter experts – subject matter experts provided strategic insight on themes such as sector labour market challenges, workforce development initiatives, youth engagement challenges and opportunities, and other considerations that may impact collaboration.

Automotive Sector Findings

Automotive employers are looking to hire young people who like cars. Personal passion was identified as the starting point. Respondents observed that how young people discover their interest has changed over time, with several employers lamenting the loss of a culture of fixing things yourself and a change in the status and prevalence of the high school auto shop. Frequently, employers identified the need to address the image of the "grease monkey" – an image that is disappearing rapidly from the industry. Balancing the need to attract people based on a personal interest and promoting the evolving face of the industry was observed to be an important part of outreach to youth through Skills Ready. Employers identified the same expectations of soft skills as were observed in the Industry ASK, with an emphasis on keeping an organized and tidy workspace.

Employer Advice No. 1: "Pay attention and learn from us, put the tools back, don't break things, do not spend time on your cell."
Automotive Shop Owner, Victoria, BC

Outreach to the automotive sector included consultation with industry associations, subject matter experts and employers. A targeted employer engagement strategy was undertaken after early consultation with industry representatives identified that most shop owners and managers would not respond to email contact. Employer response has been positive towards the initiative overall and there is significant interest in providing direct to work employment opportunities – particularly around apprenticeships and employment while youth are still in school.

Consultation occurred with the New Car Dealers Association and the Automotive Retailers Association. These two organizations have collaborated on the BC Auto Careers portal which provides an online job search and career information tool, in addition to outreach activities to secondary schools. There is significant interest in expanding outreach and work experience opportunities with schools. As well, career exploration resources have been developed and could be provided to educators through targeted training. Discussions highlighted the need to develop local school and employer collaborations. Interest in participation on the project steering committee has been expressed – most likely through a BC Auto Careers representative as well as an employer.

Level of support and key themes

Feedback from the automotive industry associations and employers suggests that the sector is very interested in engaging young people. 67% (n=27) of employers indicated that they struggled to attract young workers and 75% (n=30) indicated that they perceived recent graduates as a key part of their workforce development strategy. For those who did not, the reason provided most frequently was that they required skilled tradespeople in level 3 or higher because they lacked enough people to provide in house training and mentorship. 30 employers engaged identified they were already working with youth

or schools to some capacity. Over half (n=17) offer work experience. Anecdotally, a trend was noted that employers in Victoria within walking distance of a high school were more likely to be involved in school programming such as Youth Work in Trades or work experience. Only 2 employers engaged indicated that they had been involved in any awareness building activities including tours and presentations.

The distinction between the New Car Dealers and Automotive Retailer Association in BC is indicative of variation within the sector and what they look for in terms of preparation for new hires. This is most pronounced in the Automotive Service Technician trade where dealer specific training is prominent in dealerships and after-market shops identified that they require a broader or more generalized skillset. These different environments may appeal differently to students depending on their personal preferences and experiences.

Industry trends and rapid technological developments are transforming the sector at a remarkable rate with propriety maintenance and operating systems, dealer specific training programs, and digital diagnostics creating a different demand on labour. As well, accelerated technological advancements are transforming the traditional Automotive Service Technician career pathway. Respondents indicated that this is dramatically changing the technical knowledge they look for in young workers. Computer competencies, specifically literacy and diagnostic ability, and knowledge of electronics were identified as being increasingly required prior to employment. The ability to combine technology and applied skills is seen as incredibly important.

Summary Feedback on ASK Attributes

Automotive employers agreed that youth need to bring many of employability attributes summarized in the Industry ASK. Compared to construction employers, there is more emphasis on the ability of the new hire to work within an organized work space and work with computer diagnostic equipment.

Employers engaged identified that entry level employment was available in almost all departments except for sales. Painters, autobody repair, service technicians, automotive glass technician and customer service (parts person) were all identified as jobs youth could start without previous work experience. However, the right attitude, a mechanical aptitude and basic skills were expected. Foundation training was identified as a common starting point – especially for service technicians.

Special mention was made of:

- interest in and knowledge of automobiles,
- knowing how to drive a car
- neat and able to keep their workspace organized
- diagnostics and computer use
- driver's license

"I want the ten-year-old who took their bike apart in the backyard just to see how it works."
Automotive Franchise Manager, Vancouver

ASK Variations - Automotive

Attitude	Skills	Knowledge
• Employers agreed the current attitude list was important but wanted to ensure that youth had a good attitude towards safe work practices and an organized workspace	• Employers agreed with the skill requirement and had a focus on the ability to use computers and auto shop equipment. • Experience using the equipment and/or hand tools was important as was ability to read and interpret a manual.	• Knowledge was not essential, but desired for entry to the workforce. • Employers interviewed were most concerned that new hires knew how a car works and had a passion for the cars/trucks (auto enthusiast) • All employers interviewed had onboard training, so safety was dealt with at entry to employment, but prior knowledge of hazards was important.

Key Informants Engaged

Industry groups and key informants engaged in preparation of this report include:

Automotive Retailers Association	**Ken McCormack**	**President & CEO**	**kmccormack@ara.bc.ca**
In addition to phone calls, two in person meetings occurred with Ken. Agreement in principle to work together to expand Skills Ready into the Automotive sector is in place. Preparation of short form and long form survey for Automotive was completed and shared. Importance: Ken McCormack is the key contact to reaching ARA membership and promoting youth initiatives to the aftermarket automotive sector. In partnership is Blair Qualey, Ken directs the BC Auto Careers initiative.			
New Car Dealers	**Blair Qualey**	**President & CEO**	**bqualey@newcardealers.ca**
In addition to a phone interview and one face to face interview, an in-person meeting occurred with Blair and Ken McCormack of the ARA. Agreement in principle to work together to expand Skills Ready into the Automotive sector is in place. Preparation of short form and long form survey for Automotive was completed and shared. Importance: Blair Qualey provides key information regarding trends and needs of new car dealerships and provides access to a broad range of members. In partnership is Ken McCormack, Blair directs the BC Auto Careers initiative.			
The Garage	**Ron Tremblay**	**Owner, ITA SAG Chair & ARA Chair**	**ronald@thegarage.ca**
Ron Tremblay has been a key contact in facilitating discussion regarding auto careers. He is a self-described champion and has been instrumental in advocating for collaboration amongst employers. He has suggested and initiated regional employer collaborations as a key mechanism for implementation. Importance: Ron is an influential part of both the ARA and the provincial training and apprenticeship system. He is a key part of guiding any collaboration that may develop with ARA, and he is a key link to other auto employers in the Lower Mainland.			
Fountain Tire	**Lloyd Stamm**	**Operations Manager, Lower Mainland Stores**	**Llyod.stamm@fountaintire.com**
Lloyd has been an advocate champion of trades and apprenticeship in BC for several decades. As the former director of the Automotive ITO, Lloyd helped arranged group consultation and has been key to mapping out how implementation can happen with a broad group of aftermarket employers. Importance: Lloyd Stamm is a key informant on labour market demand and the redevelopment of the ASK attributes. He also provides access to several Lower Mainland employers interested in project implementation.			

Manufacturing Sector Findings

Manufacturing facilities are incredibly diverse. The range from primary to tertiary manufacturing in BC is significant. However, what employers expect from young people leaving high school is not. Employers look for the same Attitude attributes sought by construction and automotive, however the emphasis on trades and apprenticeship is less significant. Employer expectations of youth are driven by the process and product in each facility. In house training is the key mechanism for skill development, however this creates some unique challenges for entry level work. Distinction between in how young people are incorporated into the workforce is driven by several factors, this includes how much automation drives the process, how technical and precise the product is, the skill requirements of workers on production lines, the overall company culture and structure, the size of operation and others. While the sector is broad, sub-sectors can provide a more relatable starting point for exploration. Variation between sub-sectors can be significant, which may appeal to many young people.

Employer Advice No. 2: "Have a positive attitude, attend work consistently, learn, develop skills, be willing to try new things, be flexible in terms of department, wages and shift, be safety conscious."
Manufacturer, Victoria, BC

Outreach to the manufacturing sector included direct employer engagement, consultation with industry groups, and collaborative outreach via a survey distributed through the Canadian Manufactures and Exporters. Most engagement was completed face to face, which included interviews tied to facility tours in 12 different locations. A total of 46 representatives from the manufacturing sector were engaged. 20 survey responses were gathered, and interviews or groups discussions occurred with 24 employers. 14 employers were involved in multiple engagement activities.

Level of support and key themes

The manufacturing sector presents a diversity of career opportunities for young people. All associations engaged perceived youth as a key part of a workforce development solution. When surveyed, 64% (n=10) of employers responded that they struggle to attract young employees, and 69% (n=11) perceive recent high school graduates as a key part of their workforce solution. Manufacturing employers have expressed a strong interest in awareness building activities, including tours, presentations and a presence at career fairs. Working with the CME has resulted in the organization of a minimum of 10 tours in October to correspond with Manufacturing Month. This will take place in 4 regions of the province and include tours throughout the Lower Mainland, Victoria, Nanaimo, Vernon, Kelowna and Prince George.

In the inclusion of manufacturing in Skills Ready, it will be important to create opportunities for educators and youth to discover what the jobs are locally and how they can get started. The challenge experienced in outreach has been to identify common career pathways, training needs and entry points to employment for young people. Comparing precision metal manufacturing in Nanaimo to primary wood

manufacturing in Vernon to bio-medical manufacturing in the Lower Mainland highlights the complexity associated with promoting the sector to young people. Manufacturing engagement reinforces the importance of first-hand experience and youth/employer connection.

The manufacturing sector shares several common attributes with the construction sector. Feedback from employers and industry groups highlighted the importance of the Attitude attributes for entry level work opportunities. The priority on soft skills was significant, and most agreed that on the job training could be expected. One employer summarized the sentiment well when they expressed, "we hire for proven attitude, the best preparation is a job or anything that shows that." Manufacturing's overlap with construction is also significant in terms of tool competencies and general physical aptitude that they seek.

