

# MARINE PEOPLE PARTNERSHIP

STUDENT INTENTIONS AND PERCEPTIONS SURVEY:  
MI'KMAQ SCHOOLS

REPORT OF FINDINGS, ANALYSIS AND RECOMMENDATIONS

Report prepared by the

Institute for Ocean Research Enterprise  
(IORE)/Centre for Ocean Ventures and  
Entrepreneurship (COVE)

Dr. Sherry Scully and Anna Naylor

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## Table of Contents

Executive Summary .....	6
Introduction .....	9
Impetus for the Study.....	10
Benchmarking the Current Study .....	10
Objectives of the Study .....	12
Background .....	13
Ethics and Approvals .....	13
Survey Design and Modifications .....	14
Pilot Study .....	15
Sample Group.....	16
Methodology.....	16
Data Analysis .....	17
Sample Group Demographic Data.....	19
Gender.....	19
Grade.....	19
Participation by School.....	20
Did any of your parents or guardians go to College or University or do they go now? .....	20
Post-Secondary Pathway Intentions.....	23
After I finish high school I would like to; (pathway).....	23
Perceived Influencers .....	26
I think the best ways to get information about my future goals and career are; .....	26
What job are you most interested in doing when you are older? .....	27
What subjects will help you to get your top choice of job?.....	28
What skills will help you to get your top choice of job? .....	30
Table 2: Top-Three Skills Associated with each Job Group.....	30
Interprovincial Mobility .....	31
After I finish high school I would like to; (mobility) .....	31
By gender .....	32
By grade.....	32
Mobility Outside of the First Nations Community.....	33
Oceans-Oriented Education and Careers (Awareness).....	35
Types of Careers in the Marine Industry .....	35

Are you interested in a job in the marine industry? .....	36
By gender .....	36
If you're not interested in a job in the marine industry, explain why;.....	37
<b>Curriculum Relevance .....</b>	<b>38</b>
At school my teachers help us understand how the things we learn in math and science relate to real world jobs.....	38
Interest in Careers in Skilled Trades and Technology .....	39
Do you know someone who works in a skilled trade?.....	39
Are you interested in a job in a skilled trade? .....	39
By gender; .....	40
Perceptions of Skilled Trades .....	40
What statements do you believe to be True/False about skilled trades? .....	40
Table 5: Perceptions of Interest, importance, and opportunity (True/False) .....	40
Table 6: Perceptions of Cognitive Requirements for skilled trades jobs.....	41
Table 7: Perceptions of social desirability in terms of prestige, compensation, and approval .....	42
The Influence of Perceptions on Interest .....	43
Perceptions of Career Opportunities in Nova Scotia .....	44
Do you have family or friends who live in NS but work in another province? .....	44
Interprovincial Mobility .....	44
Which statements do you believe are true or false about jobs in Nova Scotia? .....	45
h) There are good jobs available within the Mi'kmaq communities (additional question); .....	47
Career Consideration Drivers .....	48
Insights & Recommendations.....	52
References.....	55
Appendix A: Letter to Teachers .....	57
Message to Teachers.....	57
Appendix B: Career Categories .....	60
Appendix C: Ethics Approval.....	61

## Executive Summary

In June of 2017, in partnership with the Principals from **Mi'kmaq Kina'matneway schools** in Nova Scotia, a study was initiated involving students in grades 6-12. The Student Intentions and Perceptions survey, formerly used in a province-wide study of middle-school students, was employed a second time for this study. The survey tool given minor modifications (i.e. concepts of community and elder influence were added to some questions) to customize the tool to the MK community. Survey responses from 83 students representing 5 schools were gathered and analyzed. The sample size was small but sufficient to draw some general conclusions about common attitudes, perceptions and intentions among First Nations youth. However, due to small within-grade sample sizes, it would not be appropriate to draw conclusions about age/grade level correlations with the constructs of study.

The survey tool was comprised of 17 key questions that solicited responses to key constructs relating to awareness, intention, perceptions, and attitudes regarding careers in the region generally, and careers relating to the marine industry and skilled trades and technology roles specifically.

The survey data provided insights into;

- the perceptions young people have of alternative education and career pathways
- how and when those perceptions are formed, and who has strongest influence over them
- young people's career and mobility intentions
- young people's perceptions of minimum requirements for jobs and education

Understanding the perceptions of marine-related and trades/technology careers among today's youth and understanding their intentions and influences will provide useful insights to inform recommendations for the design of future awareness/exposure building initiatives and career development programs to help us shift the dial on this workforce challenge.

It was hoped that surveying younger students (grades 6-9) would provide useful insights into understanding when and how their career perceptions are formed, which could signal optimal periods for targeting career counseling and awareness and exposure building programs. The addition of senior students (grades 10-12) provided some insights into the progression of career literacy and career maturity, and demonstrated that the strong opinions held by some younger youth could be shifted with age, awareness, and proximity to the career or mobility decision. This age correlation was most strongly apparent in expressed mobility intentions, and in considerations of non-traditional pathways after completing high school.

This report provides a detailed analysis of the data, as well as a summary of insights and recommendations for career literacy interventions and programs aimed at the grade 6-12 cohort. Among the key findings of this study are;

- Nearly a third of First Nations youth sampled expressed an interest in leaving the province to study or work, while another fifth of students indicated that they weren't sure if they would stay or leave. If we combine those with the intention to leave, with even a fraction of those who weren't sure, we could potentially be facing the loss of a significant proportion of the First Nation communities' youth – or at the very least, the disengagement of those youth from regional pathway exploration activities. The data suggests that the intention to leave is not the result of a push from the region (i.e. due to poor economic conditions, and poor employment prospects), but rather is due to a pull to other regions (i.e. the allure of mobility itself)
- The question of mobility was addressed a second time towards the end of the survey to evaluate consistency of response. Both intention to leave and intention to stay in Nova Scotia decreased, while uncertainty increased significantly from 19% to 40%. Significantly more males than females expressed uncertainty in this question (47% versus 33%). This indicates that the survey itself provoked students to think more critically about their future options. It also demonstrated the malleability of youths' attitudes and intentions when they are given an opportunity to consider new information, ideas, and pathway. This in turn illustrates the potential positive influence of career literacy initiatives to broaden young people's exploration of career options.
- Responses demonstrated that students form strong early bias against certain education and career pathways, and a correspondingly strong bias towards a socially-endorsed academic pathway – even without a specific career/credential outcome in mind. This means that First Nations youth may be narrowing down their options and disregarding those that don't align with their perceptions of valid, endorsed (by parents, peers, and community) options. This trend is consistent with that found among youth in the general population of Nova Scotia.
- A significant proportion of participants expressed fear, lack of interest, or outright aversion to oceans as their reasons for not considering an ocean-related career. This needs to be addressed – especially in a province that is literally surrounded by oceans. This suggests a need for more experiential learning opportunities, in and out of school, that expose youth to oceans in safe, engaging, and adventurous way. There is an immediate need to replace fear of the oceans with curiosity, and reluctance of getting wet and dirty with the thrill of exploration and discovery. Outdoor leadership experiences that combine First Nations traditional knowledge and culture with ocean awareness and education could have a powerful impact on awareness and attitudes towards the ocean.
- Only ~2% of First Nations youth expressed an interest in pursuing an entrepreneurial pathway. Interestingly, of the ~2% of students who did indicate an interest in entrepreneurship, none of them expressed an interest in opening a business that was skilled trades-related. This suggests that, while students have some awareness of this option, entrepreneurship is not the pull that draws students along a skilled trades career pathway.

- It is important to recognize the value of both an informed yes and an informed no. A key outcome of any awareness and exposure program is to support students in making an informed decision about whether or not to pursue a particular pathway. Without some awareness, students are too often dismissing some career options without consideration, or defaulting to others, with similarly little information.

This report provides evidence based observations and recommendations for future career literacy programs and engagement initiatives. While the data captured in this report are interesting and informative in their own right, this study will also serve as a benchmark to evaluate the impact of awareness efforts going forward.



## Introduction

Nova Scotia is witnessing several emerging and accelerating sectors across the marine industry, including shipbuilding, boat building, ocean technology, tidal energy, and fishing and aquaculture. Growth in these sectors are paralleled by demand for workers in skilled trades & technology roles, and in oceans-oriented professions and applied sciences to sustain the activity and growth of these sectors. This study provides some insights into the enthusiasm youth in Mi'kmaq communities in Nova Scotia have for these regional careers. Interest and intention for careers in skilled trades and technology, as well as careers in the marine industry remain hampered by persistent bias, lack of awareness, and misinformation<sup>1</sup>, which in turn produces a recruitment challenge to employers and post-secondary education programs.

Encouraging youth in First Nations communities to consider careers across the broad marine industry has a second key objective that is related to the economic and employment benefits of emerging sectors. The breadth and scope of marine-oriented careers across the region and across the sectors offers varied options to young people to pursue their dreams while remaining in the province or within First Nations communities.

Improving young peoples' awareness and understanding of local career opportunities is an important ingredient in meeting these objectives for strengthening the regional economy. Understanding youth perceptions of marine-related careers, and understanding their intentions, drivers, and influences, will provide useful insights to inform recommendations for the design of future awareness-building initiatives aimed at alleviating the regional workforce challenge.

In light of insights gained from a national study examining workforce development in the greater marine industry<sup>2</sup>, it was imperative that we look deeper into the issues of career literacy among youth, as an essential but tenuous link in the human capital equation. The location of IORE within Nova Scotia made this region ideal for the pilot launch of the original Student Intentions and Perceptions survey (June 2016), which targeted the perceptions, beliefs and attitudes of youth in the province with regards to careers in NS generally, and careers related to the marine industry, in particular. Upon analysis of the data from the pilot study, it was observed that our province's First Nations and Aboriginal communities were significantly under-represented, and thus, a second study was launched (June 2017) in collaboration with our First Nations schools, to conduct a second study that focused entirely upon the responses of this community's youth.

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<sup>1</sup> Fenwick, 2006; Minister's Panel on Education, 2014; Tyler, 2013; Guest, Lotze, and Wallace, 2015; Scully, 2015

<sup>2</sup> Scully, Sherry. (October 2015). The Marine People Partnership: The challenges, needs and opportunities for strategic workforce development in the greater marine industry. The Institute for Ocean Research Enterprise (IORE)

## Impetus for the Study

The Marine People Partnership (MPP) is an initiative arising from the value proposition for the National Shipbuilding Procurement Strategy (NSPS). This initiative has completed its initial research phase, and has presented a report to Industry Canada (Scully, 2015), outlining the challenges, needs and opportunities for strategic workforce development in the greater marine industry. This report identified several key priority areas that have particular relevance to workforce issues in Atlantic Canada. These include;

- Reversing the bias and stigma of the marine industry in particular, and of trades and technology roles in general
- Addressing gaps in learning and coaching in the mindset and skills of entrepreneurship
- The need for career literacy programs for young people and their parents
- Opportunities to develop additional exposure and awareness building programs with broader reach and focus
- Understanding the drivers and motivators of inter-provincial mobility that draw youth away from our region
- Understanding how perceptions are shaped by regional career opportunities and media coverage, and how this influences student intentions early in their education and career pathways

Understanding the perceptions of marine-related careers among today's youth, and understanding their intentions and influences, will provide useful insights to inform recommendations for the design of future awareness/exposure building initiatives to help us shift the dial on this workforce challenge.

## Benchmarking the Current Study

The original survey study was modeled on a previous 2006 High School Graduate Intentions Survey<sup>3</sup>, which examined the post-secondary intentions of grade 12 students. The study captured young people's intention to pursue post-secondary education (college and University), or to enter into employment immediately, and it captured students' perceptions of key influencers (i.e., parents) in their post-graduation intentions. This study will provide a comparison point generally, however the current study has been expanded to capture data relating to student perceptions & intentions, motivation, and influence relating to careers within the marine industry specifically, and the broader STEM category generally. The pilot survey was modified to accommodate a younger and broader sample group (i.e., grades 6-9). This present study was further modified to sample an even broader group of students (grades 6-12) to gain insight into if and at what age, perceptions and intentions regarding career plans begin to shift or become more firmly embedded among youth in Indigenous communities.

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<sup>3</sup> Nova Scotia Department of Education, December 2006.

A recent report by the NS Department of Education and Early Childhood Education Enrollment by Board and School for 2014-2015 indicated that there is a growing problem with youth who do not pursue post-secondary education after grade 12. For example, 32% of NSCC and 22% of Maritime students who entered a university did not return after their first year. This report provides current and timely statistics concerning the transition successes and challenges of current cohorts following post-secondary education pathways. These statistics will form a benchmark for comparing intentions reports by younger cohorts of students.

This study also evaluates constructs relating to career literacy and career maturity, which refer to an individual's awareness of the myriad career options available to them, coupled with the ability to make informed, appropriate career choices. There is very little current extant literature on these constructs. The most relevant literature examined young peoples' awareness of what is required to make a career decision and the degree to which one's choices are both consistent and realistic over time<sup>4</sup>. A related recent study<sup>5</sup> of career education modules presented in elementary schools in Alberta did find that students who participated in integrated career education reported that it had helped them to learn more about themselves and about careers. More importantly, students reported a heightened interest in learning more about careers and about the broad possibilities for their futures. *"If students can imagine their futures and become excited about these possibilities, then they may feel more connected to their education, see the relevance of their education, and be more interested in learning how they can attain their future life and career goals."* (pp. 18-19)

Ocean Literacy, or age-appropriate knowledge of the ocean's science and commercial qualities, and awareness of ocean-related careers and jobs, is a key construct being examined in this study. There is very limited extant literature on this construct; however, one recent study<sup>6</sup> did examine ocean literacy levels of Nova Scotia students, and reported low levels of awareness and understanding. This report will provide some data for comparison.

This research study also examines student intentions towards STEM-related careers. A recent study by WISEAtlantic<sup>7</sup> revealed that students have relatively poor awareness of the math and science requirements for STEM careers (or of the variety of STEM careers available to them). The analysis by Franz-Odendaal et al focused primarily on the career awareness and intentions of female students in Nova Scotia, but provides a point of comparison for this broader study.

This study also examined key influencers for young people. Industry reports have examined the influence of guidance counsellors<sup>8</sup> and parents<sup>9</sup>, and have shown that the career and education

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<sup>4</sup> Crites, 1978; King, 1989; Ohler, Levinson, & Hays, 1996

<sup>5</sup> Welde, Bernes, Gunn, & Ross, 2016

<sup>6</sup> Guest, Lotze, & Wallace. *Youth and the sea: Ocean literacy in Nova Scotia, Canada*, 2015.

<sup>7</sup> Franz-Odendaal & Blotnicky, *Career choices and influencers in science, technology, engineering and math: An analysis of the Maritime provinces*, January 2014.

<sup>8</sup> Freeman, Myra. Ministers Panel on Education. *Disrupting the status quo: Nova Scotians Demand a Better Future for Every Student*, October 2014.