While the needs of manufacturing employers are diverse, the majority of respondents – 80% (n=16) – indicated that they look for high school education or less. Respondents indicated that they would provide a variety of opportunities to youth over the course of a career. Long term employment options were possible in several locations, and the scope of what education would be paid for ranged from in house technical training to apprenticeship to management training and college or university courses. The interconnection between sales, product development, and production is more pronounced in manufacturing than construction. Similar observations were made with automotive employers – especially dealerships where there was a strong relationship between maintenance and sales noted. Entrepreneurship and innovation may be a key part of promoting the manufacturing sector and there is a natural tie to technology here.

A general observation has been made that manufacturing is often "hidden"; that there is no cohesive or distinct value-added manufacturing "culture" like there is for automotive, or even construction. Feedback from a young worker in the sector summarizes this observation, saying she hadn't known about the company she worked for existed until she applied for a job, despite it being in her neighborhood for the 20 years she lived there.

The lack of a known manufacturing identity showed up in several ways throughout engagement. This included in consultation with educators who noted an absence of high school career exploration activities related to manufacturing. Several associations and key informants also noted a lack of preparation at the high school level. One respondent explained that, comparatively to other parts of Canada and internationally, BC does not have a history of vocational training programs for manufacturing, nor a distinct manufacturing culture. The idea that someone would "stumble in to manufacturing" came up often amongst employer respondents, who themselves frequently started in other sectors.

Very few specialized training and employment preparation programs in high schools could be identified in the Greater Victoria Area, the Lower Mainland and Prince George. In all areas pre-apprenticeship exploration programs for automotive, marine repair, aviation and aerospace, and construction were identified in schools. The concern over a lack of awareness was also brought up in relation to dual credit programs – particularly the ITA's Youth Train in Trades programs.

Just as with construction, there are several challenges to pre-apprenticeship or vocational preparation training prior to experience or employment – especially when the focus is on high school students.

Manufacturing employers indicated that they look for the same attributes that construction employers identified. Specialized knowledge and skills were a lower priority than attitude and in-house training could be expected. The solution may be in creating opportunities for youth to discover manufacturing jobs, then access existing school programs. Programs such as the ITA's Trade Sampler provide a broad set of base skills that are expected by employers in several sectors. During a visit to a Vancouver Island manufacturer, a graduate of a Trades Sampler program was observed working as a machinist, an entry level position – and an interest that developed during the welding and metal fabrication component of the Sampler program. As a result of employment with this particular manufacture, this employee was learning a CAD program – an interest developed as a direct result of the current employment. While anecdotal, this reinforces a need to explore if young people's awareness of trades and technology employment opportunities is a more important starting point than specialized preparation programs for high school students. Likely, the growth of both options will be a required response to skills shortages in the coming years – both in manufacturing and other sectors.

Summary Feedback on ASK Attributes

Employers agreed that youth need to bring some employability attributes related to similar construction ready attitudes, skills and knowledge to the job. Compared to construction employers, there is more emphasis on the ability of the new hire to work within the confines and challenges of a manufacturing environment. Special mention of:

- interest in machines and making 'things',
- spatial awareness in terms of being able to move efficiently and effectively around the machinery to ensure productivity and safety,
- attention to detail during production,
- satisfaction working on repetitive tasks,
- reading and interpreting documents,
- using machines and computers and;
- responding well to constructive criticism.

ASK Variations - Manufacturing

Attitude	Skills	Knowledge
• Employers generally agreed that the existing attitude attributes were important for young people to possess or demonstrate at work. Additional Attitude attributes were identified: • *Spatial awareness* • *Able to take constructive criticism* • *Proactive* • *Ability to handle repetitive work*	• Employers agreed that young people need to have skills related to working with their hands and in a busy work environment. • Technical skills that would be desired in construction were not as important. • Specific additional skills were mentioned by employers: • *Mechanical sense* • *Precision/quality control* • *Read Drawings* • *Apply reading and writing*	• Only a couple of employers felt there was a high requirement for industry specific knowledge. Employers explained that their onboard training helped to orient workers about the required terminology so advance knowledge was not required. • Employers did state they felt there was little knowledge in their community about the opportunities in manufacturing and despite reaching out to schools did not get much interest. • Employers have good onboarding programs, that review industry terms, work processes and safe working procedures. • Knowledge of safe work practices was desired, but not mandatory as onboard program includes this training

Key Informant Engagement

Industry Groups engaged in preparation of this report include:

Canadian Manufacturers and Exporters BC	**Andrew Wynn-Williams**	**Divisional Vice President, BC**	**Andrew.wynnwilliams@cme-mec.ca**
Canadian Manufacturers and Exporters BC	**Glenda Beaulieu**	**Sr. Manager, National Marketing & Brand**	**glenda.beaulieu@cme-mec.ca.**
Meetings with CME have been ongoing and a collaboration agreement in principle has been established. Two consultations have occurred with members, including one related to youth employability and one related to HR challenges. A third with employers in the North was delayed by summer vacations. Short form survey and long form survey established and branded. A list of employer contacts was provided. Importance: CME provides access to their membership, which is comprises several manufacturers that are keen to be involved and represent an innovative and creative approach to manufacturing – something that is more accessible to high school students than other forms of manufacturing.			
Harbour Digital (VIMAB)	**John Juricic**	**Owner**	**john@harbourdigitalmedia.com**
Schmidt & Carbol Consulting Group (VIMAB)	**Barry Carbol**	**Partner**	**bcarbol@telus.net**
Conversations are ongoing with Harbour Digital about where collaboration can occur. Four meetings have occurred to date and subjects have included updating resources and implementation in Island schools. An employer meeting is tentatively planned for the fall. Importance: HD Media has lead Sector LMP research on Vancouver Island and is key facilitator and organizer for an ad hoc group of employers.			
BC Alliance of Manufacturing	**Marcus Ewert-Johns**	**President & CEO**	**marcus@manufactuirngbc.org**
One in person meeting occurred. Discussion focussed on the potential to work together. Unclear regarding their capacity or interest to be involved. Potential for collaboration to provide training options in secondary schools. Importance: Marcus Ewert-Johns has significant experience spearheading training and workforce development initiatives for the manufacturing sector. He is a key contact and link to potential manufacturing employers looking to hire and train youth leaving school.			

Sub-Sectors

Two key subsectors were engaged in anticipation of a Skills Ready expansion. This included employers and industry representatives for the value-added wood products sector and the marine – small craft sector. Value added wood manufacturing and primary wood processing are a significant portion of manufacturing employment in BC, and the sector is undertaking a significant workforce development project through Forestry Innovation and Investment. Collaboration with this subsector is ongoing and is likely to be incorporated as a future Skill Ready project.

Small craft marine manufacturing and repair was noted as a unique sub-sector that has a particularly strong presence on Vancouver Island. Uniquely, the combination of recreational marine activities, fisheries, and research has led to the development of a specialized group of manufacturers active

clustered in Sidney and Nanaimo. Large-scale shipbuilding is also perceived as a sub-sector of manufacturing and should be considered in future skills Ready initiatives. Outreach to the ship-building sub-sector is in the initial stages and not included in this report.

The following key informants were interviewed:

BC Forest Safety Council	**Gerard Messier**	**Manager - Training and Program Development**	**gerard.messier@bcforestsafe.org**
BC FSC is undertaking initiatives to promote career skills and safety to youth and is interested in collaborating to engage secondary students. Initial collaboration has resulted in industry volunteers being identified for safety presentations through the LearnSafe initiative. Importance: A key part of engaging manufacturers in the forestry sector			
Human Capital Strategies (Forestry Investment and Innovation Council)	**Kerry Jothen**	**CEO + Principal**	**kjothen@humancapitalstrategies.ca**
Kerry Jothen is leading engagement into workforce development solutions for Forestry Innovation and Investment. Initial conversation identified complementary activities in both the FII engagement and this project. The Foundation's ongoing FII project related to career awareness in forestry may be a key point for collaboration over time. Importance: Kerry Jothen provides significant insight in to strategic directions of the forestry industry, including industry needs for entry level position.			
Quadrant Marine	**Shelley McIvor**	**Managing Director**	**smcivor@quadrantmarine.com**
The small craft marine sector has undertaken a partnership for youth training and engagement in Sidney and has looked at expanding options in Vancouver and elsewhere. Collaboration to date has been effective, with exploration of potential training partnerships launched with Quadrant and the Nanaimo school district. Importance: Quadrant is leading both the training and employer engagement for the Marine Service Technician trade. They are a key link to industry and have crossover with manufacturing – especially on Vancouver Island. Critically, Quadrant is looking to develop youth outreach strategies for employers as well and collaboration is ongoing.			

ASTTBC Level of Support

Applied sciences technicians and technologists operate in a variety of sectors. They are represented and regulated provincially by the Applied Sciences Technicians and Technologists of BC (ASTTBC). ASTTBC has actively worked with school districts in the past to engage youth to consider and access technologist and technician careers. This has included initiatives that create work experience opportunities and the development of online career profiles and resources for students and educators.

Outreach to the organization occurred with Jason Jung, Manager Professional Practice, and Theresa McCurry, Chief Executive Officer. ASTTBC has committed to participate on the steering committee and to collaborate on outreach activities – starting in the Lower Mainland. ASTTBC is actively promoting STEM education and awareness through the ASTTBC Foundation, outreach activities, committee work and participation in events such as Skills Canada BC.

Following consultation with ASTTBC, a focus on content review was chosen over targeted employer engagement. This was decided based on two key factors. ASTTBC as an organization has been leaders in youth outreach at different points over the last two decades – particularly in the Lower Mainland. Work already undertaken includes communication material development, member surveys, youth programming and educator tool. ASTTBC has provided an extensive amount of information on both Labour Market Indicators and their own work on youth engagement. Second, ASTTBC is planning to lead its own member engagement in the fall, and the preference was to wait until that was in place.

Key Themes

For reference, a list of occupations considered as part of the applied sciences is attached in appendix 2.

A key focus in the past year has been on Women in Technology. ASTTBC has completed a member survey of women technologist that identifies some key findings related to potential outreach activities coordinated through Skills Ready. Additional exploration of this will occur in the fall following key committee meetings.