<sup>9</sup> Nova Scotia Department of Education. *2008 Follow-up Survey of 2006 Nova Scotia High School Graduates*, 2010.

advice of career counsellors tends to be limited to traditional academic programs and options that may be more a reflection of the counsellors' preferences than the students'<sup>10</sup>. This finding was repeated in the report by Freeman, who noted, *'teachers and guidance counsellors have a bias toward University as the anticipated outcome of high school'*, which in turn attaches a stigma to other options that young people might want to pursue. This report also showed the influence of parents and proximal role models to inform the career choices of children through how they assign social value to choices, provide encouragement<sup>11</sup> or how they reinforce feelings of efficacy for a proposed choice<sup>12</sup>. These studies demonstrate how the messaging of valid or 'good' options communicated to children implicitly and explicitly throughout their lives. The current study also focuses on how and at what age these messages of validity (and stigma) begin to form and inform thoughts about children's futures.

## Objectives of the Study

Understanding the perceptions of marine-related careers among today's youth and understanding their intentions and influences will provide useful insights to inform recommendations for the design of future awareness/exposure building initiatives to help us shift the dial on this workforce challenge.

The data generated by this study will help to inform;

- Career literacy programs and coaching
- Career literacy programs relating specifically to interprovincial mobility
- Awareness and exposure building programs in grades 6-12
- Discussions and decisions regarding dual-credit and co-op programs in high school
- Decisions regarding a common digital career literacy platform
- Preferred channels for accessing youth with career coaching
- Involvement of proximal role models in awareness and exposure programs
- Recruitment and retention strategies for post-secondary institutions (PSIs), apprenticeship programs, and employers (entry level) in NS, and within Indigenous communities
- Marketing and social messaging strategies to influence youth perceptions of career opportunities in NS and within Indigenous communities
- Curriculum links with career opportunities (and skill relevance)

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<sup>10</sup> Scully, October 2015

<sup>11</sup> Leung, Wright, & Foster. *Perceived parental influence and adolescent post-secondary career plans*. High School Journal, 70, 1987.

<sup>12</sup> Bandura, Albert; Barbaranelli, Claudio; Caprara, Gian Vittoria; Pastorelli, Conchetta. *Self-efficacy beliefs as shapers of children's aspirations and career trajectories*. Child Development, 72(1), 2001.

And will provide insights into;

- the perceptions young people have of alternative education and career pathways
- how and when those perceptions are formed, and who has strongest influence over them
- young people's career and mobility intentions
- young people's perceptions of minimum requirements for jobs and education

## Background

Recent research has shown that Nova Scotia youth are experiencing a major problem with transitions from secondary to post-secondary education or jobs. There is a growing problem with youth who do not pursue post-secondary education after grade 12, coupled with a growing trend of inter-provincial mobility and out-migration that results in a net loss to Nova Scotia of ~1,000 youth/year. High post-secondary attrition rates result in delays of entry into the workforce, and diminished productivity for those students as they invest time and money in programs into which they are transitioning poorly (and/or not completing). The outcomes of this study will be;

- to examine the perceptions and intentions of First Nations school children in Nova Scotia to gain insights that will help us to support more secure and well-fitting transitions to post-secondary programs, especially those relating to emerging industries in the region
- to mitigate the out-migration of youth from our region (and from First Nations communities) by cultivating more optimistic perceptions of the breadth, scope and promise of career opportunities in the region

The data emerging from this survey could provide valuable insights into social perceptions of careers in trades & technology, engineering, ocean sciences and marine careers, and of factors that strongly influence the socialization and normalization of those perceptions. Surveying younger students (grades 6-9) as well as students who are nearing post-secondary transitions (grades 10-12) may provide useful insights into understanding when and how those perceptions are formed, and may signal optimal periods for targeting career counseling and awareness and exposure building programs.

## Ethics and Approvals

The proposal for this study was approved by the Mi'kmaw Ethics Watch committee, through the Department of Indigenous Affairs and Un'amaki College at Cape Breton University. (See Appendix C for copy of approval letter).

## Survey Design and Modifications

This study was conducted using an online survey comprising 17 core questions (5 demographics, 13 construct related). This study contained one additional question (question 6) which asked;

After finishing high school, I would like to;

- Live on** a Mi'kmaq reservation or community to study/work
- Leave** the Mi'kmaq community or reservation to study/work
- I don't know

This question was added to provide more insight into young Indigenous Peoples' mobility intentions with regards to their own communities, as well as their perceptions of the opportunities to remain within a community to study/work versus the opportunities or requirements to leave in order to pursue study/work.

Other minor modifications were made to tailor the questions or response options to the target group. These modifications included;

- Question 8; the addition of 'community elder' to the responses options
- Questions 10-12; the addition of two response options (*Stay close to my family and community; Have a job that I enjoy*)
- Question 17; the addition of 'community' (*My parents and community would be proud if I had one of these jobs*) to the true/false descriptions about skilled trades jobs
- Question 20; the addition of the true/false statement about jobs in Nova Scotia (*There are good jobs available within the Mi'kmaq communities*)

These modifications were all approved (and edited) by the key stakeholders.

The survey used a variety of question styles, including single response, multiple response, true/false, and open-text response. The survey was designed to assess several constructs relating to career intentions and perceptions for careers in the marine industry, including skilled trades, ocean research, entrepreneurship, and knowledge worker roles (i.e. engineering and architecture).

## Pilot Study

The original survey was piloted on Tuesday, January 19<sup>th</sup> with a grade 6 class from a school in the Strait Regional School Board. Students independently completed the online survey in a classroom with 4 observers who answered questions as they arose, and made note of common questions and areas of difficulty. The objective of the pilot study was to evaluate;

- **readability** of the survey (i.e. could students understand what is being asked, are the questions accessible to the broad reading abilities of the sample group),
- **reliability** (are any questions ambiguous, do students interpret questions the same way, do the observers interpret responses similarly),
- **validity** (do the questions solicit the desired responses, do the questions tap into the target constructs),
- **time for completion** (what is the range for completion, what is the average completion time)

The pilot included 26 students who reflected a diverse cross-section of youth in Nova Scotia (i.e. African Nova Scotians, First Nations, students from rural and urban communities, immigrant students). The first students to complete survey did so at the 10-minute mark, most students were completed within 20 mins (all but 3), and all students completed within 25 minutes. This information informed the instructions to teachers that were distributed along with the survey link when the survey was launched.

Observers found consistency in the interpretation of questions and in the types of responses that emerged. Very minor adjustments were made to the survey (i.e. Nearly the entire class asked ‘why does it say ‘other’’ in the gender question, and thus it was decided to omit this third option as it posed an initial distraction as students settled into the survey. The final open-text question asked students to identify the job they would like to do when older. Several students were unsure of specific job titles, and chose instead to write descriptive narratives of their future desired role. This open text response box was extended to allow for more room for these descriptive responses.

The modified survey tool used for this study was not piloted, but the questions were vetted and approved by stakeholders (i.e. Principals) from the targeted schools, and minor edits were made based on feedback from them.

## Sample Group

This study sampled students in grades 6-9 or 6-12 (the decision to extend the survey use to the older grades was left to the Principals) from the Mi'kmaq First Nations community in Cape Breton, Nova Scotia. The opportunity to participate in the study was extended to other First Nations schools across the province, however the schools that participated were all located in Cape Breton.

We received 85 survey responses from 5 participating schools. Two surveys contained only responses to a single demographic question, and so were discarded. The remaining 83 surveys were complete or nearly complete. Without knowing the total population of students within the communities who were provided an opportunity to respond, it was not possible to calculate a desired sample size, however based on population estimates (~400-600), it was determined by the researchers and by the stakeholders involved, that 83 responses was a reasonable and valid sample, and would be reflective of the population.

## Methodology

The study was launched through the schools as a link to a Survey Monkey survey tool. This link could be accessed with lap tops, PCs or hand-held devices. The survey was launched on Monday, June 2nd, 2017, and closed on Friday, June 23<sup>rd</sup>, 2017 at 4:30pm. Students were provided the link to the survey by their teacher, were given brief instructions for completion, and completed the survey during class time. The timestamp accompanying each submission indicated that no surveys were conducted outside of school hours, implying that none were conducted without the support and instructions from the administering teacher.

Upon completion of the survey period, the data were transferred as an Excel spreadsheet to the research assistant and principal investigator. At this point the data was only handled by the principal investigator and the research assistant. All working data was stored on the secure laptops of these two investigators. The Survey Monkey link was cancelled and the data deleted from the online host.

A primary analysis was then conducted that provided a summary and overview of each question in isolation. This was followed by a detailed analysis that examined predictive qualities and correlations between the variables.



## Data Analysis

The data was coded by the research assistant and the principal investigator, and was separately and simultaneously analyzed by the two investigators to evaluate variance/consistency in findings (validity). The primary statistical analysis was conducted using pivot tables in Excel. A repeat of the analysis was conducted using SPSS to validate the analysis. A thematic analysis (for open-text responses) was conducted in Excel.

Open-text responses were analysed in full (all 83 responses). Responses were analysed for common themes and coded according to those themes. The themes from the original data were re-used for this analysis, and unique responses were also captured and new codes adopted as necessary. Generally, the top 3-5 (frequency) responses were reported, although other less-common responses were also examined if their low-response rates were noteworthy.

Validity of codes was established by having the lead researcher and the secondary researcher code the same sets of responses independently and comparing the results.

# Demographic Data

83 students in grades 6-12, from five schools participated in the survey

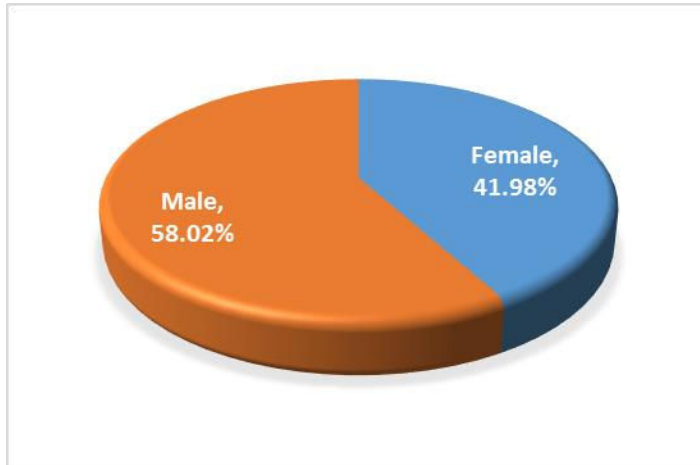
The sample group included more responses from males, and more responses from senior students (i.e. grades 11-12)

Personal, potentially identifying demographic data was not solicited (i.e. religion, family structure, socio-economic level)

Data summaries are provided for amalgamated data only (not at the school level) as participation levels at the school and grade level were not high enough to be confident in preserving anonymity and confidentiality

## Sample Group Demographic Data

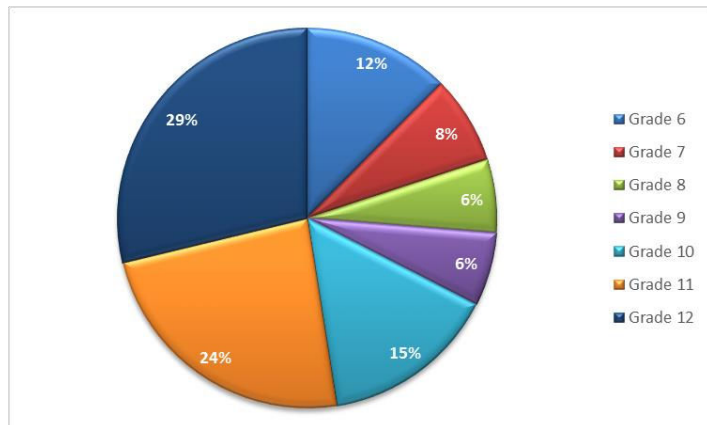
### Gender



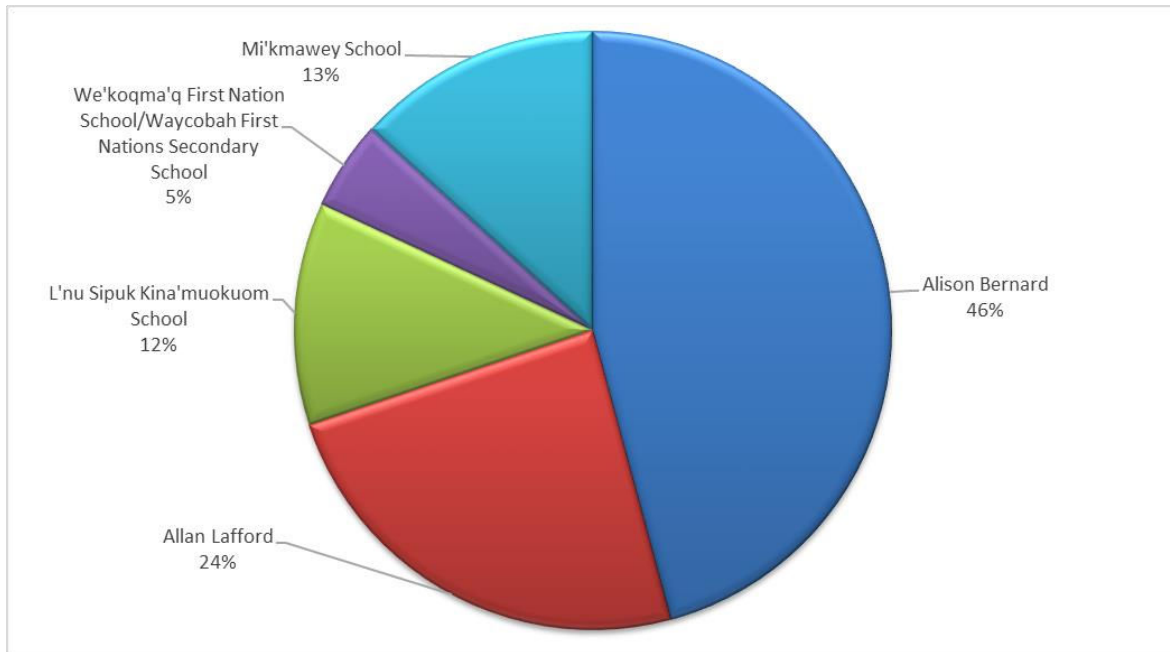
Significantly more males than females responded to the survey questionnaire.

### Grade

All seven grades were represented. It is important to note that grades 11 and 12 were proportionately more represented, providing more than half of total responses. The original study cohort (grades 6-9) represented a third of total responses. This will be considered in this report where grade-related correlations within the data are examined.

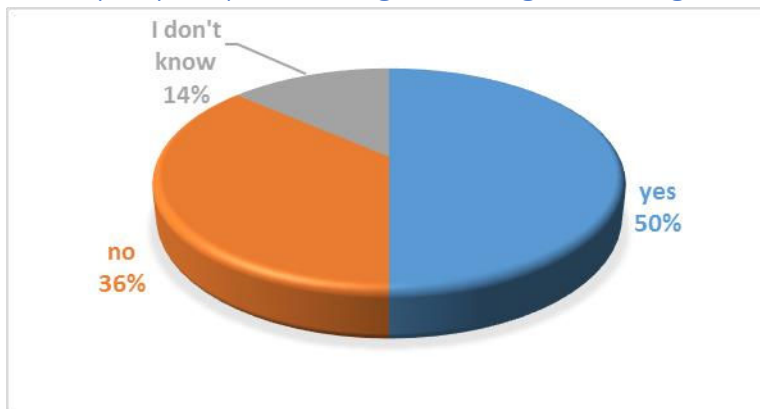


Participation by School<sup>13</sup>



Participation by school, as a percentage of total participation shows that Alison Bernard school was over-represented within the total sample group. Where participation levels ranged from 5% to 46%, it is difficult to ensure anonymity of data by school, and thus this report will only include amalgamated results.