Findings from their survey indicated that women currently working in technology positions do not agree that girls receive enough information in the K-12 school system to enable them to choose a career in technology/science (80% No/20% Yes).[3] Top suggestions for improvement were more hands-on STEM activities in elementary school, additional applied science courses at secondary schools, career counselling for females interested in STEM and guest speakers. Both hands on activities and guest speakers are Skills Ready activities already planned for the 2018/2019 school year – an initiative focusing on young women will be explored with ASTTBC. Respondents also identified two key pieces of information that can influence Skills Ready implementation. The first is that 13-17 is the age range that is most important to

[3] ASTTBC. (n.d.). *2017 BC Women in Technology Survey Results.* Retrieved from https://asttbc.org/wp-content/uploads/2017/09/BC-Women-In-Tech-2017.pdf

capture a girl's interest in STEM, and that school is the best venue for this to happen. Parents were also identified as a key influencer.

ASTTBC's TechWORKS initiative was launched in 1995 with a video showcasing career opportunities in technology. Over a decade, TechWORKS activities included the creation of career promotional tools (including the TechBAR), a work experience pilot enabled by federal funding in the late 1990s and ongoing work experience initiatives throughout the early 2000s. An online resource was created to provide information on technology careers and has been maintained until 2016. ASTTBC is reviewing the resources and considering next steps.

Labour market research and work undertaken through the Technology Education and Careers Council (TECC) brought together by ASTTBC has long advocated for technology education and careers. In its 2013 strategic plan, the committee identified 10 recommendations with associated strategies for addressing looming skills gaps. Included in this are recommendations for promoting careers through the K-12 system, including high school preparatory programs for technology jobs and general STEM promotion. Very few entry level jobs are immediately accessible to youth graduating high school.

One component of the TECC 2013 strategy was the recommendation to develop more trades-to-technology pathways or dual trades/technology training programs. Promoting this combination may be an effective way of engaging young people who are unsure of what they want to do and see trades employment as having limited long term opportunities. This dual approach could be an effective way of shifting the perception of what applied skill employment involves and potentially attract a different audience of young people to these sectors. Attracting youth to trades and technology combined programs would have a positive impact for both manufacturing and construction.

Incorporating ASTTBC into Skills Ready could come with promoting technology training options in school. This includes exploration classes in drafting, industrial engineering, applied mathematics and instrumentation. Additionally, a focussed effort between a post-secondary partner, high school educators, manufacturing employers, ASTTBC, and others could be pursued to encourage more pre-employment preparation for technologist roles. An example of this is a 9 month drafting courses which could be undertaken as pre-employment preparation through existing dual credit structures. Youth would have access to several entry level employment opportunities upon graduation in addition to other post-secondary options.

The inclusion of technologies in the Skills Ready initiative is important. Trades and technologies are intrinsically intertwined in all 3 sectors explored. Providing a clearer and more accurate picture of career opportunities in manufacturing, construction and automotive requires a broader depiction of the skills, tasks and activities undertaken in entry level positions and long-term career options. Leveraging technology related employment can help challenge the antiquated perception associated both with the trades and with work in these sectors.

Additional Technology Outreach

In addition to ASTTBC, further outreach and consultation occurred with representatives of industry groups operating in technology fields. This included initial consultation with representatives of the Information Communications Technology (ICT) Sector. A key focus here is on the intersection between construction, manufacturing, automotive and design. Regional collaborations may be undertaken, especially in locations where ICT is an integral part of manufacturing. For the immediate future, it is suggested that ICT employers be engaged where activities have a natural overlap with applied design and skills.

Information and Communications Technology Council of Canada (ICTC)	**Sandra Saric**	**Vice President, Talent Innovation**	**s.saric@ictc-ctic.ca**
We connected with them in March and they have promotional materials for youth that they are willing to share. The Information and Communications Technology Council (ICTC) is a not-for-profit national centre of expertise for the digital economy. ICTC is the trusted source for evidence-based policy advice, forward looking engagement, and creative capacity building programs for the digital economy. Importance: At both the federal and provincial level, ICTC has developed and tested skill training projects for youth in school. They have provided insight in to challenges and successes for engaging youth through digital tools.			
Island Women is Science and Technology (IWIST)	**Robyn Quinn**	**Chair**	**robynquinn@shaw.ca**
Connected with the Island Women in Science and Technology. Met with board and met with their chair and acting CEO 3 times. Very keen to be involved and connect with young women in the K-12. Importance: Robyn Quinn is a key part of the network of women in technologies and trades across Vancouver Island, she forms a key part of outreach to young women to promote STEM careers through mentorship and industry connection.			
Independent	**Cindy Pearson**	**COO of BC Technology Industry Association**	**cindy@capasiti.ca**
Provided direction and suggestion on engaging tech employers in support of applied skills. Identified interest in collaborating to engage the sector in implementation activities. Importance: A key connection to the tech sector, including software development. Provides a wealth of insight in to industry priorities and challenges, especially when onboarding young workers. She is a key informant on the ASK attributes for technologies.			

Survey Summary

A short form and a long form survey were developed to gather employer feedback on perceptions of high school graduates as a source potential labour, interest in engaging youth to promote careers in the sector and general expectations related to young workers. Examples of both are included here as Appendices 3 and 4.

The survey was distributed through multiple employer networks and was made available to all associations if they wished to distribute it. The largest response group came through the Canadian Manufacturers and Exporters. Direct employer outreach was undertaken. In person surveys and outreach by phone was a critical way of reaching small and medium sized enterprises – especially in the automotive sector.

The short form survey focussed on:

1. Demographic questions – sector and region
2. Interest in engagement with secondary schools
3. Employability attributes (the Industry ASK)

The Long Form included questions focussed on:

4. Sector Specific questions
5. Training and retention
6. Employer perceptions of young workers

Table 2: Respondent Breakdown by Short/Long and Sector

	Total	Automotive	Manufacturing	Technologies
Short Form	55	41	17	6
Long Form	12	4	3	1
Both	7	5	4	0
Total Unique	60			

Survey Demographics

Respondents had operations concentrated in the Lower Mainland (n=30) and Vancouver Island (n=28). For manufacturers, seven respondents operated in multiple regions. Only one automotive employer operated in multiple regions.

Table 3: Survey Responses by Sector

Q3: My company operates in the following sectors (click all that are applicable):

	This Sector and Others	Only This Sector
Automotive	1	39
Manufacturing	7	9
Technologies (technicians and technologist services)	6	0
Construction	3	0
Forestry	3	0
Marine	0	0
Hospitality	0	0
Oil & Gas	1	0
Other (please specify)	2	0

Number of Respondents in 1 sector	48
Number of Respondents in 2 or More Sectors	10
Total Respondents	58
Missing	2
Other Industries	Agriculture, Trucking
Examples of More Than One Sector	
Manufacturing & Construction	
Manufacturing & Forestry	
Manufacturing & Technologies	

Perceptions of the Next Generation

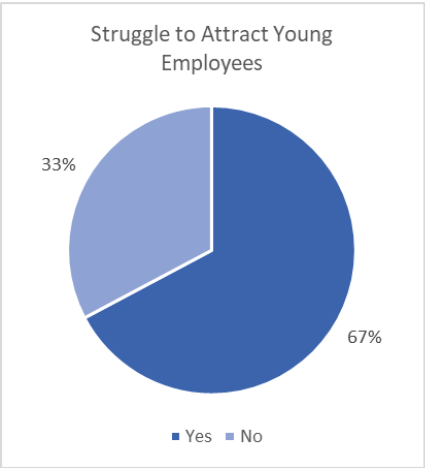
Three questions were asked to generate a clearer picture of what employers think about engaging the next generation. This will inform communication strategies targeted at employers. Most employers are struggling to attract young employees, only around half indicated that they are already working with schools. Around two-thirds of employers in the automotive sector had hired youth in high school (n:30), whereas three quarters (n:13) of manufacturing employers are not currently working with schools.

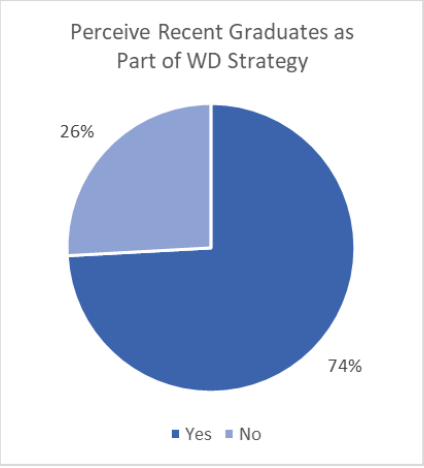
On further investigation, of those not currently working with schools, 71% (n=20) are interested in some form of outreach to schools either to build awareness or create work experience opportunities. The remainder are only interested in hiring after graduation. Of those that perceive youth as part of their workforce development strategy, 72% (n=31) are struggling to attract young workers. For those that are not struggling to attract young workers (n=19), the majority aren't working with schools currently (n=11).

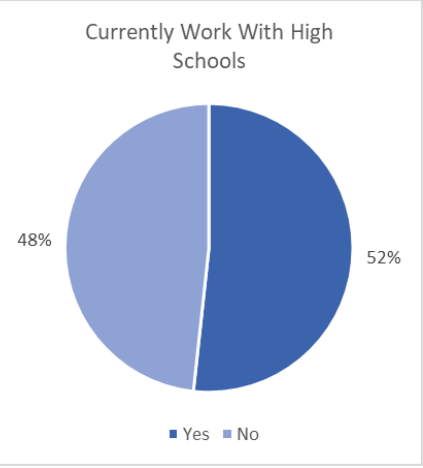
These results are assumed to have a higher representation of employers interested in youth employees than the general population. Those who completed the survey online may have done so because they want to be involved in a youth initiative. Face to face outreach included meeting employers who did not want to respond to anything related to youth engagement, and therefore provided no response.

Table 4: Youth Solutions and Engagement

	No	**Yes**	***Total***
Does your company struggle to attract young employees?	19	39	*58*
Does your company perceive recent high school graduates as a key part of its workforce development strategy?	15	43	*58*
Does your company currently work with high school educators or students to offer work experience, promote careers in your sector or hire graduates?	28	30	*58*







Minimum Education

Education expected is low, but employers still seek a certain level of tool skill or technical aptitude. Automotive employers expressed an interest in hiring prior to graduation, especially if students had some experience with cars through their own hobby or a high school shop class.

Table 5: What is the minimum education required for full-time entry-level jobs in your company?

	Automotive	Manufacturing	*All Responses*	*% of all*
No high school completed (have left school)	1	2	*3*	*9%*
Currently in high school	7	0	*7*	*21%*
High school diploma	9	6	*15*	*44%*
Apprentices (some technical training completed such as a foundation program)	5	1	*7*	*21%*
Trades certified (Red Seal or Certificate of Qualification)	1	1	*1*	*3%*
College Diploma/certificate (1-2 year program)	0	0	*1*	*3%*
Co-op students	0	0	*0*	*0%*
Undergraduate Degree	0	0	*0*	*0%*
Graduate Degree	0	0	*0*	*0%*
Other	0	0	*0*	*0%*
Total Respondents	23	10	*34*	*100%*

Employer Advice No. 3: "When hiring, I choose character over capacity."
Manufacturing Employer, Langley, BC

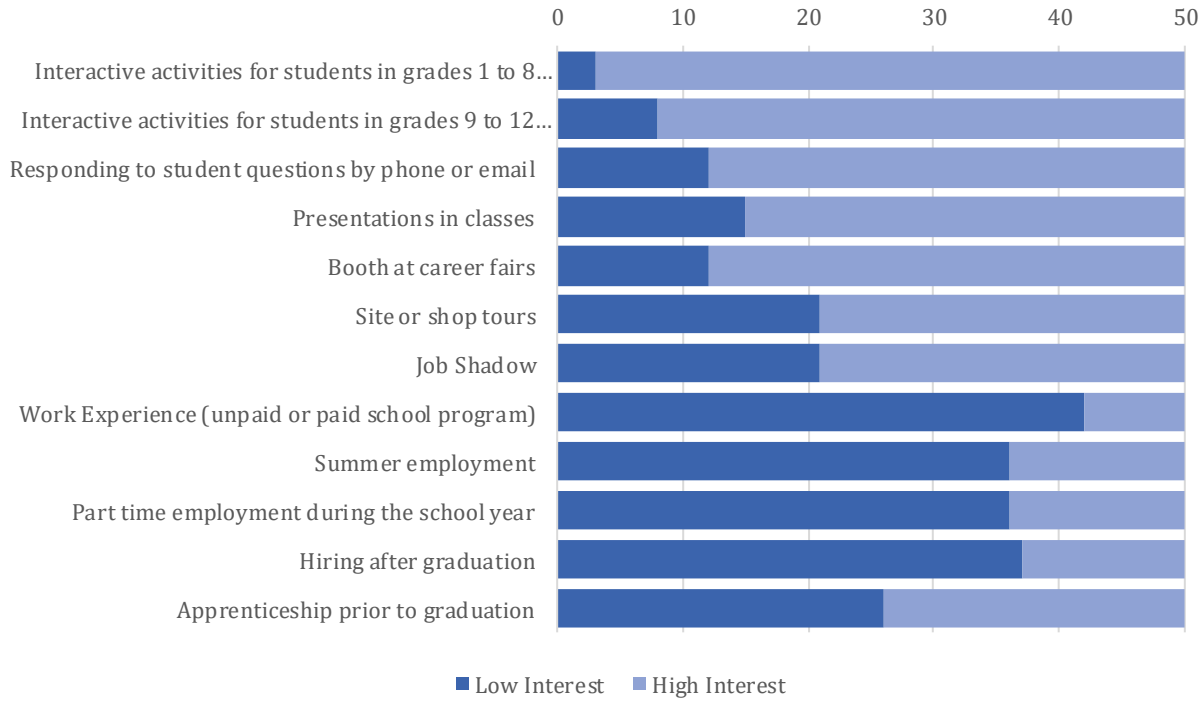
Employer Interest: Skills Ready Activities

Survey respondents were asked if they currently worked with secondary school educators and youth. For those that did, they were asked what they currently offer and what they would be interested in offering. For those that do not work with schools currently, they were asked what they were and were not interested in offering. The results of these responses are below.

The most common way respondents work with schools is through work experience – 40% of respondents (n=19) indicated that they participated in this program. Only two respondents had done presentations and four had tours of the facilities.

In terms of employer interest, most respondents focus on high school level more than elementary or middle school. Interest is concentrated around employment options.

Figure 1: Employer Interest in School Based Activities

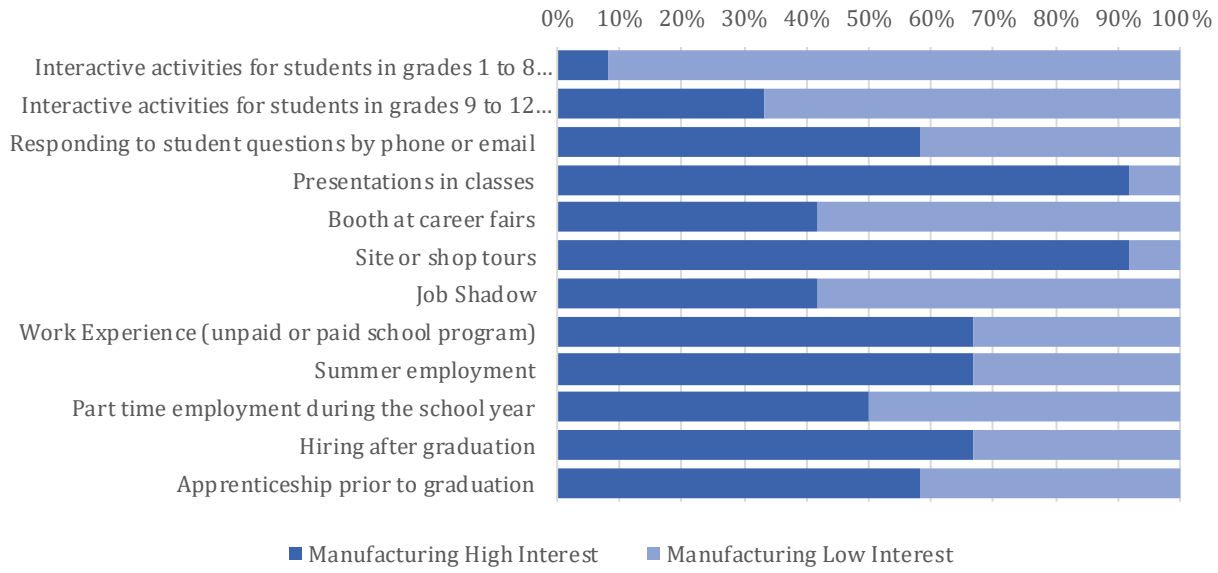


N=50

Employer Interest by Sector

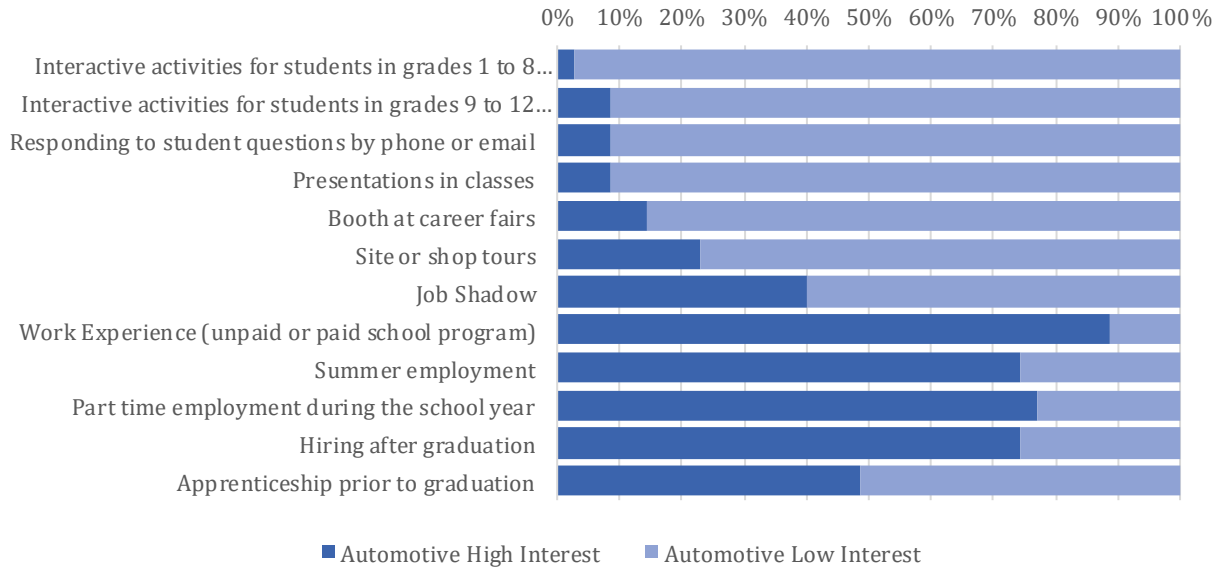
Responses were further analyzed, and responses were sorted by sector. Overall responses were then aggregated into interactive activities, awareness activities and work experience or early employment. The results are presented below.