Did any of your parents or guardians go to College or University or do they go now?



Research has shown that parents are powerful influencers in young peoples attitudes, biases, and choices about their future<sup>14</sup>. Research has also shown that parental participation in postsecondary education is a powerful predictor of student pursuit of the same<sup>15</sup>.

<sup>13</sup> As a percentage of Total Participation

<sup>14</sup> Bandura, Barbaranelli, Caprara, & Pastorelli, 2001; Bergen, 2006; Dietrich, 2013; Leung, Wright, & Foster, 1987; Young, Friesen, & Borycki, 1994

<sup>15</sup> Hango & de Brouker, 2007

More than 86% (yes and no) of students showed an awareness of their own parents' education pathway, and this response rate did not vary significantly with gender or grade. Awareness is a strong predictor of career maturity<sup>16</sup>, and indicates some level of discussion in the home about education pathways and options. This data will be analyzed to determine its influence on youth education and career intentions, and on perceptions of career options and opportunities.

The accuracy of the youths' awareness of parents education does come into question, as the 'yes' responses are significantly out of proportion with the actual rate (~46%) reported by adults ages 25-64 in the National Household Survey 2011<sup>17</sup>. This might be explained by participation without completion in post-secondary education, or may reflect youth's idealistic view of their parents (i.e. where they lack information or confirmation, they assume their parents have completed some form of post-secondary education). This in turn demonstrates that perceptions of parents education levels is not a perfect proxy for true awareness, or for the assumption that the perceptions are informed by career/education discussions at home.

There were some differences in awareness of parents' education by grade, with more junior students (grades 6 & 7) indicating that they didn't know. This suggests that fewer discussions about career, and about pathways to careers may be occurring between younger students and their parents, or that career discussions have not focused on parents' own experiences as points of reference.

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<sup>16</sup> Carpenter, 1993; Welde, Bernes, Gunn, & Ross, 2016; Zimmer-Gembeck & Mortimer, 2006

<sup>17</sup> <http://www12.statcan.gc.ca/nhs-enm/2011/dp-pd/prof/details/Page.cfm?Lang=E&Geo1=PR&Code1=12&Data=Count&SearchText=Nova%20Scotia&SearchType=Begins&SearchPR=01&A1=All&B1=All&GeoLevel=PR&GeoCode=12>

# Data Analysis

During middle school a strong bias is established for traditional academic pathways

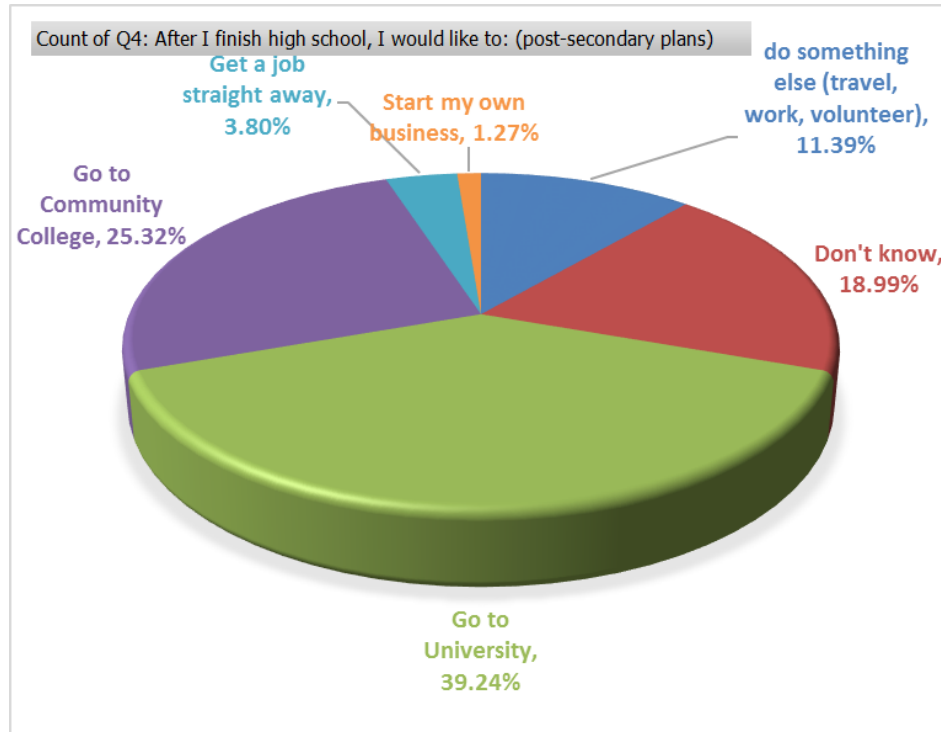
Attitudes and intentions are malleable and changeable with exposure, awareness and information

Half of First Nations youth express an intention to remain in the region following high school (in contrast with 1/3 of youth from the general population who intend to stay)

The majority of regional First Nations youth are not interested in a career in the marine industry, however responses reflect lack of awareness of marine-oriented career options

## Post-Secondary Pathway Intentions

After I finish high school I would like to; (pathway)



Nearly 65% of students reported an interest in continuing with post-secondary education immediately following high-school. This is considerably higher than the present rate of tertiary attainment of 53% (among adults aged 25-64), according to the 2015 OECD report<sup>18</sup>, which shows a trend towards (expectations for) post-secondary education, or increased optimism among young people in their abilities to participate and persist in the tertiary system. Persistence in post-secondary, as reported by OECD do indicate that roughly 20% of combined first-year students in college/University do not remain in their programs beyond first year<sup>19</sup>, and thus the significant gap between actual attainment and expected attainment may be explained by persistence challenges.

Higher reported intention may also reflect a growing preference for post-secondary education arising from the coaching and expectation-setting by parents and community. OECD found that 73% of students with higher education have a parent with higher education. Parental educational status was found to be a predictor of post-secondary intention in this survey as well. Among students who indicated that their parent/parents/guardian had gone or were presently attending a College or University, 35% also

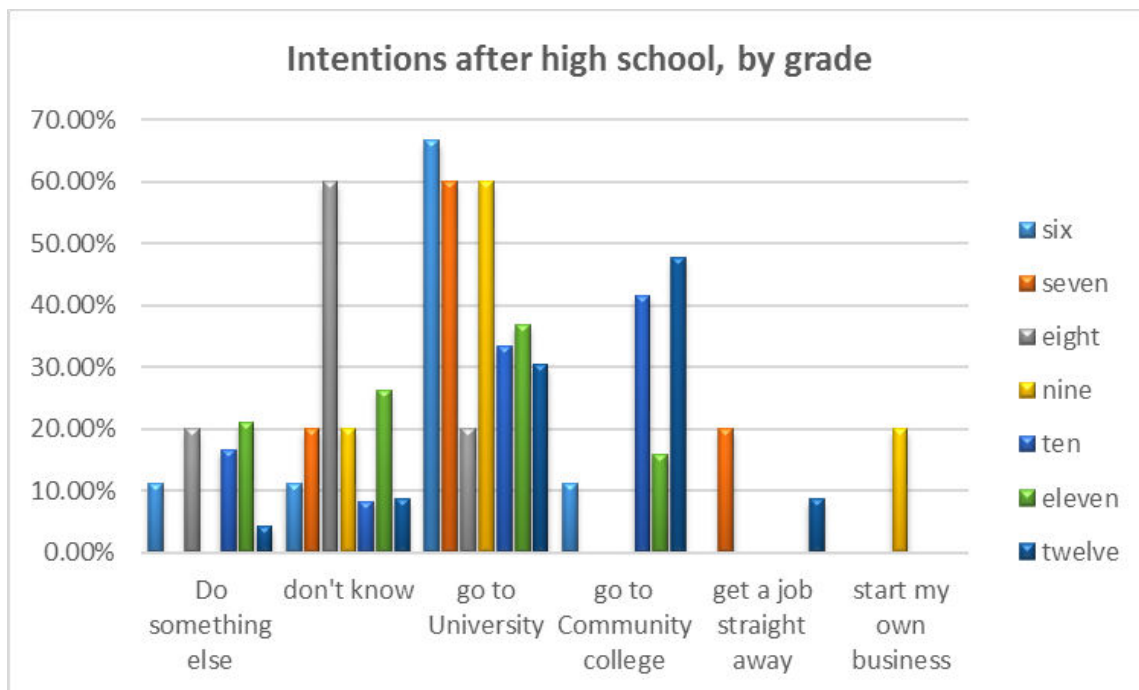
<sup>18</sup> Education at a glance 2015. (November 24, 2015). OECD Indicators.

<sup>19</sup> Andrew Parkin and Noel Baldwin. Persistence in Post-Secondary Education in Canada: The Latest Research. [http://www.yorku.ca/pathways/literature/Aspirations/090212\\_Persistence\\_EN.pdf](http://www.yorku.ca/pathways/literature/Aspirations/090212_Persistence_EN.pdf)

expressed this intention, while 50% indicated that they weren't sure what they wanted to do after highschool.

By grade;

These results did show some variation by grade, with more students in grades 6, 7, and 9 reporting an intention to go to University (i.e. 67%, 60%, and 60% respectively). In grades 8, 10, 11 & 12 however, this intention fell considerably (i.e. 20%, 33%, 37%, and 30%). More significantly, no students from grade 7,8 and 9 reported an intention to pursue Community College, suggesting that during middle school a strong bias is established for traditional academic pathways. This bias does appear to erode by high school, however, with intentions to attend Community College soaring into the 40% range. This 'new reality' may reflect more awareness of career options, and career pathways, or may be tied to course selection realities in high school (i.e. academic math) that limit some pathways and highlight others.



Nearly half (48%) of graduating (grade 12) students indicated their intention to pursue further education at Community College, with another 30% intending to pursue studies at University. These data are consistent with the findings from a 2008 follow-up survey of Nova Scotia high school graduates, wherein 74% of students reported being engaged in some form of higher education<sup>20</sup>, and bodes well for a future where completing tertiary education is a key indicator of social success<sup>21</sup>.

<sup>20</sup> (Nova Scotia Department of Education, 2010)

<sup>21</sup> (Finnie, 2012)

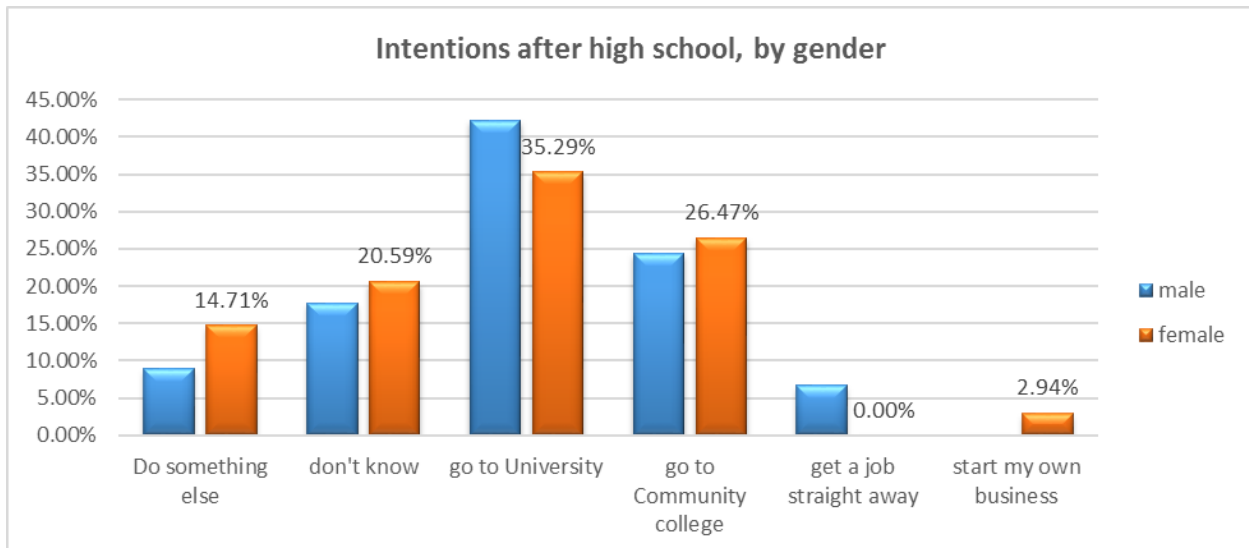


Roughly 22% of grade 12 students surveyed indicated that their educational pathway would likely end (do something else; not sure) following high school, which is slightly lower than the OECD findings<sup>22</sup> which tend to be more in the 25% range. These students selected other options that included; get a job (9%), do something else (4%), or expressed that they weren't sure what pathway they would follow (9%). This is in contrast with grade 8 students who expressed the most uncertainty (60%), and grades 10 students who expressed the least (9%). Interestingly, grade 9 students were the only group to indicate an interest in starting a business (20%), which may correlate with curricula oriented at entrepreneurship in that grade cohort.

This reinforces the opportunity to get young people thinking broadly about their pathways early in their educational careers, as research has shown that students who establish clear career goals are more likely to persist in their pursuit of tertiary education<sup>23</sup>. Early exposure to a broad range of career types provides greater opportunity for youth to establish a goal, and in turn, engage in both their education and, later, their work lives.

By gender;

Females were slightly less likely to report planning to attend University, and more females reported an intention to attend community college. More females also reported being uncertain about their next steps. These gender differences in intentions are the inverse of women's current (higher) rates of university participation<sup>24</sup>, and contrast with the relative confidence and certainty expressed by females in other research studies.