Figure 2: Manufacturing Employer Interest in School Based Activities



n=16

Figure 3: Automotive Employer Interest in School Based Activities



n=35

Figure 4: Manufacturing Employer Interest in School Based Activities (Aggregate)

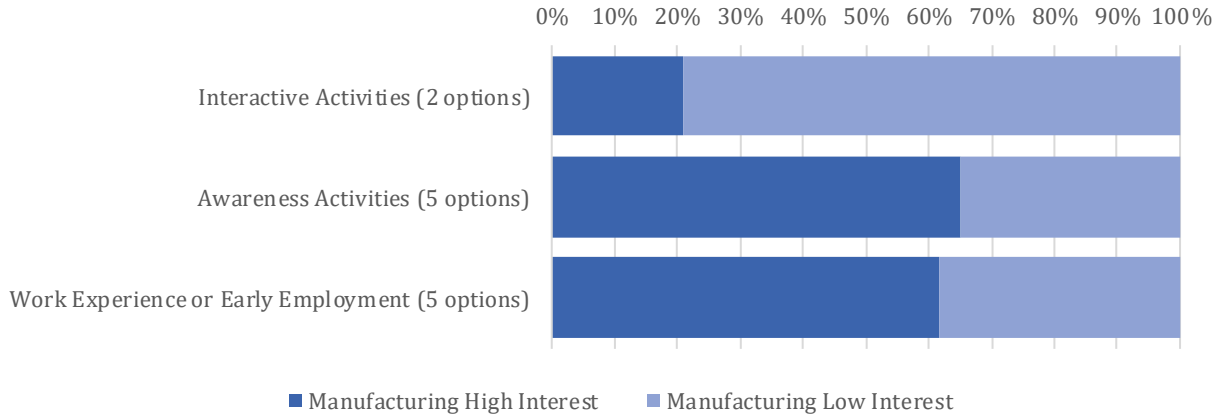
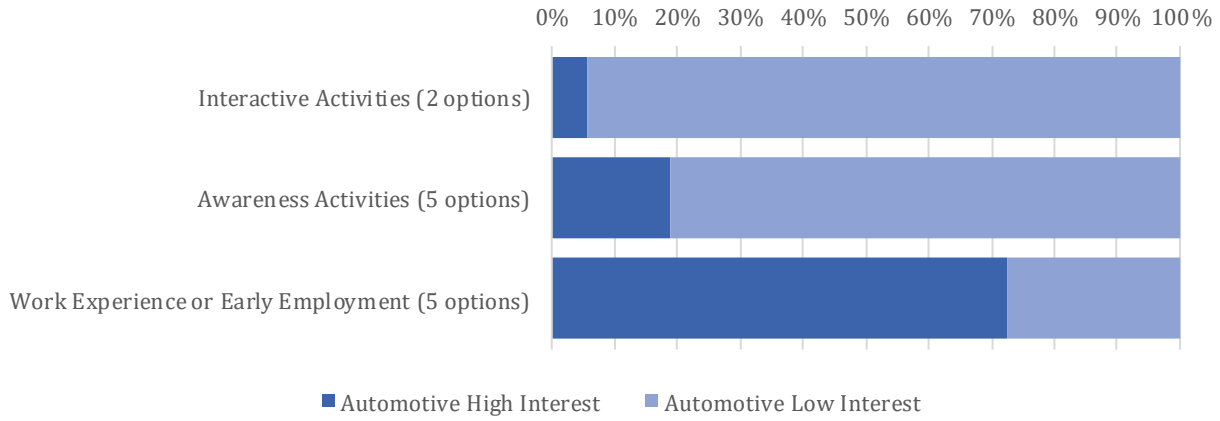


Figure 5: Automotive Employer Interest in School Based Activities (Aggregate)



Observations

The clear majority of automotive employers (90%, n=31) express an interest in work experience prior to graduation. Comparatively, manufacturing employers were less inclined to provide work experience (67%, n=8). Manufacturing employers responding in the survey were more inclined to participate in awareness-based activities. Consultation indicated that this may be for several reasons.

Manufacturers are more likely to have the facilities to host tours than automotive or even construction employers. Schedules are also more static or predictable than other sectors. Manufacturers were also more likely to have design or administrative staff that could be away from their facilities. With the prevalence of owner/operator operations in the after-market auto sector, this was less possible.

All respondents indicated interest in at least one activity, with hiring most often cited when 2 or less responses were recorded. For those with low interest in most activities, comments provided indicate that

they are looking to schools to provide more training and skill development. Some comments were critical of school-based training programs, with no clear distinction between post-secondary programs and high school programs being made. A trend was observed in other engagement activities the it was common for respondents who were interested in awareness building activities to also recognize that they had a role in creating a learning and exploration environment. This highlights a need for awareness building activities for employers in order to identify how they can be part of building interest and influencing training opportunities.

Just as with construction employers, a key Skills Ready activity will be to encourage employers to review and change their onboarding practices with high school youth. This includes promoting opportunities for them to be part of activities and school programs over time that enable exploration, preparation, and on the job training.

Barriers

Respondents were asked if they face barriers to engaging youth and schools. Responses present a mix of barriers. 70% (n=36) indicated that they face at least one barrier, while 30% (n=15) did not. The most common reasons were safety regulations, lack of time for outreach, lack of connection and lack of formal recruitment and training plan.

Other examples included a lack of knowledge of the options available to be involved. Safety was also a common concern, especially where it related to heavy machinery. In one case, bio-medical hazards meant that tour options were heavily limited. For employment, driver's licence was a key barrier. Several employers perceived youth as lacking training or preparation in high school – especially around work ethic. Responses indicated that while employers perceive youth as part of their workforce solution, they struggle to work with schools to find qualified, trained or interested young people.

Table 6: "For your company, what are the main barriers faced when offering work experience, promoting careers in your sector or hiring graduates? (Select all that apply)"

Barrier	Response Count
Do not hire high school graduates without post-secondary training	6
Lack of time for outreach	13
Lack of connection to schools or educators	12
No clear entry level position in our company to promote	7
Lack of formal recruitment and training plan for hiring youth	12
Age limitations (HR Policies limit opportunities we can offer)	2
Safety regulations or requirements	15
Other (please specify)	1

"I am interested in helping and often need part time low skill work but not sure who or where to turn to for this type of assistance. We are also a fairly small business (16 people) so have few roles to make available. One thing we have to offer is our sheet metal fabricators do not have tickets as there isn't one for our trade and they are able to make a good living and provide for their families. Often I wonder if young people are intimidated by the idea of specializing or taking any type of course and it might be good for them to know that there are jobs/industries where formal education is not the only way."

Manufacturing Employer, Burnaby, BC

Feedback on the Industry ASK: Support and Priorities

The Industry ASK as developed under Construction Ready is included as Appendix 5.

Assessment of the Industry ASK concept was undertaken in several ways. A modified version of the original Industry ASK developed through Construction Ready were presented to respondents as a list of attributes they would prioritize. Additions were based on feedback heard in early engagement. Additional space was made for open ended responses.

Survey data was assessed and a modified version of the ASK is being developed. Significantly, these responses reinforce a key message: what employers look for is more about how you work than about what you know or can do, especially when starting out.

The long form survey starts with a prompt for respondents to identify the top attributes they seek in young workers. From there, a more in-depth dive into the ASK is taken. This provided insight in to what employers seek in young workers and reinforced the idea that attitude is key. Upon further analysis, a challenge that has been experienced with Construction Ready implementation was also noted: employers are seeking more skilled entry level workers but prioritize attitude and in-house training over other education.

As with construction, those attributes under the Attitude category were ranked the highest. Sector had no impact on this. Skills were somewhat important, and knowledge was considered least important. Manufacturing ranked knowledge as being lowest priority – apart from safety. Willingness to learn was ranked high and open-ended responses included several variations of this including *willingness to ask questions, motivated to improve* and *curious*. New attributes suggested included *the ability to take constructive criticism, assertiveness/self-confidence, passion, cultural fit*, and *ethical*.

When additional questions were asked about skills, employers responses balanced technical ability with life skills. This included self-awareness and internal motivation, as well as several of the attributes described under "attitude" When asked about their ideal high school training program, employers

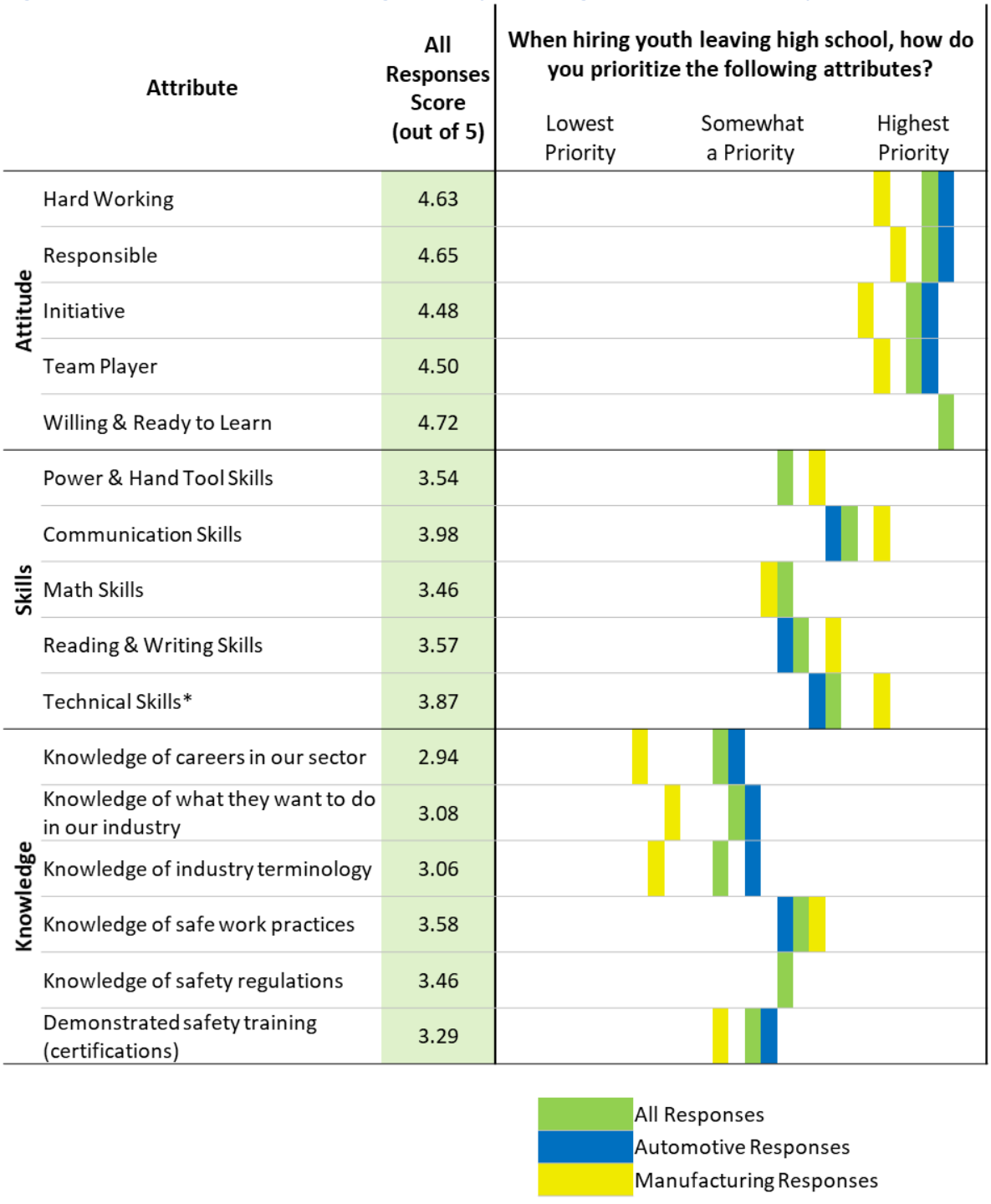
identified general skill sets, with limited trade or sector specific training. Apart from "changing a tire and oil" and, "basic hydraulics," responses identified basic numeracy, listening, reading and writing, and basic tool use. What defines basic was not explored in the survey or other outreach. Further exploration of this may be warranted.