<sup>22</sup> OECD 2012. Grade Expectations: How Marks and Education Policies Shape Students' Ambitions, PISA OECD Publishing. PISA IN FOCUS. 2012/12 (December)

<sup>23</sup> Berger, Motte, & Junor, 2007

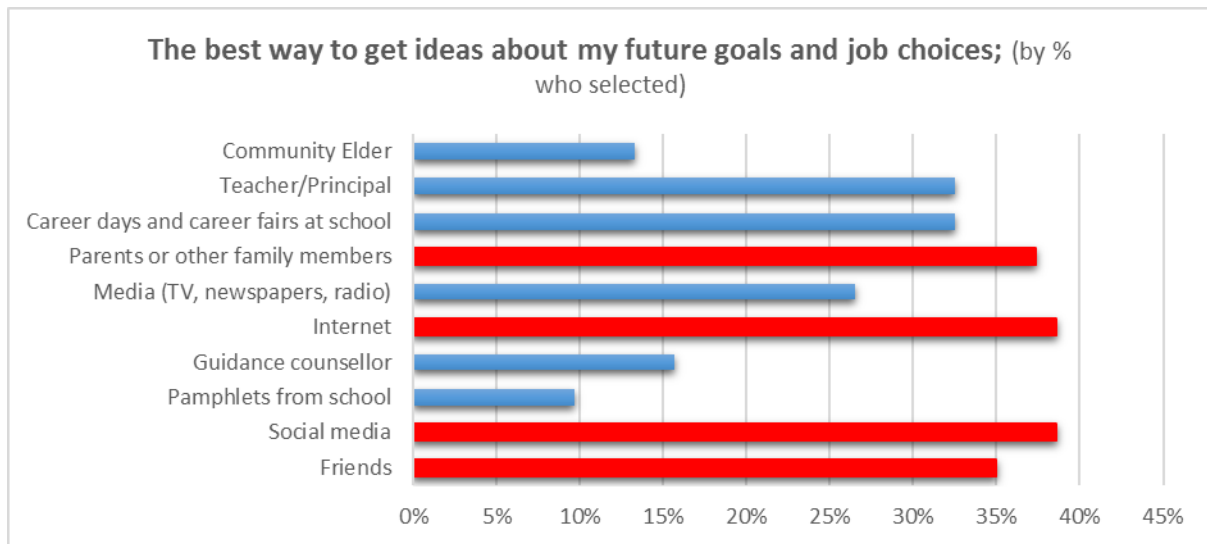
<sup>24</sup> Department of Finance, 2014; Hango and de Broucker, 2007

Also in contrast to the general population of study, more females (indeed – only females) expressed an interest in starting a business. These results may indicate an improving awareness of Community College programs, the gradual dismantling of notions of ‘masculinity’ of college pathways. Higher levels of uncertainty among females may relate to an over-emphasis on academic (University) pathways, resulting in diminished options for females who feel they are unable to, or uninterested in aspiring to that pathway. These results suggest an opportunity for more targeted career coaching with females across the grades, and with students in more junior grades.

### Perceived Influencers

*I think the best ways to get information about my future goals and career are;*

This question provided options from which students could select as many responses as they wished. The options included; career days at school, experience, teacher/principal, social media, media (tv, radio), internet, parents and other family members, friends, guidance counsellors, and pamphlets from school. Community Elder was included as an additional option for this customized study.

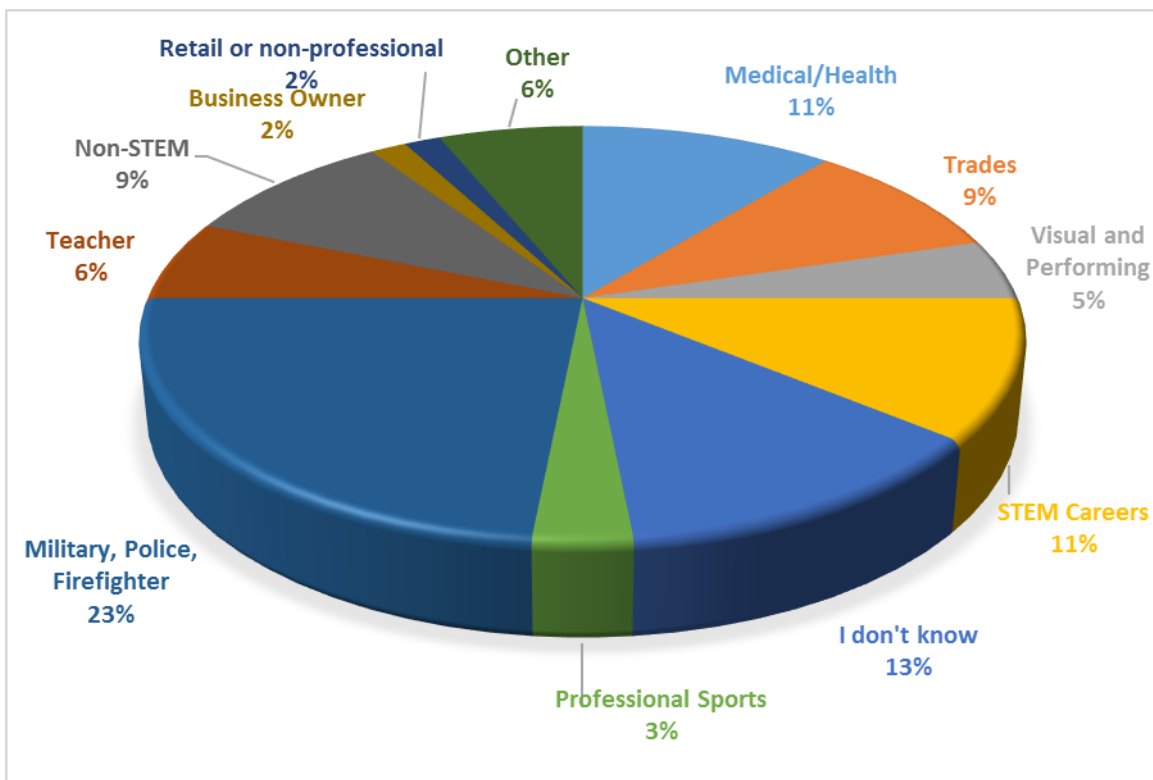


Participant responses indicated that the top four preferred sources of information about future goals and careers are social media (39%), internet (39%), parents & other family members (37%), friends (35%). Information sources that received the lowest responses from students included pamphlets from school, Community Elder, and guidance counsellors. These low responses to more traditional sources of career information suggest that young people do not seek out and/or trust these sources for career coaching as much as they do more proximal or self-directed sources of information.

This may suggest that the roles of guidance counsellors have been limited (or perceived to be limited) to other counseling roles. This also reflects the general trend away from the reliance on the printed word, and a preference for (and relatively higher trust for) digital sources of information. These findings are consistent with the work by Holowiak-Urquhart and Taylor<sup>25</sup> and the public perception in Nova Scotia<sup>26</sup>.

A possible explanation for the low identification of Community Elders as key influencers may be that their guidance and direction may be so common-place and ubiquitous that youth don't recognize 'coaching' when it is occurring. The powerful influence of Elders and other community members may be so well embedded that youth themselves don't recognize it, and instead identified more palpable or explicit forms of career coaching.

What job are you most interested in doing when you are older?



The entire sample of open-text responses to the question “*What jobs are you most interested in doing when you’re older?*” were analyzed and grouped into similar themes. Non-STEM professional roles include lawyers, accountants, bankers, architect, etc. Medical and Health professions included doctors,

<sup>25</sup> Holowiak-Urquhart & Taylor, 2005

<sup>26</sup> Minister’s Panel on Education, 2014

nurses, dentists, veterinarians, etc. STEM careers included engineers and scientists. Visual and performing arts included artists, 'YouTuber', actors, author, dancer, musicians, singers, and film makers. A wide variety of skilled trades were captured under 'trades', including welder, electrician, mechanic, hair dresser, and chef<sup>27</sup>.

As expected, responses were varied and broad and ranged from traditional (i.e. doctor, lawyer, teacher) to non-traditional (i.e. Youtuber) careers. The results also revealed that some youth are still in the 'dreaming big' stage of their career maturity, with 3% focused on careers in professional sports, and 5% intent on careers in visual and performing arts. These responses reveal optimism driven by interest and talent, however discussions of dream careers is a necessary but insufficient part of career education.

Only 2% of participants indicated that they had entrepreneurial intentions (i.e. small business owner), which was consistent with the earlier pathway intention question. This reinforces the need for more entrepreneurship education and exposure earlier on and throughout the full education pathway, to support more strategic (and successful) than serendipitous (and risky) entrepreneurship among emerging workforces across the region.

Nearly a quarter of youth indicated an interest in military, firefighting or policing careers, which was significantly higher than the general population. A possible explanation for this may be that responses reflect careers that are most visible or highest profile in First Nations communities. Conversely, none of the students responding to the survey expressed an interest in a career in agriculture.

### What subjects will help you to get your top choice of job?

The notion of career maturity involves more than just the ability to choose a career goal. Previous studies have shown that the ability to understand the prerequisite qualifications and knowledge that are needed to pursue careers that are of interest<sup>28</sup>, and the ability to evaluate the likelihood of a goal in-light of one's individual competencies<sup>29</sup>, are also factors that contribute to career maturity. This latter factor is likely a stretch, and almost certainly an ego-deflating one for the cohort in question, however these abilities have been shown to begin to develop in early adolescence – between grades 5-9<sup>30</sup>.

Students were asked to identify which subjects would help them to get their desired job. This question, and the one that follows, provided insights into students' awareness of subject relevance to careers, and

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<sup>27</sup> See Appendix B: Career Categories for a summary of how student responses were coded by career category.

<sup>28</sup> Hartung, Porfelli, & Vondracek, 2005

<sup>29</sup> Crites & Savickas, 1996

<sup>30</sup> Hartung, Porfelli, & Vondracek, 2005

of the importance of courses in opening education pathways. Consistency between career choices and relevant subjects and skills demonstrated awareness and career maturity for students.

Subjects that received the highest frequency of responses overall were (in order); math, Information and Communication Technologies, and Language Arts. This suggests that young people are aware of the importance of core Essential Skills (numeracy, literacy, ICT literacy) across a wide range of careers. These responses may also reflect learner effects or participant demand characteristics (i.e. providing the assumed desired response).

Table 1: Top-Three Subjects Associated with each Job Group

Job Descriptor	Top 3 subjects
<b>Police Officer</b>	Physical Education, Math, Language Arts, Information and Communications
<b>Retail or Non-Professional</b>	Insufficient responses to report
<b>Professional Sports</b>	Physical Education, Technology, Math and Language Arts
<b>Stem Careers</b>	Technology, Math, Science and Information and Communication
<b>Medical and Health</b>	Science, Math, Information and Communication, Technology
<b>Trades</b>	Math, Science, Physical Education
<b>NON-STEM</b>	Information and Communication, Language Arts, Technology
<b>Teacher</b>	Information and Communication, Language Arts, Math, Drama
<b>Visual and Performing</b>	Drama, Information and Communications, Language Arts
<b>Business Owner</b>	Insufficient responses to report

Language Arts was the third-most frequent response, implying that students recognize the importance of literacy, but this response was inconsistent with responses to a later question that did not identify “good communicator” as a priority skill or competency.

A possible explanation for the relatively low-ranking of communication skills relative to Language Arts may be the perceived disconnect between the seemingly banal day-to-day communication skills that are employed in a workplace versus the cognitive skills that are connoted by this subject area (i.e. literature studies, compositional structures, prose skills). This requires that students make the interpretive step to recognize the important functional skills of language arts. Another possible explanation is that employment related language arts skills (i.e. verbal and oral communication) may be perceived as a ‘given’ for any pathway. And where a skill requirement is ubiquitous, it may seem unnecessary to specify.

## What skills will help you to get your top choice of job?

Students were also asked to identify the skills (or competencies) that would help them to get their preferred job. The chart below shows the top 3 skills selected by participants (out of 8 choices).

Table 2: Top-Three Skills Associated with each Job Group

Profession	Skills Required for the Job
Police Officer	Good with People, Hard working, Good Communicator
Retail or Non-Professional	Insufficient responses to report
Professional Sports	Hard Working, Leadership, Good with People and Creativity
Stem Careers	Problem Solving, Critical Thinker, Hard Working
Medical and Health	Good with People, Self Motivated, Hard Working
Trades	Hard Working, Follow Directions, Good with People and Creative
NON-STEM	Good with People, Good Communicator, Hard Working and Self Motivated
Teacher	Hard Working, Good Communicator, Creativity, Good with People, Leadership
Visual and Performing	Good with People, Creative
Business Owner	Insufficient responses to report

The skills that had the highest frequency of responses were (in order from most) were; good with people, hard working, and creative. The skills that received the lowest response overall were (in order, from least); inventive/innovative, structured, computer skills, artistic, organized, critical thinking, problem solving and leadership, and communication skills. These skills fall into a category identified as 21<sup>st</sup> century skills.

It is interesting to note that the skills that received the lowest responses (indeed, most were not selected at all) are the same as those that received the highest responses from employers in a recent competency assessment and workforce survey of oceans industries in Nova Scotia<sup>31</sup>. These student responses demonstrate very little awareness of the importance of 21<sup>st</sup> century competencies, but a strong awareness of more traditional notions of workplace skills (i.e. hard working). This might reflect the messaging that youth hear at school and at home about the importance of work ethic. The prioritized selection of 'hardworking' may also show participant demand effects (i.e providing the 'right answer').

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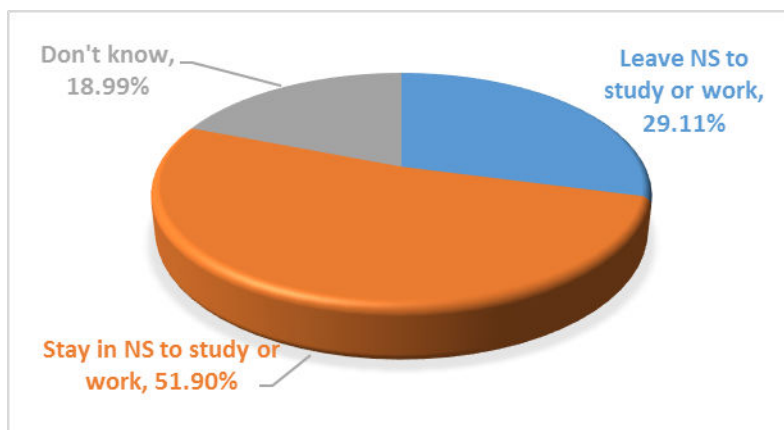
<sup>31</sup> Scully, Sherry. Ocean technology sector study: Competency Assessment and Workforce Study. Report of research findings and recommendations. IORE/OTCNS. June 2017.

The relatively low response rate for 'computer skills' might be explained by the same assumption of general competency as identified above for language arts.

Overall, responses did show some awareness of specific skills that are relevant some roles (i.e. Problem Solving, Critical Thinker, for STEM professions), but an over-selection of the same narrow skill descriptions for most roles.