While the general breakdown of attitudes, skills and knowledge made sense to respondents, what qualified as a skill versus an attitude or knowledge wasn't always clear. This raises important considerations to how the ASK is presented and used with employers and with youth.

Overall closed and open-ended responses demonstrated that the Industry ASK concept reflects the entry level attributes employers seek in young worker in the automotive and manufacturing sectors.

Ideal high school program: "One that shows the organizational structure of a manufacturing (or other) company and demonstrates why the skills we are asking for are important - a simple example being the choice and outcome of not showing up for work affects capacity, the ability to meet customer needs and eventually your relationship with the customer and the viability of your company."
Manufacturing Employer, Vancouver Island, BC

Figure 6: Priorities When Hiring Youth from High School (Industry ASK)



*Technical Skills are considered as measuring/cutting/joining/computer/machinery use etc.

Figure 7: Open Ended Response Summary

Employers who completed the long form survey were first prompted to identify what they look for in young workers before they were shown the ASK. The following is a summary of these responses. The size of the word corresponds to the number of times a respondent indicated it. A total of 53 attributes were provided, with *willing to learn* and *attitude* appearing six times each.

Summary of all Sector Engagement Findings

Engagement with employers and industry representatives identified that across automotive, manufacturing and technology occupations youth are identified as a key solution to workforce development. Employers universally agreed that soft skill attributes were a high priority, and general consensus was noted on the importance of the attitude attributes over skills and knowledge. As well, the need for outreach to youth and educators to promote career opportunities was identified as a key recruitment and attraction strategy for all sectors.

Overall awareness building activities that promote the sector and the career opportunities within it were important to all. A key finding has been that communication materials and outreach activities need to balance long term career options with entry level labouring opportunities. With youth, a focus on the individual – including posing questions of, "who are you?" and "what do you relate to?" - will be critical to carrying this forward. For employers in all sectors, communication will need to include clear examples of ways that they can collaborate with the school system to create awareness building opportunities and chances for youth to explore by doing. This includes information on programs available in each district and the key contacts within them. As with construction, targeting educator and employer stakeholders to be more aware of each other and how they can collaborate to raise awareness of career options and prepare youth will be an important implementation activity.

Variations were noted in several areas. Variations between sectors include the availability of direct to work options following high school graduation, opportunities to access training leading to entry level employment (primarily post-secondary training), employer interest in various outreach opportunities and the general "character" or "personality" of the industry itself as well as the individuals that employers in each sector look for.

The Attitude attributes in the Industry ASK were broadly supported, with minor additions of concepts of *precision/attention to detail*, *receives constructive feedback* and *organized* being added to the attitudes section. Feedback on the Skills and Knowledge sections of the ASK followed themes expressed by construction employers. Basic tool abilities were expected, but the need for industry specific knowledge was low – especially if a passion or interest were present. Additional Skill attributes suggested including Mechanical Aptitude and Computer Skills (coding and diagnostics). For technologists, drafting was identified as an integral base skill for multiple occupations. Safety knowledge is critical for all groups.

Advancement through personal drive is a concept common across sectors; how a young person gets their start is not as universal. Work experience leading to regular employment may be less accessible in manufacturing than other sectors – largely depending on what's being produced and the in-school programs a young person has participated in. Direct to work pathways may be even less accessible for applied science entry level jobs. Automotive employment was generally seen as accessible based on a personal passion – if young people like cars, they'll likely succeed (especially if they have a driver's licence). Communicating how a young person can get ready for entry level jobs is quite broad across and within each sector. The focus on general aptitude may be the best approach. Employer engagement and outreach may require alternative approaches to the existing Skills Ready model if direct to work

opportunities are to be developed. Facilitating educator and employer collaboration will be critical to achieving this.

Through outreach to manufacturing and automotive dealerships, it was observed that there is a demand for highly specialized skillsets that are not available without previous experience or specialized training. This can be summarized as a "jump" from high school to high skill employment, and feedback from employers encourages an evaluation of vocational preparation programs available in high school. Youth leaving high school may not be the solution to filling specialized roles. Pre-employment training or specialized skill training for youth that haven't expressed a commitment to a specific occupation or employer may not satisfy demands for skilled workers – especially where young people lack the motivation or soft skills employers expect. Youth commitment is hinged on a personal drive and interest, therefore employer outreach prior to any training must include opportunities for youth to explore and discover how they fit and relate to the roles available. Pre-employment training that is experience based may provide more opportunities for employers to find candidates that satisfy their long-term skill needs. Exploration of this subject has at times been a contentious issue, especially where discussions have focussed on responsibility for training and preparing high school students. Ultimately, the impact on Skills Ready implementation is to foster and facilitate dialogue that can lead to a greater collaboration between educators and employers in order to enable young people to discover their own personal interest.

In general, the majority of employers engaged (90%) would be interested in at least one aspect of Skills Ready program activities. Employer interest could be seen to vary by sector. Respondents from the auto sector were more inclined to participate in employment-based activities, whereas manufactures leaned more towards awareness activities – such as tours. ASSTBC has identified that employers are keen to be involved in awareness building activities and a formal collaboration to this end may be undertaken on a regional basis as opposed to one provincial focus. Other sector associations are also keen to be involved, finding ways to effectively collaborate is an ongoing activity.

SLMP Report Reviews

A review of completed Sector Labour Market Partnership projects was undertaken with the intention of:

1. Identifying strategies related to youth outreach that could inform Skills Ready implementation;
2. Generating a clearer picture of sector labour market needs;
3. Identifying descriptions of competencies sought in young workers that could impact revisions to communication materials.

The following reports were reviewed:

Title	Sector	Produced by/for	Year
Final Engagement Report: Technology LMP & Diversity in Tech Report	Technology	Vancouver Economic Commission	2017
Council of Forest Industries Strategic Plan	Forestry	Council of Forest Industries	2017
BC Value-added Wood Products: Sector Engagement Report	Forestry/ Manufacturing	BC Wood	2017
Sector Engagement Final Report	Agriculture	BC Landscape, Arborist & Turf Industry	2017
BC Apparel Industry LMI Research Report & Workforce Strategy	Manufacturing	BC Alliance for Manufacturing	2017
BC Shipbuilding & Repair Workforce Table Labour Market Research and Analysis Project & Implementation Career Kit	Manufacturing/ Industrial Marine	BC Shipbuilding & Repair Workforce Table	2014
Island/Coast Region Manufacturing Labour Market Partnership: Strategy	Manufacturing	Harbour Digital Media – Vancouver Island Manufacturing Advisory Board	2017
Cook Labour Market Analysis	Tourism & Hospitality	go2HR	2016
Workforce Strategy	Technology	BC Water and Waste Association, Environmental Operators Certification Program	2017

Summary

Appendix 7 lists common challenges and solutions identified in the reports.

Sector LMP reports identify changing labour market demands and strategies to address broad sector and regional labour market issues. The reports reviewed present several common themes related to youth engagement. Four themes appear in strategy reports. These included:

1. Sector promotion to youth and influencers
2. New or enhanced training programs
3. Industry networking with educators and youth
4. Adjustments to curriculum (post-secondary and secondary)

Youth engagement and outreach appear as an important strategy in most reports, though this is almost always in association with other strategies or broader workforce development initiatives. Promotion of a

sector to youth in high school is the most common strategy. Training programs were frequently mentioned, especially where the inclusion of post-secondary institutions was possible. Several of the key implementation strategies of the Skills Ready initiative are identified in the reports, with the Foundation's Project Shop Class initiative being identified in the BC Apparel report as a good example of industry engagement with secondary schools.

Work-experience and co-op programs were often mentioned as key entry points to employment for all sectors. The focus of these programs was on post-secondary institutions, unless it was a reference to the ITA's Youth Work in Trades (also referred to as Secondary School Apprenticeships). Work in Trades was identified as a model that could be replicated for non-trade or specialized programs developed for manufacturing and technology. The intention was that these could grant youth access to on-the-job training options. HD Media's VIMAB strategy report mentions the inclusion of employer engagement as a key strategy for developing these opportunities.

In regard to training and curriculum, the bulk of the focus is put on post-secondary institutions and specialized training programs. Several of the strategies related to engaging youth in the high school environment include post-secondary partnerships similar to the current ITA Youth Train in Trades programs (also referred to as ACEIT). Only one report, the VEC technology strategy mentioned other dual credit options as a solution to labour market integration of youth in high school. Preparation programs operated in high schools were mentioned in reports on manufacturing and ship-building, with an emphasis on developing specialized skills based on regional labour market demand. For example, the apparel industry could support improvements to home economic programming. Very few reports mention primary and middle school engagement, though several mentions engaging parents as influencers. The VEC Talent Development Strategy identifies Science Fair participation as one area to focus on for primary and middle school engagement – especially for STEM careers.