## Interprovincial Mobility

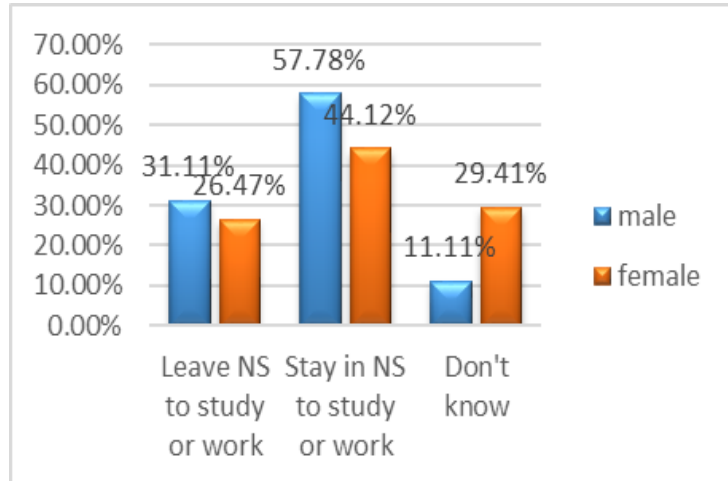
After I finish high school I would like to; (mobility)



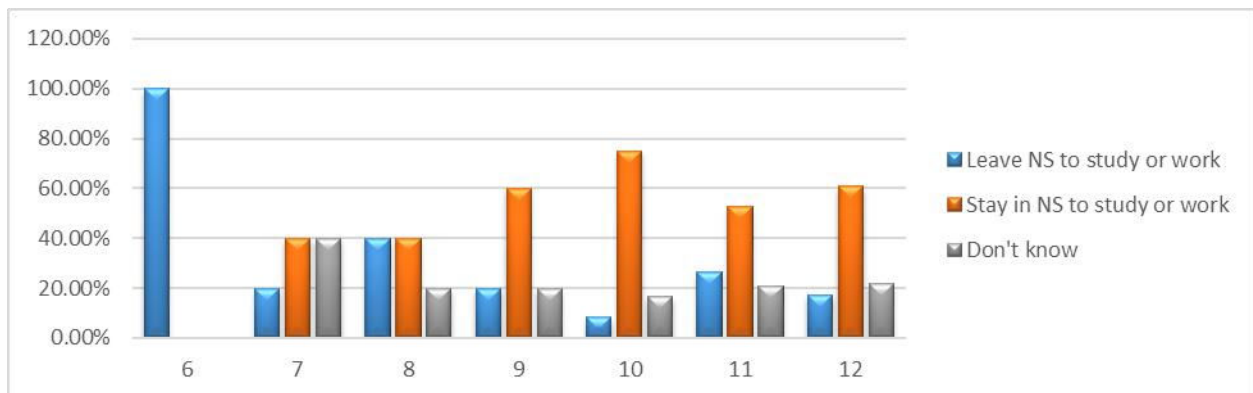
According to participant data, nearly a third of First Nations youth sampled are already considering leaving the province to study or work, while another fifth of students indicated that they weren't sure if they would stay or leave. This can be a worrying result that needs to be analysed against further data regarding perceptions of careers and opportunities regionally to determine drivers of out-migration.

### By gender

There were significant response differences by gender, with significantly more males reporting an interest in remaining in NS to pursue employment or education, and with significantly more females reporting that they didn't know. The intention to leave the province was fairly similar, with slightly more males than females expressing an intention to leave. These results suggest that more males than females have already put some consideration into these options, or feel more confident in expressing an intention with some certainty.



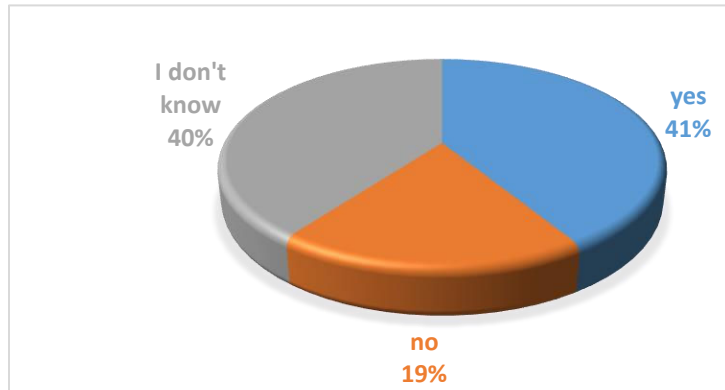
### By grade



There were also significant differences by grade, with 100% of grade 6 students surveyed indicating an intention to leave the province after high school. This intention to leave does decline, with lowest levels reported in grades 10 and 12, and a corresponding increase in the intention to stay also increasing with grade level. This may indicate some response bias from the small group of grade 6 students who were surveyed, and may reflect increasing maturity with more thoughtful and reflective (and balanced) responses from older cohorts. This is also in contrast to mobility trends that have occurred in the province, corresponding with an increase in the desire to move (and gain locational independence) as students get older.



A similar question was posed towards the end of the survey to evaluate consistency of responses. This question asked; “Do you plan to live and work in Nova Scotia when you’re older?”. Affirmative responses indicating an interest in remaining in Nova Scotia declined from 52% to 41%, and intention to leave also declined from 29% to 19%, while uncertainty increased from 19% to 40%. Significantly more males than females expressed uncertainty in this question (47% versus 33%).



The significant shift in responses could have been due to several factors; including learning effects -a type of order effect (i.e. as they worked through the survey they developed more awareness of the factors they need to consider in making decisions about their future, or became more aware of the options available to them, which led to less certainty), response fatigue, or a perception of near future (i.e. after high school) and distant future (i.e. live and work when older). The possible learner effects of the survey can be considered a positive outcome of the survey, as they have prompted students to think more about their future options. This response shift parallels that from the general population in the original provincial study.

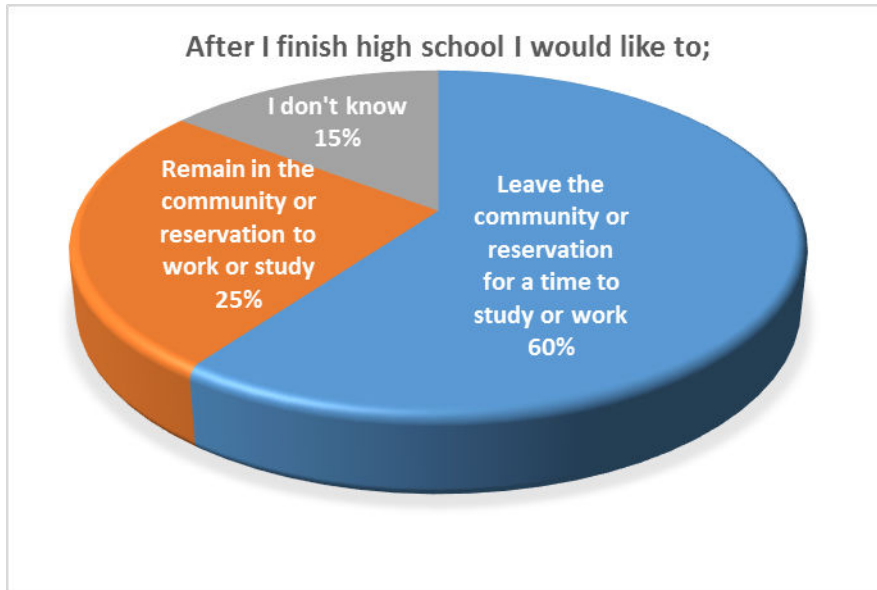
Among students who responded to the open-text question asking; “If you answered no to the above question, where do you plan to live?”, the majority of students indicated an intention to move elsewhere in Canada, followed by other locations within the province, and USA.

### Mobility Outside of the First Nations Community

An additional mobility question was asked in this survey that specifically related to mobility out of the First Nations community. The question asked;

**After I finish high school I would like to:**

- Leave the community/reservation for a time (i.e. to study, work, travel, etc)
- Remain in the community/reservation to study and work
- I don't know



This question was developed with the assistance of the key stakeholders, and was intentionally written with the modifier terms '*for a time*' to ensure that students could feel comfortable with the idea of temporary mobility, as youth in First Nations communities are often strongly socialized to remain within the community. Results from this question indicated that 60% of respondents plan to leave

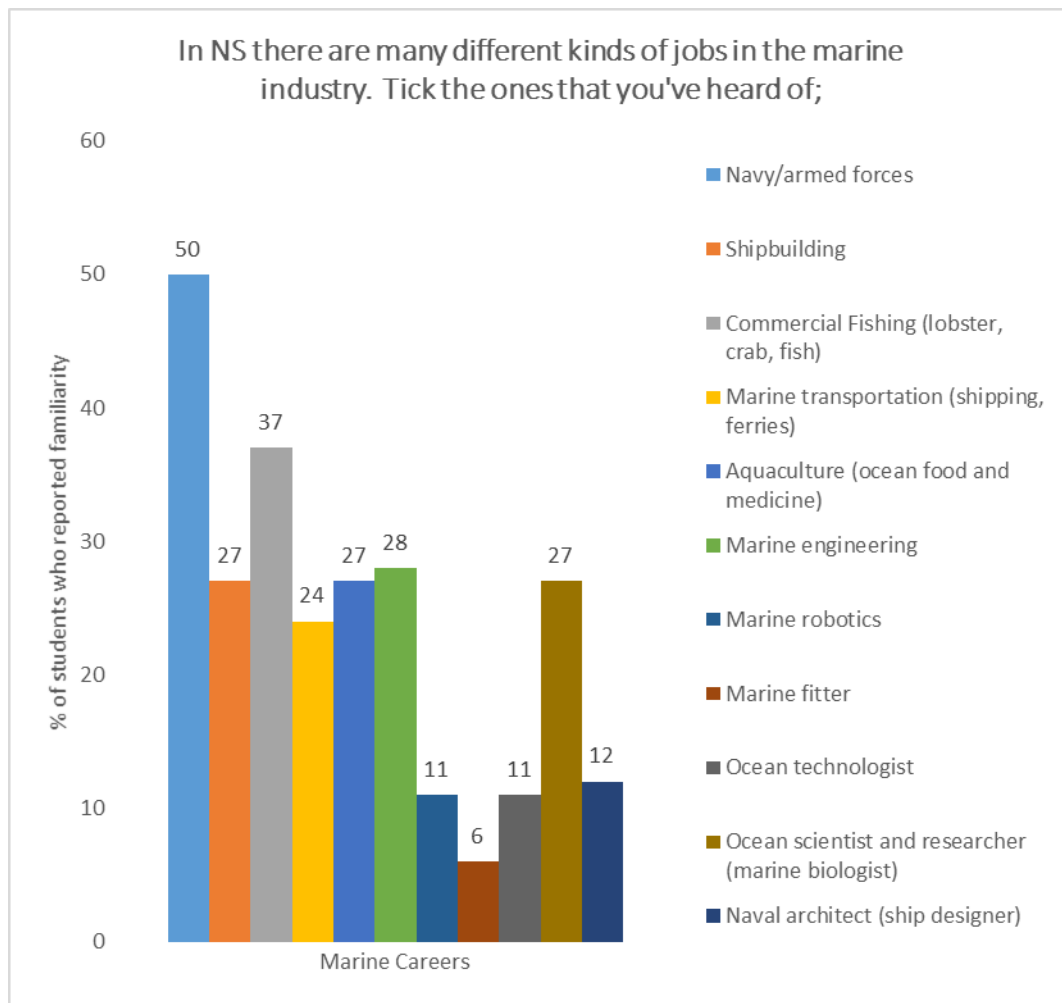
the community, at least temporarily, to pursue education or career. This may reflect a strong belief that the best educational or job prospects for early pathways exist outside of their own communities, or it may reflect a similar mobility motive (i.e. curiosity or independence driven interest in mobility) that was found in the general population of youth in Nova Scotia.

Females are slightly more likely to report an interest in remaining within the community or reservation to work or study. This response may be driven by higher reported uncertainty among females regarding next steps after high school. There were significant response variances by grade, with younger students (grades 6,7,& 8) being more likely to report an interest in leaving the community (i.e. average 80%), and older students (grades 9 -12) indicating that they were either less interested in leaving, or uncertain about their next steps.

## Oceans-Oriented Education and Careers (Awareness)

### Types of Careers in the Marine Industry

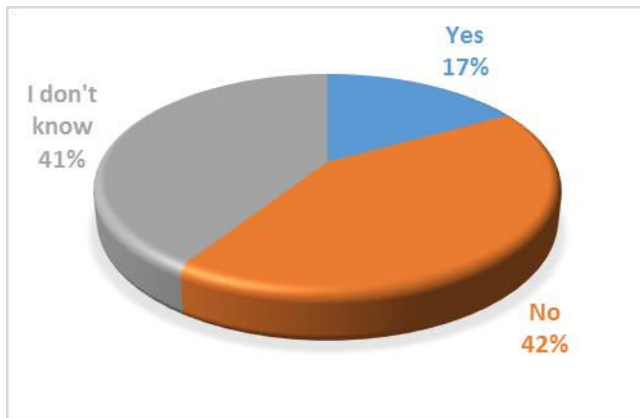
Students were asked to identify marine industry careers that they were familiar with, and had the opportunity to select any that they had heard of. This question was posed to serve two key objectives; primarily to assess participants' purported current awareness of ocean-oriented careers; and secondly, to ostensibly build some awareness of the scope and variety of ocean-oriented careers to prepare them to respond to the question that followed regarding interest in working in the marine industry.



The survey results show lower-than-expected awareness of careers in the marine industry generally. Given the regional profile of some careers, there was surprisingly lower awareness of shipbuilding (27%) and ocean scientist (27%). However, the results also showed a general lack of awareness of emerging regional sectors (i.e. ocean technology, marine robotics, marine engineering). This points to the

opportunity for more curriculum links and awareness programs that expand teaching and learning beyond marine ecological or life science concepts, to a broader range of oceans STEM topics and related careers and sectors<sup>32</sup>.

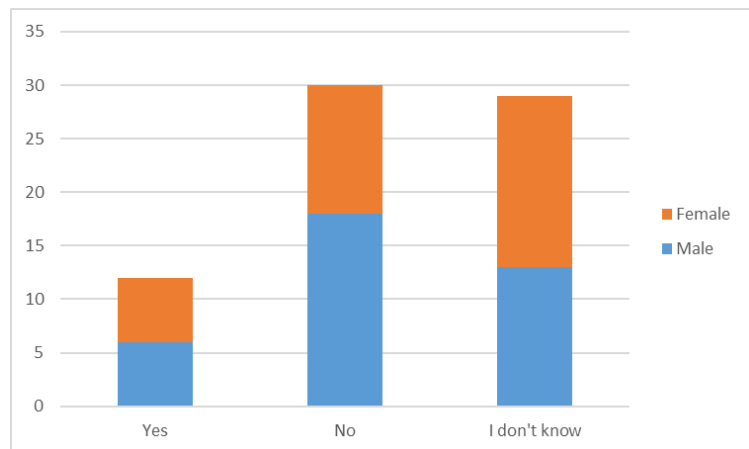
### Are you interested in a job in the marine industry?



Responses show a significant lack of interest and intention to pursue careers in the marine industry (17% affirmative responses). Based on previous question it is likely fair to suggest that this is due to students' lack of awareness of the broad range of career options available to them in the marine industry. It is notable that in a province surrounded by water, that nearly half (42%) of students communicated no interest in a marine oriented career.

### By gender

Males and females were equally likely to report an interest (yes) in careers in the marine industry. Males were slightly more likely to communicate a lack of interest (no), and slightly more females indicated uncertainty (I don't know), which is consistent with uncertainty responses to previous questions. This

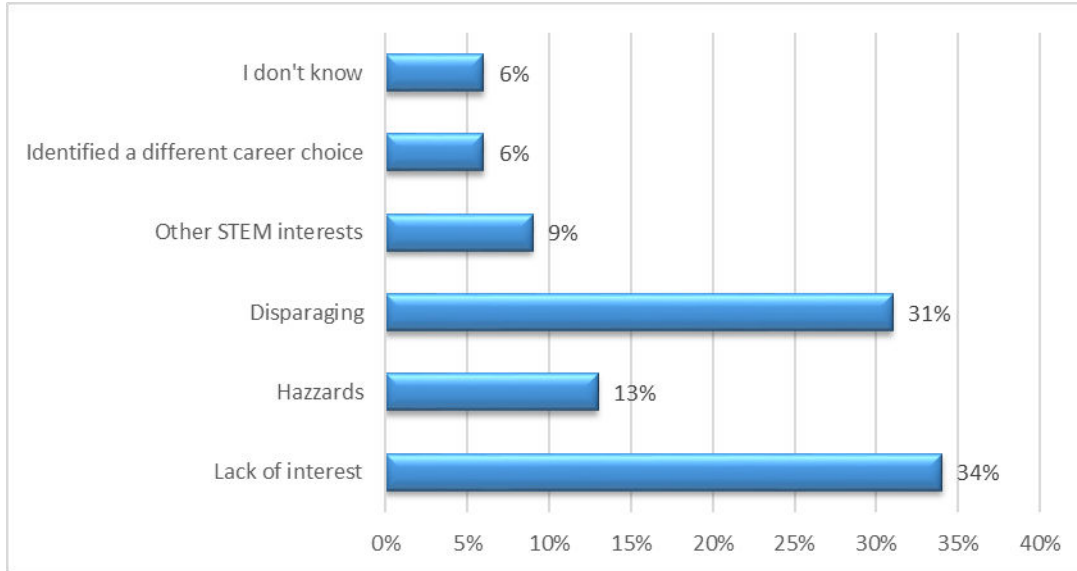


response might have been derived from the previous question that broadened their awareness enough to consider the option (or not provide a negative response).

<sup>32</sup> It is important to note that vocabulary may have been a limiting factor in student responses (i.e. Naval architect, aquaculture, marine fitter are terms that may have been unfamiliar). Response rates may have been higher if descriptions had been used (i.e. ship designer, farming food from the ocean, underwater welder, shipping and ferries), however this would have increased the reading requirements for the question and may have in turn produced more response fatigue, resulting in equally low response rates.

If you're not interested in a job in the marine industry, explain why;

Students were provided an opportunity to elaborate on their 'no' response with open-text. An analysis of these open-text responses identified common themes. The table below illustrates the frequency of responses that fell into those common themes.



The most common response (34%) indicated a general lack of interest in the Marine Industry, regardless of the career area or sector. Some examples of responses coded as lack of interest include<sup>33</sup>; *“doesn't seem like a job for me”*; *“Because I don't know anything about the marine industry”*; *“Was never a consideration or interest of mine”*; and, *“it simply isn't interesting to me”*. Lack of interest responses included responses indicating a lack of awareness or knowledge of the industry or of careers in the industry. On a positive note, this group presents the most opportunity to develop interest through exposure programs and experiential learning to shift their thinking. These students were less likely to communicate a negative perception, which is generally more difficult to overcome and remedy.

The second most common type of response was a disparaging response (31%) such as; *“I hate cold water”*; *“don't like the ocean”*; *“I hate the water!”*; and, *“seems boring”*. Responses identifying a hazard were the third most common response. Some examples are; *“Can't swim”*; *“Scared of sharks”*; and, *“Don't want to work and die”*.

When we combine disparaging responses with hazard responses, 44% of youth who provided an open-text response indicated that they either didn't like or were fearful of some aspect of the oceans. The expressed perceptions of students of a dangerous or undesirable industry reflect attitudinal and bias challenges which are difficult to correct and overcome. This demonstrates an important opportunity to provide more experiential oceans education broadly to all students, to allow students to develop more

<sup>33</sup> Comments were written verbatim, without correcting for grammar or spelling.

positive familiarities and relationships with the oceans around them, and to change the narrative and perceptions of oceans-related careers in Nova Scotia.

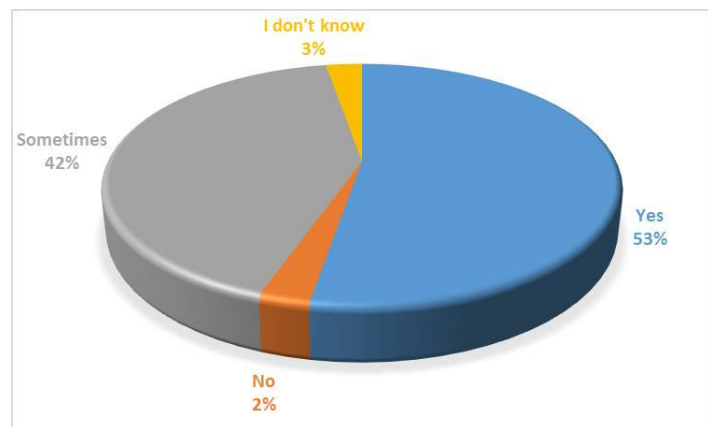
Overall, responses also reflected a general lack of awareness and understanding of the breadth and scope of ocean-oriented careers and of the skills and competencies associated with them. For example; the comments, “*i dont wanna be in the water*”; and, “*Im more into technology then the ocean*”, reflect stereotypical notions of ocean careers that assume there is a requirement for proximity to the ocean, and an emphasis on traditional physical labour versus modernized technologies (i.e. brawn over brain). With more awareness and exposure to demonstrate the breadth of options (i.e. marine-oriented math and science careers, engineering careers, ocean technology, etc.) this group of respondents could be more open to a marine oriented career.

### Curriculum Relevance

Curriculum relevance is viewed as an important factor in development of awareness of workplace skills and competencies. The following question was asked to determined students’ perceptions of awareness of why they are learning what they do, and of how it connects to future careers.

At school my teachers help us understand how the things we learn in math and science relate to real world jobs.

Positive responses (i.e. yes, sometimes) demonstrate that most First Nations students feel their teachers are anchoring their learning in real-world relevance (53%). However, there is still an opportunity to create stronger connections between



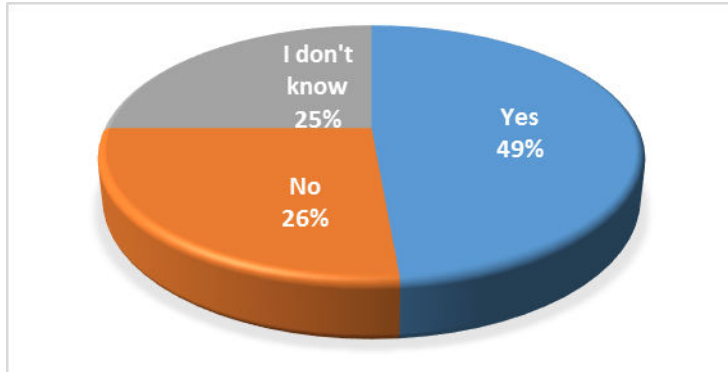
curriculum content and real world skill and knowledge application (42% sometimes). Only 2% of students responded that they didn’t feel there was a strong connection between what they learn and the real world. This is a significantly more positive perception of relevance than was reported among the general population.

There was no significant responses difference by gender, however older students did communicate more positive responses (yes), and younger students were more likely to report ‘sometimes’. This is likely due to older students having more opportunity to select courses that are of interest to them (and thus more relevant), as well as to maturity levels that enable older students to connect their learning to their real world more readily, and to provide more fair assessments of relevance.

## Interest in Careers in Skilled Trades and Technology

Skilled trades roles represent a significant proportion of ocean oriented careers in several key sectors, and so a series of questions were asked to determine youth perceptions and awareness of these roles.

### Do you know someone who works in a skilled trade?

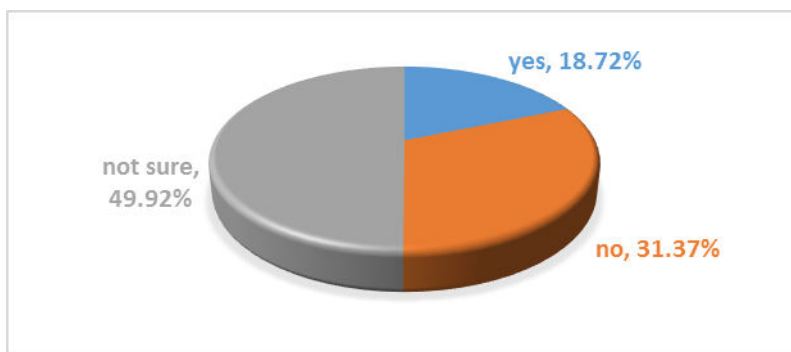


This question provided some insight into students' awareness of skilled trades roles, which provides some context for students to evaluate their interest in participating in one of these jobs. A significant proportion of respondents did indicate an awareness of someone who works in a skilled trade. There were no significant response differences to this question by gender. Students in grades

7, 9, and 10 showed the lowest awareness levels, while the other grades had very similar awareness levels.

The reported awareness levels were higher than expected, suggesting that students might have provided an affirmative response with very distal knowledge of a skilled tradesperson (i.e. the person who fixed their sink) versus a proximal relationship (i.e. friend, relative or neighbour). This might inflate the 'awareness' scores, resulting in students who have 'heard of' skilled trades, but who don't possess enough awareness of the careers to provide an informed response to the questions below.

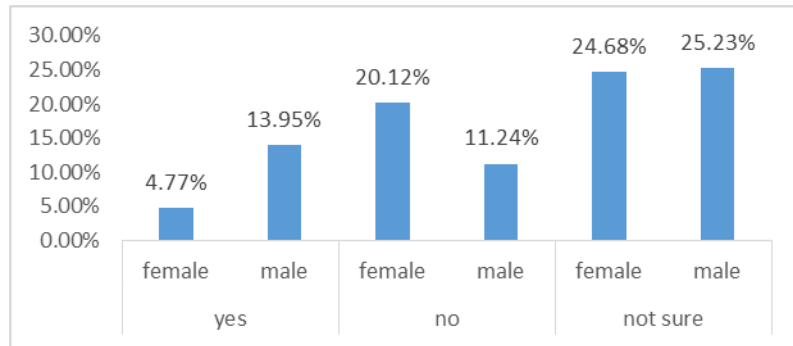
### Are you interested in a job in a skilled trade?



High levels of awareness of skilled trades roles were found to be correlated with interest in these jobs. For example, 17% of students who knew someone in a skilled trade said they were interested in a skilled trades job, whereas only 2% of students without role models, or who weren't sure, were interested.

By gender;

Females were more likely to report that they were not interested in a skilled trade, and males were more likely to report that they were interested, (uncertain responses were almost equal) These responses reflect the gender bias in skilled trades.



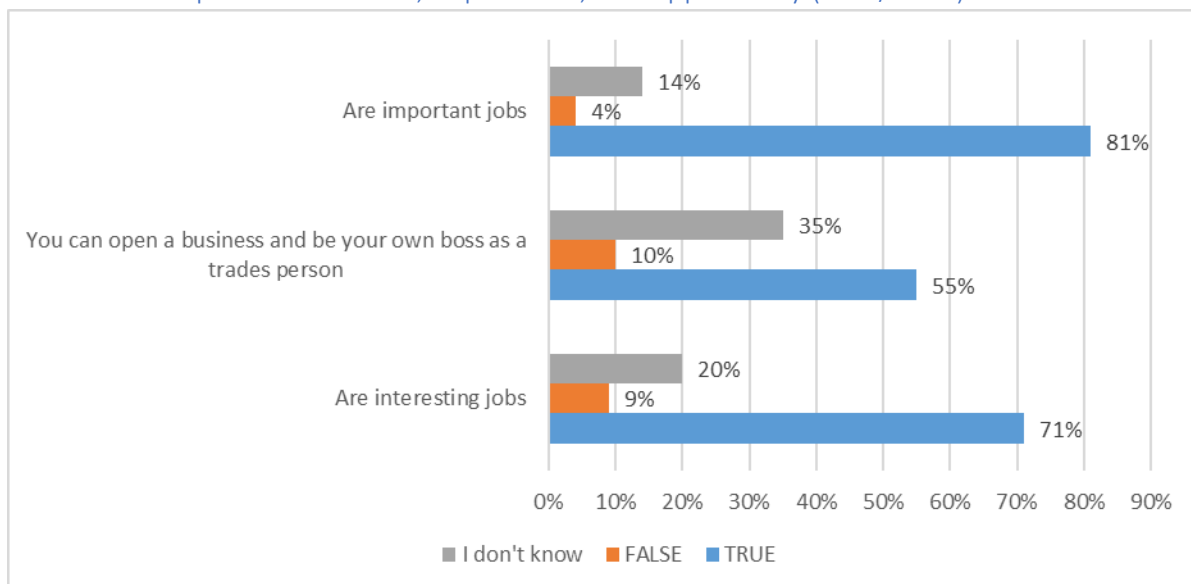
Perceptions of Skilled Trades

To prompt more detailed data about students' perceptions of skilled trades, they answered the following true/false questions. Students were able to repond, *true*, *false*, or *I don't know*. The *I don't know* option was included to mitigate uncertainty being captured as an affirmative/negative response.

What statements do you believe to be True/False about skilled trades?

Table 5 shows responses to questions a, b, and c, which all received more positive responses, and less negative responses overall.

Table 5: Perceptions of Interest, importance, and opportunity (True/False)





These responses, in particular the low rate of ‘no’ responses, demonstrate that youth in the region have an overall positive impression of the social desirability of these roles, as reflected in their promise of interest, importance, and opportunity. It was also interesting to note that nearly 55% of students recognized the entrepreneurial opportunities associated with skilled trades roles. Interestingly, of the ~2% of students who did indicate an interest in entrepreneurship, none of them expressed an interest in opening a business that was skilled trades-related. This suggests that, while students have some awareness of this option, entrepreneurship is not the pull that draws students along a skilled trades career pathway.

Table 6: Perceptions of Cognitive Requirements for skilled trades jobs

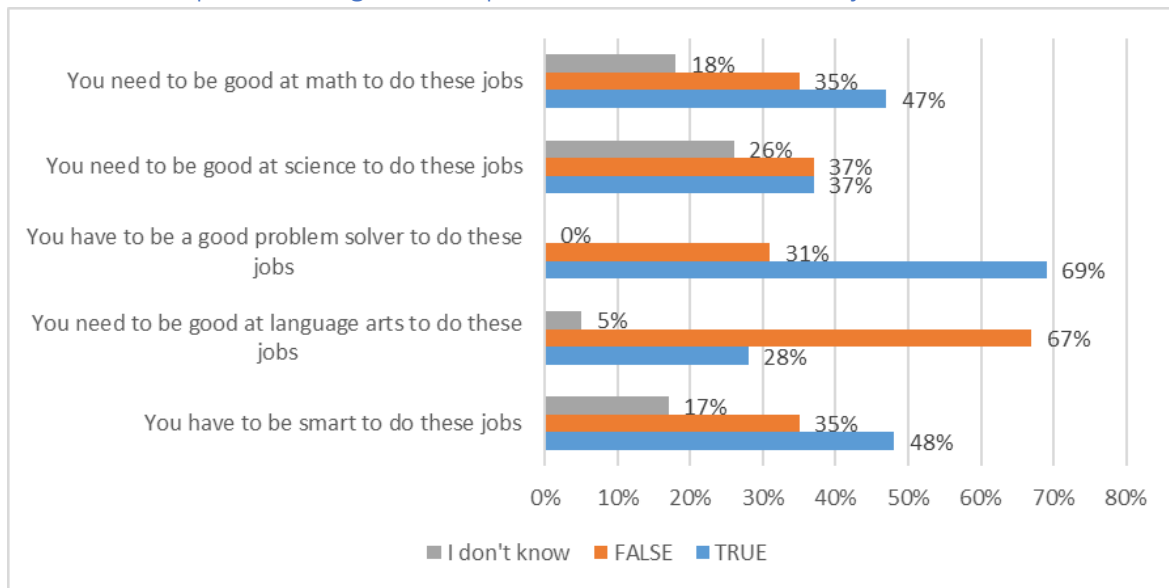


Table 6 shows responses to questions d, e, g, i, & k. These variables all received slightly less positive (true) responses, and more negative (false) or uncertain (don't know) responses than the previous grouping. These statements evaluated participants' perceptions of the cognitive requirements for skilled trades jobs, including the need for competency in language arts, math and science. A general statement about the requirement to 'be smart' was included to capture young peoples' perceptions of skilled trades jobs as generally the work of 'smart' people. Only 48% of youth agreed with this statement. Similarly, only 47% of students agreed that skilled trades workers need to be good at math, and 28% believed that language arts were essential to the role.