Several reports identified a need to produce engaging materials that promote occupations and the sector to youth. In some cases, such as the BC Forest Sector Workforce Initiative report, the need to adapt existing content to be more relevant was mentioned. In other cases, including the BC Alliance for Manufacturing reports, multi-media tools were mentioned. A few reports, including the BC Alliance for Manufacturing and BCWWA documents, mention the need for communicating competency or work readiness attributes to youth. Harbour Digital media identifies the need to integrate soft skills into the K-12 career preparation curriculum. Frequently the concept of career profiles was mentioned, with work to develop these for Shipbuilding already completed.

Career exploration for First Nation students was noted only in the BC Tech Diversity report through a mention of an initiative led by the First Nations Technology Council. Engaging First Nations as an underrepresented group was mentioned in several reports, though this referenced programming for adults.

Conclusions and Recommendations

The Skills Ready implementation strategies and communication tools align closely with the strategies and recommendations of most of the SLMP reports. There is significant value to the work undertaken, and the comprehensive analysis provided on labour market issues provides key insights into how youth, employers and educators can be engaged. The extensive network of employers engaged through the development of these reports could provide a launching point for employer outreach to high schools coordinated through Skills Ready.

From the reports, manufacturing emerges as a strong advocate for programming that promotes career options to youth – specifically where it can have a dedicated regional or sub-sector focus. There is a significant appetite to engage youth as part of workforce development strategies. Variations in how this is undertaken, and how significant a priority youth engagement is, varies between sectors and sub-sectors. Often, youth engagement strategies are in addition to other initiatives undertaken such as a networking, communities of practice or overall training and skill development strategies. As SLMP reports are developed through consultation with industry, it can be assumed that there is a desire on the part of industry to initiate some, or all, of these strategic initiatives.

Of the four themes identified, no one strategy is perceived to be enough to resolve a sectors labour need completely. Addressing the current challenge of attracting, training and retaining more youth through the K-12 system needs to include a combination of strategies. This includes creating more substantial space for career exploration and discovery activities, not just occupational training.

The recommendation that emerges from a review of the Sector Labour Market Reports is to develop collaborative mechanisms that can enhance all stages a young person goes through as they prepare for transitions into the labour market – from first exposure to training. These need to be inclusive of all stakeholders in a given region. Based on the review of reports, the starting point for this includes education and awareness building activities for all: educators, employers, youth and parents.

Considerations for Communications and Implementation: Sectors, Skillsets or Personalities

Consultation raised an important consideration for how Skills ready is communicated to youth. Promoting a sector or specific trade may not have sufficient relatability for young people. A key message must be that Skills Ready is about youth and discovering who they are: "what do you relate to?"

One recommendation has been to create an industry specific profile, character or personality that details the unique characteristics of that industry. This can be reflective of the unique ASK characteristics that are desired. There is an opportunity to help youth connect how their personal attributes relate to a specific industry. Each industry has a certain characteristic/profile. Self-assessment quizzes may be useful to achieving this. A better match with personal characteristics could reduce the turn over for youth. Connecting personality to the characteristic of the industry would help build this match.

As such, the sector would not be the starting point. It would be the end point. The goal would be to get young people excited about what was possible, through activities and awareness building projects that help them identify who they are and where they fit.

Recommendations for Updating the Industry ASK

The majority of the work ready attitude, skills and knowledge as identified in the Construction Ready project are highly desired by employers in both the manufacturing and automotive industry. Employers would be happy if their new hires, could have **practiced, acquired and demonstrated t**he ASK attributes through previous schooling and/or work experience.

Building individual characteristics should consider the following:

- Manufacturing employers are looking for youth who can work repetitively in a highly complex work environment.
    - Key was spatial awareness in relation to moving about equipment to support production and safety, attention to detail and ability to take constructive criticism.
    - Employers commented that even small mistakes have large impacts on their business: quality is key.
- Automotive employers are looking for youth who have a keen interest in the auto industry and who are regularly engaged with operating, fixing and interacting with others who love cars/trucks as well.
    - Key was the ability to work effectively and keep a clean and organized work space
    - Special consideration would be given to youth who had utilize equipment and technology to maintain and repair automobiles and trucks.
- To improve its connection to each industry, a statement could be added that reflects the character of the industry and what they are looking for. (something like below)
    a. **Automotive**: Looking for someone interested in how things work and who likes to be organized and pays attention to detail.
    b. **Manufacturing**: Looking for someone who is interested in making things and proud of its quality and who is finds comfort in knowing what every day brings.

c. **Construction**: Looking for someone who likes to build things and who feels accomplished when a job is well done.
d. **Applied Science**: Looking for someone interested in problem solving and integrating technology into how we live

Educator consultation was undertaken with 9 different teachers from both careers and shop class environments. Consultation focussed on how the Industry ASK could be better integrated with career curriculum development, especially if it included multiple sectors, and classroom assessment in shop classes. After reviewing the materials, the following have been recommended:

- Identify which ASK items are youth targeted, educator targeted, and employer targeted. It may be that one size does not fit all. They need to be a suite, but double purposing materials may lead to confusion.
    - Revise the ASK teacher rubric to focus it on the student's perspective. Rename it as a student self-reflection tool. It should clearly be about the student's self-assessment and then how they apply that assessment to decision making and action plans. A preliminary draft of this is presented in Appendix 6.
    - Create a teacher guide to suggest ways to utilize the ASK rubrics as a teaching/career counselling tool.
    - Implement a training mechanism for shop teachers that demonstrates the value of the tool in their practices.
- There is a bridge missing between the ASK and how industry would use it. How industry can use this with young workers should be further investigated once the ASK materials are updated.

Concluding Summary

As engagement unfolded, the lines between sectors have blurred. These divisions broke down further with a focus on introductory career exploration and applied skill learning. The common need for youth to be 'willing' to work suggests that a focus on creating more interest, personal passion, and internal motivation is a critical part of getting work ready across trades and technology jobs. Using a youth development lens, what sector a young person ends up in matters less than how the get there and how well they fit when they get there. The broader the opportunities, the more chance that young people can find something they relate to. The benefit to employers is significant: young people making informed choices are more ready for the work that's available.

Employers engaged are looking to work with youth and educators to help prepare the next generation. There is some variation in what they are willing and able to do. Employer associations have recognized that new strategies and techniques are needed. Several of the strategies identified by these sectors require the development of effective connections between employers and educators to promote occupations, create entry level access, and develop new training and preparation programs.

For future Skills Ready implementation, the largest impact of engagement findings is on communication. Keeping a cohesive message of employability across sectors will be critical. The focus of communications can be on first jobs: what are they? How do you get them? Do you want them? And are you ready? Just as with construction, the objective should be to highlight the diversity of opportunities available. The Industry ASK concept is a useful tool for communicating what enables a young person to access these opportunities. Messaging should encourage youth to build their general capacity in order to chase something they relate to or find personally valuable.

Relationship building activities between employers and youth, and employers and educators, will help to resolve several challenges observed in engagement. Communicating entry level opportunities in manufacturing is more challenging than other sectors. Bringing youth to see facilities helps address this. Several employers engaged don't perceive youth are ready for work at graduation. It is likely that employer's perceptions will shift as they connect with educators and youth – especially where opportunities can be created for them to be part of the process of providing career exposure and learning experiences to youth.

Appendix 1: Engagement Respondents

Organization/Company	Name	Contact
Associations		
Applied Science Technologists and Technicians of BC	Jason Jung	jjung@asttbc.org
Applied Science Technologists and Technicians of BC	Theresa McCurry	tmccurry@asttbc.org
Automotive Retailers Association	Ken McCormack	kmccormack@ara.bc.ca
BC Alliance of Manufacturing	Marcus Ewert-Johns	marcus@manufactuirngbc.org
BC Forest Safety Council	Gerard Messier	gerard.messier@bcforestsafe.org
Canadian Manufacturers and Exporters BC	Andrew Wynn-Williams	Andrew.wynnwilliams@cme-mec.ca
Canadian Manufacturers and Exporters BC	Glenda Beaulieu	glenda.beaulieu@cme-mec.ca.
Harbour Digital (VIMAB)	John Juricic	john@harbourdigitalmedia.com
Independent	Cindy Pearson	cindy@capasiti.ca
Industry Training Authority	Jason Leber	jleber@itabc.ca
Information and Communications Technology Council of Canada (ICTC)	Sandra Saric	s.saric@ictc-ctic.ca
Island Women is Science and Technology (IWIST)	Robyn Quinn	robynquinn@shaw.ca
New Car Dealers	Blair Qualey	bqualey@newcardealers.ca
Quadrant Marine	Shelley McIvor	smcivor@quadrantmarine.com
Schmidt & Carbol Consulting Group (VIMAB)	Barry Carbol	bcarbol@telus.net
Skills Canada BC	Elaine Allan	elaine@skillscanada.bc.ca
Industry Represntatives and Employers		
Fountain Tire	Lloyd Stamm	Lloyd.Stamm@FountainTire.com
Greenlight Innovations	Alicia Figueire	afigueira@greenlightinnovation.com
Human Capital Strategies (Forestry Investment and Innovation Council)	Kerry Jothen	kjothen@humancapitalstrategies.ca
The Garage	Ron Tremblay	ronald@thegarage.ca
5.0 Design Company	Michael Christensen	Mchristensen@5-0design.com
Alpine Auto Repair	Carl Lindberg	carl@alpineautorepair.ca
AXYS Technologies	Robin Thomsen	rthomsen@axys.com
Belmont Collision Ltd.	David Baird	drb@belmontcollision.com
BI Pure Water	Jonathan Boughen	jonathanb@bipurewater.com
Big O's Tire	Roy Logan	Phone only
Big-O Tires Kingsway	Randy Sokolowsky	bigokingsway@lightspeed.ca
Brain's Auto Service	Brain McMillan	briansauto@dccnet.com
Brar Motors	Brar Motors	glorybrar@gmail.com
Bulldog Autoworks Ltd.	Dave Bull	bulldogautoworks@hotmail.ca
Car Fix BC, AALL Tech, Big O Tires	Brian Slobogian	bigo@carfix.ca
Columbia Plastics Ltd.	William Cochlin	billc@columbiaplastics.com
Columbia Plastics Ltd.	Brian Holmes	brianh@columbiaplastics.com
Command Industries	Tim Fraser	info@command.ca
Cowichan Auto Repair	Elly Ruge	ellyruge@gmail.com
Craftsman Collision	Fil Dadic	victoria@craftsmandcollision.com
Crown West Fabricators	Adam Brockman	adamb@crownwest.ca
Dendoff Springs Ltd.	Mary-Anne Morris	mmorris@dendoff.com