These responses are more consistent with the general stigma (anecdotal) that continues to linger around skilled trades roles. Broadly speaking, these roles tend to be perceived to require brawn over brain, and to require physical versus verbal interactions. These variables also relate to the social desirability of skilled trades roles, insofar as cognitive-oriented roles are socially privileged over physically-oriented ones

(with the exception of professional sports). In light of the responses captured in these two tables it seems that while the majority of students perceived these roles to be interesting and important, they did not possess the cognitive affirmation to render them as as legitimate options for themselves (i.e. only 9% of students expressed an interest in a skilled trade).

Table 7: Perceptions of social desirability in terms of prestige, compensation, and approval

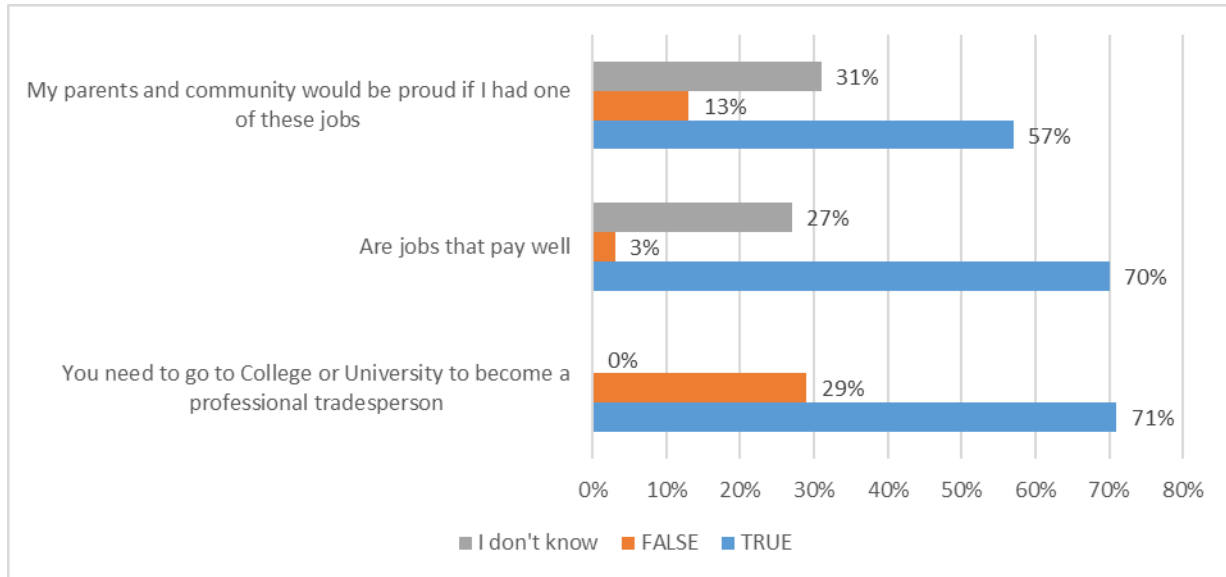


Table 7 shows responses to questions f, h, & J, which captured participants’ perceptions of the desirability of skilled trades jobs, relating to three key motivators; education pathway (prestige), pay (compensation), and parental approval. These responses provide more insight into perceptual barriers to participation in skilled trades, and revealed strong stigma builders for these careers.

Educational pathway, compensation, and parental approval have already been established in this report as powerful influences of young people’s career perceptions and intentions. This data, in particular the ‘don’t know’ responses, do however point to opportunities to shift young peoples’ perceptions. Roughly a third of students were uncertain if skilled trades jobs paid well or if their parents/community would be proud of such a pathway. Awareness and exposure programs aimed at all students will help to correct and inform educational pathway perceptions. Similar initiatives aimed at parents will help to inform this group of influencers, and hopefully lead to more validation of the skilled trades pathway. Perceptions of fair/good compensation are relative and individual, and thus more difficult to address. However, pairing awareness programs with current labour market information (that includes job availability and compensation) will help to provide more-informed perceptions among youth and their parents.

## The Influence of Perceptions on Interest

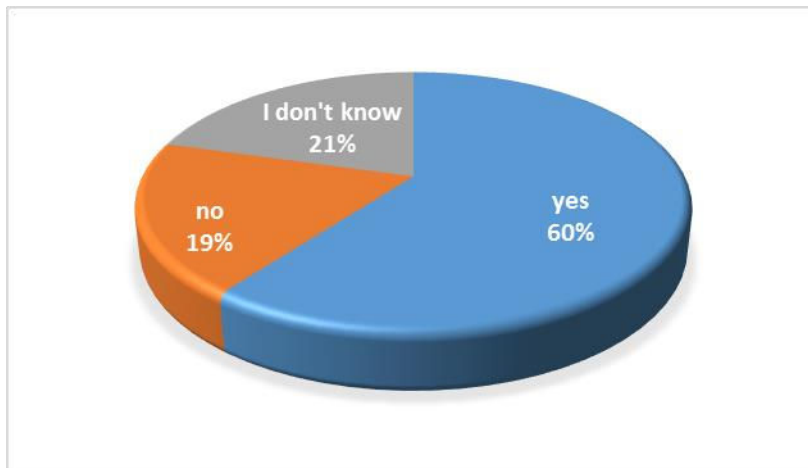
When we compared true and false responses (perceptions) against awareness of the roles (i.e. knowing someone who works in a skilled trade) we found that positive perceptions (True) were strongly correlated with awareness. This suggests that First Nations youth have largely been exposed to positive role models in skilled trades careers, or have been exposed to positive narratives in the home or community about these roles. . Inasmuch as youths' espoused interests (or lack thereof) are driven by awareness and experience, there is an opportunity to build more interest through awareness and exposure programs earlier on in students' education.

Overall, the responses were more positive than expected. For students who did provide negative (false) responses, there were stronger perceptions that one did not need to be good at language arts or science to do these jobs.

## Perceptions of Career Opportunities in Nova Scotia

The pervasive belief in Nova Scotia is that the real or perceptual lack of opportunity in the region is the driver of out-migration of youth. This section addresses this assumption and draws out some critical insights into youths' actual perceptions of career opportunities in Nova Scotia and within First Nations communities.

### Do you have family or friends who live in NS but work in another province?



This question was posed to provide insights into the socialization and normalization of interprovincial mobility among participants. As expected, a considerable proportion (60%) of First Nations youth who were sampled have proximal experience with this mobility option. Experience with the phenomenon of *leaving for work* is an important variable to understand insofar as it influences

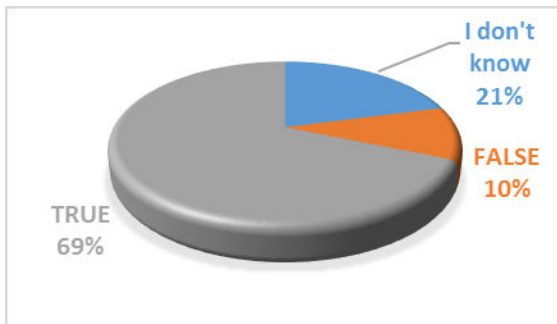
young peoples' own comfort levels or aspirations to consider the option. Familiarity helps to validate the choice of mobility, and elevate it in the minds of youth to not just a reasonable option, but possibly a primary one.

## Interprovincial Mobility

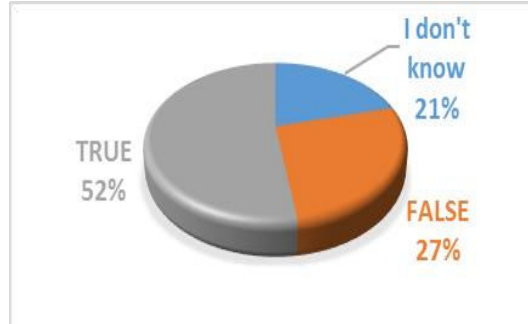
The driver of interprovincial mobility has historically been the absence of regional opportunity and employment coupled with myriad and lucrative opportunities in other provinces (i.e. out West). The assumption holds (anecdotally) that young people are predicting a push from the Nova Scotia region generally, and from First Nations communities specifically, by the same economic limitations. The following group of questions challenge this assumption by soliciting young peoples' perceptions of their future employment options regionally.

Which statements do you believe are true or false about jobs in Nova Scotia?

a) There are good jobs in Nova Scotia;



b) The best jobs are in the cities;

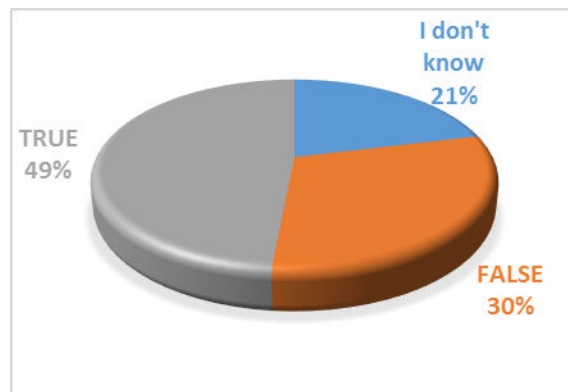


Both of these questions reveal significant optimism among First Nations youth regarding career opportunities in their broad (NS) and regional environments. There is a strong positive relationship between positive (true) responses and grade level, with an increase between grades 6-12. This may reflect the general stronger levels of awareness of opportunities and options among older students. That only 52% of students indicated a belief that the best jobs are in cities reflects some optimism (27%) or uncertainty (21%) about options available in rural areas. There were no significant differences in responses by gender.

c) The best jobs are out west;



d) It will be easy to get a job when I'm older;

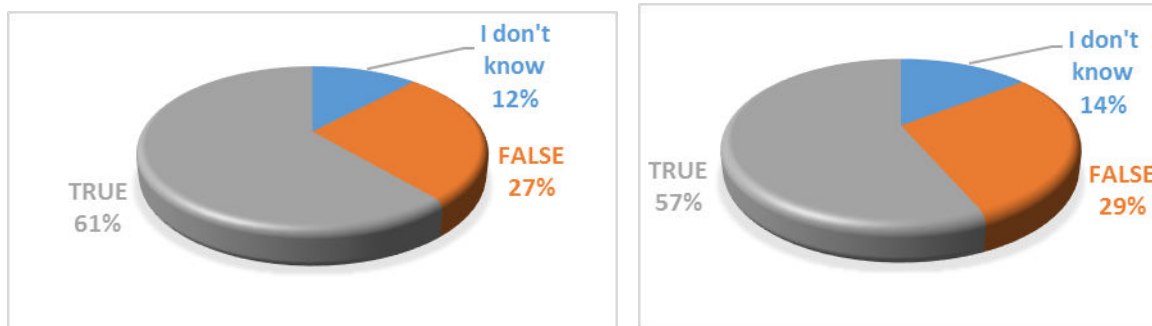


Responses to statement (c) were fairly equally divided, showing that youth in First Nations communities do not necessarily share the common regional assumption (anecdotal) that the best opportunities are to be found out west. These responses may be explained by variability in the perception of what constitutes the 'best' jobs, and may show that youth are able to evaluate some of the different aspects that comprise a good job. When this question was analyzed against the question asking *Do you have family or friends who live in NS but work in another province*, it was not shown to influence the responses

(i.e. knowing someone who has been living here but working elsewhere, did not change their perceptions of there being best jobs out west<sup>34</sup>). Surprisingly, students who identified an academic pathway after highschool were more likely to mark statement (c) as false, suggesting optimism in the range and locations of professional careers regionally.

Responses to statement (d) were similarly divided. Half (49%) of participants seem to be communicating optimism in their future access to good job opportunities generally, but another half (false 30%, I don't know 21%) expressed a lack of confidence in their future ability to take advantage of those opportunities.

e) To get a good job I will need to go to University; f) To get a good job I will need College;

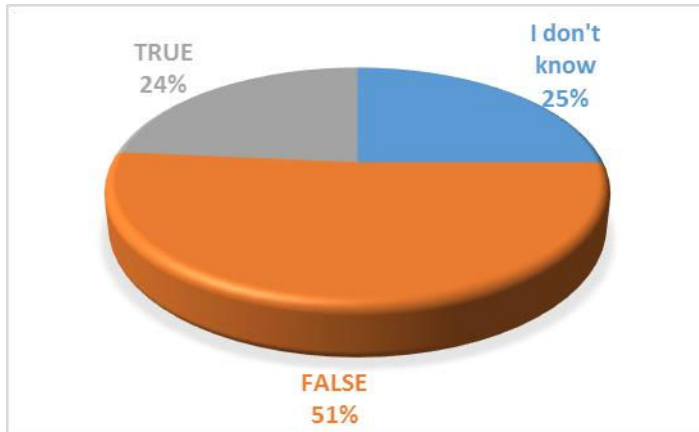


The majority of students are in agreement that post-secondary education is a prerequisite for 'good' employment, although roughly 40% disagree or are uncertain. This may again be attributable to mixed perceptions of what a 'good job' is. Alternatively, it may speak to the need for more deliberate career education to help students to understand the pathways to employment.

Not surprisingly, there is significant overlap between the students who indicated that they want to follow an academic pathway (specifically University) out of highschool, with those who believe that they require this pathway to get a good job. The overlap was considerably less-significant for college education, suggesting that many students believe that community college is an available pathway to employment, but not an essential one. This reinforces the importance of developing career maturity and an awareness of the link between academic requirements and employment in certificate/diploma-credentialed careers.

<sup>34</sup> It is important to note that this survey was completed in June 2017, following a significant period of decline in employment opportunities out west. It is highly likely that students would have been aware of this occurrence, and would have been exposed to dialogue about it from home or in the media. This awareness of the present decline in employment opportunities in the west may have factored into responses.

g) I can get a good job without finishing high school;

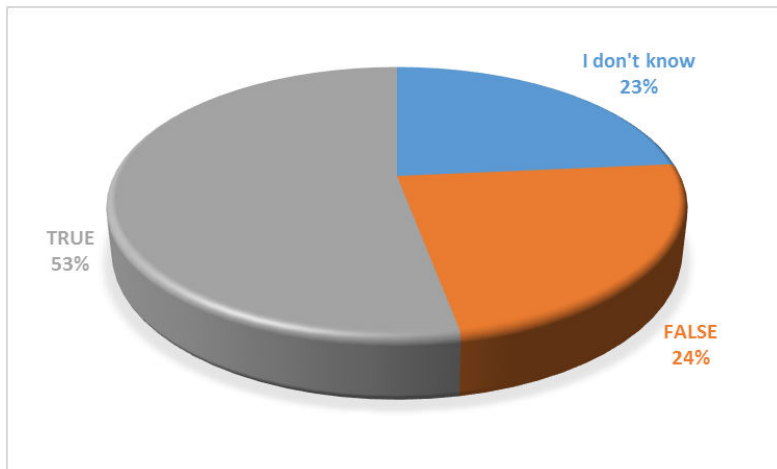


It is surprising to note that almost a quarter of students marked this question as true. When combining true and don't know responses, we see that 49% of students believe it may be possible to get a good job without finishing high school. This may be due to different perceptions of what constitutes a 'good' job. These students may have siblings who are already employed in part-time jobs that they regard as 'good'. This may indicate the importance of more education about the type of

lifestyle they wish to have when they are older, and the kind of job (income) they would require to support that. Furthermore, students may not have the financial acumen to understand the link between income and lifestyle. These responses mimicked those of the general population of Nova Scotian youth.