Dens Ladysmith Collision Centre	Eric Sumpter	denscollision@shaw.ca
Den's Ladysmith Collision Centre	Jaymee Sumpter	denscollision@shaw.ca
Dew's Auto	John Roua	dews@shawbiz.ca
Dickson & Fraser	Emily	dicksonfraserauto@shaw.ca
Downtown Auto service	Lana Halme	downtownauto@shaw.ca
East Coast Auto	Clyde Coffey	Phone only
Ebco Industries	Mike Sanguin	msanguin@ebco.com
Electra Meccanica	Fred Wang	fredjwang@electrameccanica.com
EZ Lube	Ron Vincent	rvincent@ezlube.ca
Fix Auto Vicotria	Mayra Barrera	mbarrera@fixauto.com
Fix Auto Collision Westshore	Ian Franklin	westshore@fixauto.com
Flynn Canada	Romeo Tarrayo	romy.tarrayo@flynncompanies.com
Fountain Tire	Mike Doughty	mike.doughty@fountaintire.com
Freeport Industries	Jaqui Lloyd	jlloyd@freeportindustries.ca
FreFlyt Industries Inc	Paul Stewart	paul@phsupplies.ca
Garibaldi Glass Industries Inc.	Sarah Steinke	sarahs@garibaldiglass.com
Glen Lake Auto	Larry Anderson	glenlakeautomotive@gmail.com
Glenlake Auto	Blair Andersen	glenlakeautomotive@gmail.com
Great Canadian Oil Change	Chris Corsie	info@victoriaoilchange.com
Greenlight Innovation	Christian Bosio	CBosio@greenlightinnovation.com
Hansen Industries	Edwin Beange	ed@hanind.com
Humble Mfg	Allan Spear	allanspear@humblemfg.com
Ideon Packaging	Jaclyn Fisher	jaclynf@ideonpackaging.com
Independent Contractor	Myles Andrew	mylesa@shaw.ca
iPLAYCO	Lyle McGladdery	lyle@iplayco.com
ISL Engineering	Megan Chambers	MChambers@islengineering.com
J Brothers Auto Body Ltd.	Leonard Gabriel	info@jbrothersautobody.ca
JS Foster	Bryce Flug	bflug@jsfoster.com
Kal Tire	Ryan Arruda	ryan_arruda@kaltire.com
Kal Tire	Jennifer Carmichael	Jennifer_Carmichael@kaltire.com
KZ Auto	Keren Zeng	kerenz@kzautogroup.com
Langford Parkway Automotive	Noel Tuel	tuel_75@hotmail.com
Lomak Bulk Carriers	Nicole Pretty	npretty@lomak.ca
Motor City Mechanics	Annonymous	islandrentacar@hotmail.om
Nicholson Manufacturing Ltd	Rhonda Morrison	rhonda.morrison@nicholsonmfg.com
OKTire Richmond	Samson Huang	okrich@telus.net
Olender's Auto Care Centre Ltd.	Dean McIlroy	olendersautocare@shaw.ca
Premium Auto Repair	Kuljit / Raja	premiumabby@hotmail.com
Propell/TYCROP	Meghan Delmage	mdelmage@propell.com
Purdy's Chocolates	Rachel McKinley	-
Randy's Tirecraft	Randy	randystirecraft@dccnet.com
Reidco Metal	Andrew Macleod	andrew@reidcometal.com
Rimex	Kyle Pidcock	-
Rimex	Karen Kuzek	karen.kuzek@rimex.com
Rosh Metal	Val Arustamov	info@roshmetal.com
Seamor Marine	Inja Ma	ima@seamor.com
Searles Auto	Chris Wylie	Phone only
Seastar Solutions	Maggie Cheung	Maggie.Cheung@seastarsolutions.com

Shortstop Auto Service	Ken Lyons	shortstopbigo@gmail.com
Simoes Automotive	Norbert Simoes	greazymonkey@hotmail.com
Sky Auto	Simon Chu	Phone only
South Seas Auto Body Co. Ltd.	John	southseasautobody@shaw.ca
Speedy Glass	Denis Lau	dlau@belroncanada.com
Speedy Glass	Leah Lowrey	speedy8754@belroncanada.ca
Stemcell Technologies	Mike Bell	mike.bell@stemcell.com
StemCell Technologies	Deanna Nielsen	deanna.nielsen@stemcell.com
Stinger Welding	Willy Manson	willym@stingerwelding.com
T.D. Repairs Automotive Specialists	Foster Thorpe-Doubble	tdrepairs@shaw.ca
Ty-Crop Manufacturing Ltd.	Murray Sasyniuk	msasyniuk@tycrop.com
Van Isle Auto Glass	Andrew Mahon	amahon@vanisleautoglass.com
Viberg Boots	Jason Viberg	viberg@workboot.com
Vital Manufacturing Inc.	Joshua Bradshaw	jrb@vitalmfg.com
VMAC Global	Christina Larsen	chris_larsen@vmacair.com
Windsor Plywood	George Hackle	georgeh@windsorplywood.com
Wolftek Industries	Gordon Gallop	gord@wolftek.ca

Appendix 2: Technicians and Technologist Occupation Classifications

The following information is provided as a reference point for considering technologists and technicians in the inclusion of Skills Ready activities. This appendix includes the NOC classifications and ASTTBC disciplines.

Engineering and Applied Science Technicians and Technologists Occupational Category

The following is considered by the Conference Board of Canada to be the standard definition for Applied Science Technicians and Technologists. The definition includes the following NOC codes:

- chemical technologists and technicians (2211)
- geological and mineral technologists and technicians (2212)
- biological technologists and technicians (2221)
- civil engineering technologists and technicians (2231)
- mechanical engineering technologists and technicians (2232)
- industrial engineering and manufacturing technologists and technicians (2233)
- construction estimators (2234)
- electrical and electronics engineering technologists and technicians (2241)
- industrial instrument technicians and mechanics (2243)
- aircraft instrument, electrical, and avionics mechanics, technicians, and inspectors (2244)
- architectural technologists and technicians (2251)
- drafting technologists and technicians (2253)
- land survey technologists and technicians (2254)
- technical occupations in geomatics and meteorology (2255)
- non-destructive testers and inspectors (2261)
- engineering inspectors and regulatory officers (2262)
- construction inspectors (2264)
- computer network technicians (2281)
- user support technicians (2282)
- systems testing technicians (2283)
- petroleum, gas, and chemical process operators (9232)

ASTTBC Discipline of Registration

The following Engineering Technology Disciplines are registered by ASTTBC:

- Biomedical
- Bioscience
- Building
- Chemical
- Civil
- Electrical
- Electronics
- Environmental
- Forest Engineering
- Gas & Petroleum
- Geomatics
- Industrial
- Information Technology
- Instrumentation
- Marine
- Mechanical
- Metallurgical
- Mineral Resources

Specialties under each discipline are listed through ASTTBC at the following link: https://asttbc.org/wp-content/uploads/2015/10/ASTTBC-Disciplines-Revised.pdf

Technical Specialists registered under ASTTBC include the following areas:

- Building design
- Construction safety
- Fire protection
- Property inspection
- Public works
- Site improvement surveys
- Steel detailing
- Onsite Wastewater
- Underground Utility Locator
- Electrical work practitioner (On Hold)

Appendix 3: Short Form Survey

See attached PDF documents

Appendix 4: Long Form Survey

See attached PDF documents

Appendix 5: The Construction Ready Industry ASK Rubric

See attached PDF documents

Appendix 6: Updated Skills Ready Rubric

See attached PDF documents

Appendix 7: SLMP Frequently Cited Challenges and Common Strategies

Frequently cited challenges included:

1. Gaps in knowledge, skills and abilities – especially for those seeking entry level positions;
2. Limited pathways for entry and advancement;
3. Short term retention challenges;
4. Career opportunities in the sector not well understood;
5. Knowledge loss due to an aging workforce nearing retirement;
6. A lack of connection between employers and educators at the secondary and post-secondary level;
7. An absence of dedicated training programs in the secondary system that address skills gaps;
8. Reaching the influencers: educators and parents.

Some strategies for workforce development targeted to high school aged youth were identified in the reports. While other youth engagement strategies were identified, the following represents the strategies that either align with Skills Ready activities or were strategies mentioned in more than one report. These demonstrates the diversity of thinking on how to incorporate young people into workforce development activities. Strategies included:

1. Youth programs that expose young people to work and training options, including those similar to the ITA's Youth Work in Trades and Train in Trades programs;
2. Promoting industry by creating promotional campaigns, as well as career awareness materials including learning pathways, career pathways, and occupation profiles;
3. Develop ongoing communication and networking activities for employers and educators in the k-12 system;
4. Developing competency profiles to promote work readiness or assessment tools similar to the Industry ASK;
5. Better strategies for engaging workers at a young age – including on the job training and skill development;
6. Facilitating changing employer practices including development of HR policy samples and a focus on competency-based hiring and training programs;
7. Develop industry specific job-readiness or education committees;
8. Develop sector specific "academies" or high school training programs at the high school level;
9. Reforming or changing curriculum in the K-12 system;
10. Improve industries connection and influence over post-secondary training programs, including dual credit programs.