Responses to these true/false questions indicate that youth perceptions of career opportunities in the region (as compared with other regions), generally, are more optimistic than expected. However, responses do indicate some concern about the future availability of jobs, as well as lack of awareness of the education requirements and pathways for future careers.

h) There are good jobs available within the Mi'kmaq communities (additional question);

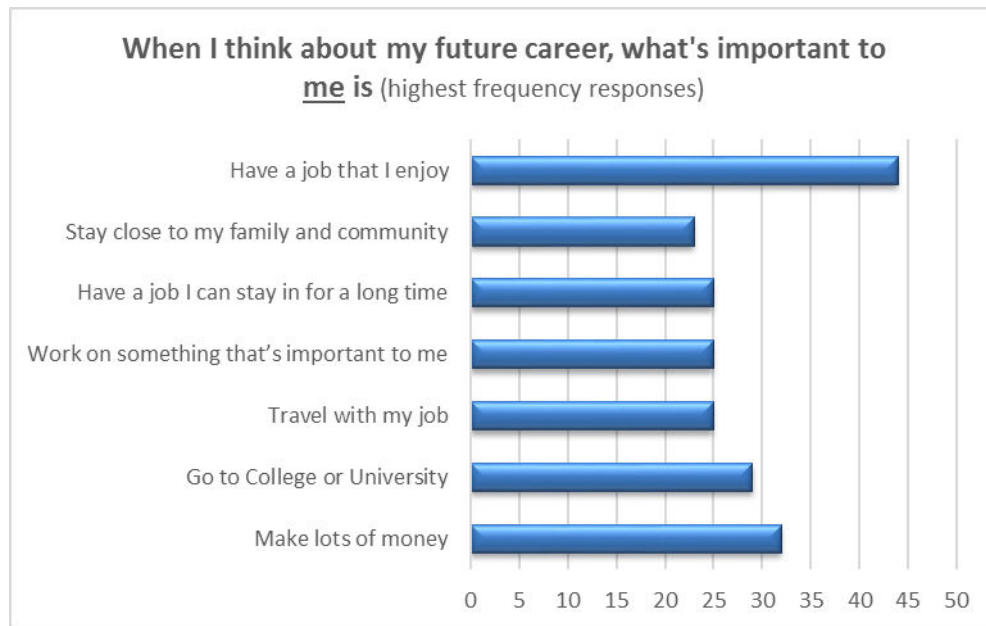


This additional question was posed to this cohort of students to gain more insight into feelings of optimism regarding prospects for employment within First Nations communities, and to provide some insights into drivers of across-province, and interprovincial mobility. First Nations youth indicated optimism in their expectations to find employment within their own communities, with 53% of respondents indicating that

this statement is *True*, and only a quarter of students expressing outright pessimism in their local opportunities.

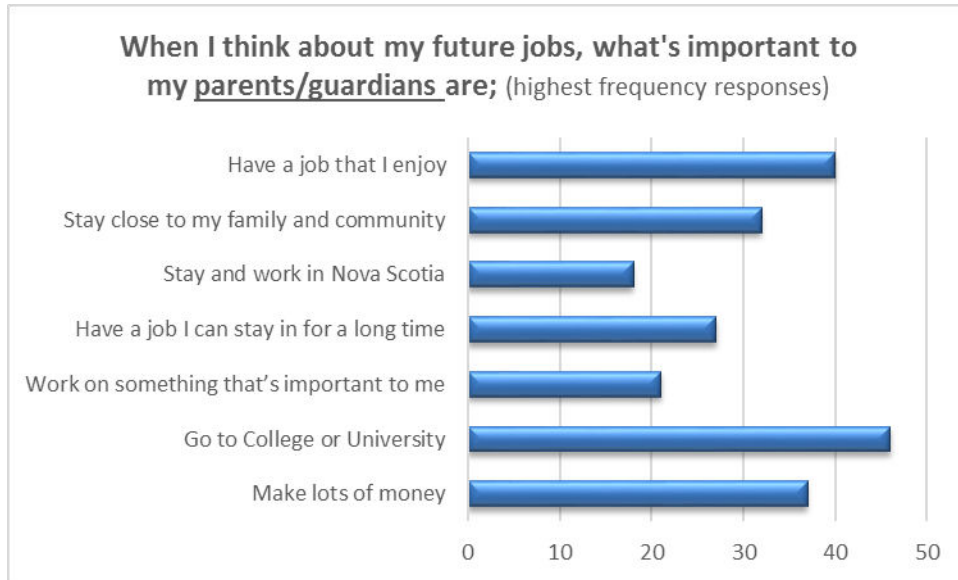
## Career Consideration Drivers

The following question was asked three times, first asking “*When I think about my future jobs, what is important to me is*”. The following two times it asked students to consider what their parents/guardians think is important, and what their friends think is important.

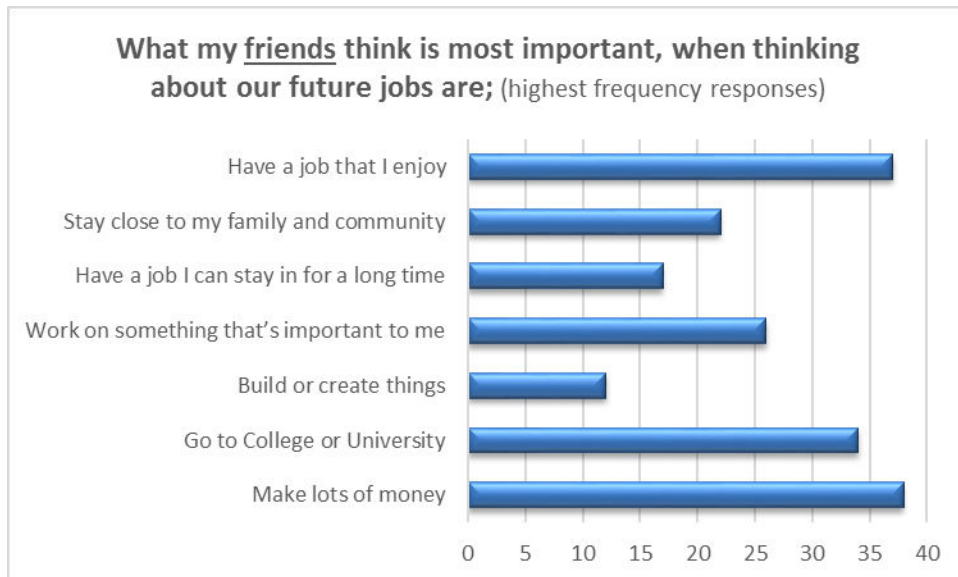


Youth reported that having a job they enjoy is the primary incentive for career selection, followed by compensation, and pursuit of an education pathway. It is also notable that ‘*have a job I can stay in for a long time*’ appeared in the top 4 responses, tied with travel with my job, and work on something that’s important to me. It is interesting that youth are thinking about job security at such a young age, especially as this runs counter to the job-switching habits of the new generations that are reported in popular literature. This response may be an artefact of the cyclical or seasonal employment, or the short-term project-based employment (low security and reliability) that has characterized a significant proportion of employment in First Nations communities. These attitudes regarding career security may also be a common narrative in media and in the homes and communities of First Nations youth.





The second question asked youth to reflect on what they believe to be most important to their parents/guardians. A key decision driver identified for parents was the pursuit of post-secondary education (which is arguably a driver as well as a means of achievement for the other drivers). Interestingly, youth believed that their parents prioritized enjoyment (have a job that I enjoy) of a job over compensation (makes lots of money), and compensation over proximity motives (.e. stay close to my family and community). The stability motive (have a job I can stay in for a long time) ranked 5<sup>th</sup>.



The third question, that asked participants to consider what their peers regard as important, functions as a projection question that helps to validate the responses of the individuals. As expected, there is

significant alignment between *the important to me* and *important to my friends responses*, (i.e. enjoyment and compensation motives rank 1<sup>st</sup> and 2<sup>nd</sup> for both), which serve as a proxy for individual perceptions. There is also consistency between the responses for the individual and beliefs of what is important to their parents, which demonstrates that young people are hearing the messages that parents communicate about value and importance. Where the perceptions of parents' rankings varied from 'me' and 'friends' was in the prioritizing of post-secondary education suggesting that messages about post-secondary pathways are being reinforced at home. Where all three sets of projected responses were most well-aligned was for the self-actualized response of *have a job I enjoy*. Participants ranked the importance of other self-actualization drivers (i.e. *work on something that's important to me*) as important to them and their friends, but slightly less (relatively) important to parents.

Statements from all three questions that received the lowest responses included (in order, by frequency of responses); *get a job without needing advanced education*, *work outside with nature*, and *work on something important to the world*. Also in the lowest ranking were *start my own business*, *be my own boss*. This suggests that there is not strong entrepreneurial messaging to youth.

# Insights and Recommendations

Youth have a narrow perception of ocean-oriented career options in the region (i.e. fishing, Navy)

Lack of interest in ocean-related and trades/technology related careers is due to lack of awareness, exposure, and accurate information

There is evidence of weak entrepreneurial messaging and motivation among First Nations youth.

In career literacy, an informed 'no' is as important as an informed 'yes'

There is a need for highly interactive career exposure programs well before grade 9

## Insights & Recommendations<sup>35</sup>

A key insight from this study is the general and broad lack of awareness of First Nations youth of marine oriented careers. Young people generally have a very narrow perception of career options in the marine industry, with awareness largely limited to traditional notions of careers (i.e. fishing, Navy) and work-style (i.e. brawn over brains).

The data suggested that the lack of interest in marine industry careers is rooted in a broad lack of awareness of the range of available careers (i.e our youth are not sure what the 'marine industry' means beyond fishing and Navy), and in a lack of positive exposure to the oceans, resulting in fear and apathy in place of stewardship and fascination. This suggests that we need more oceans presence in our k-12 curriculum, and more experiential programs and teaching to reconnect young people to the oceans (and other waterways), to build engagement and curiosity, and to connect with the broad range of opportunities that are locally available. We need optional exposure and awareness programs (extracurricular), as well as mandatory ones to ensure that we are reaching young people who might not have exposure through their own social networks, or for those who have not even considered the oceans an option worth exploring. We can't rely on voluntary extracurricular programs to reach all students. These opportunities will help to ensure that even if students decide that they aren't interested in a marine-oriented career, that at least it is an informed decision.

Similarly, responses generally showed a lack of awareness of skilled trades careers which is reported by youth as low interest (i.e. 9% from open-text response; 19% from multiple-choice question) in these careers. There is a prevailing stigma against skilled trades pathways (i.e. prestige, approval, compensation) that students as young as grade 6 are conscious of. Additionally, students remain poorly informed about the myriad career pathways that emerge from a skilled trades credential, and about the high-tech/low-touch characteristics of many modern-day trades. More exposure and awareness programs are needed in the grades 6-9 cohort to erode the stigma and build fascination with the creative and problem solving contributions of skilled trades and technology roles.

A third key insight is that our youth form strong biases against certain careers or pathways from an early age (i.e. by grade 6). These biases are not always well-informed, but they influence and limit the options that youth consider as they progress through school and through their career exploration. Overall, First Nations youth in Nova Scotia communicated strong negative opinions about marine oriented careers. Open text responses revealed that these preferences against were not well-informed, and relied on stereotypical and sensational (lack of interest, disparaging and hazzard) notions. This is an important

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<sup>35</sup> Despite small sample size we can fairly draw some conclusions from this data about the perceptions, intentions and attitudes towards careers that are common among First Nations youth in Nova Scotia. However, due to the small representation by grade, we can not make strong grade-related correlations with the data.

insight as it demonstrates that at an early age, young people are restricting rather than expanding the range of career options within their consideration. Just at a time when they should be looking more broadly, they are disregarding certain pathways, without having a chance to actually explore them. This has relevance to exposure and awareness programs that rely on voluntary participation, as young people may not be engaging in the exploration activities they could, having already dismissed certain options. This, in turn, points to the importance of mandatory awareness programs during these early years (i.e. prior to grade 10), before education choices are made that further restrict their pathway options.

We also see evidence of the bias-forming effects of negative narration (i.e. from parents, friends, media) on perceptions and career choices. Many students expressed an intention for a specific pathway (predominantly University-oriented), however these education intentions were not always consistent with their career intentions, or the intention was expressed without an outcome in mind (i.e. I want to go to University, I have no idea what job I want). This shows a strong awareness of the prestige and social preference for University pathways, and is evidence of the academic default that many of our young people are socialized for. What was particularly interesting with the data from the First Nations youth, was the gender flip in the data. Typically, nationally and internationally, females are more likely to pursue a University pathway, however females in this study were less likely to express an intention to do so. Females were also more likely to express uncertainty than males, which also runs counter to national results. This suggests an opportunity for more targeted career coaching for females from a young age that validates numerous post-secondary pathways.

This study reinforces the need for highly interactive career exposure programs well before grade 9. This recommendation is supported by research<sup>36</sup> that suggests that students as young as 10-12 years old will benefit from career education, and that by the age of 14, the potential negative aspects of certain careers begin to take hold. The consensus in the literature is that early exposure to a wide variety of career options is important<sup>37</sup>. Career education needs to advocate for many options that include the 'big dream' as well as more plausible options that are linked to the individual's skills, competencies, and interests. These programs need to be interactive and socially focused –and also need to be more adjectivally focused (instead of job title focused) to link to the compelling competencies and qualities of a career path (i.e. creative, problem solving, interactive, entrepreneurial, independent, etc.). And finally, where awareness of competency requirements (especially 21<sup>st</sup> century competencies) was so low in this study, there is a need to coach First Nations youth on the types of skills and competencies they'd like (and need) to launch their career webs that can take them in numerous directions.

The data also provides insights into the most effective (i.e. trusted and accessible) modes for providing career counseling. Responses indicate that the traditional models of one-on-one career counseling from a teacher or principal are not trusted or valued. Today's young people value career exploration with an experiential versus informative focus. In addition to the importance of highly interactive career exposure

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<sup>36</sup> Hartung, Porfelli, and Vondracek (2005)

<sup>37</sup> Carpenter, 1993; Welde et al., 2016; Zimmer-Gembeck and Mortimer, 2006

programs well before grade 9, the data suggests that these programs need to be experienced in a social, peer education environment that utilizes technology channels.

First Nations youth reported an interest in leaving the province to pursue education and work at similar rates to youth in the general public. However, they also reported strong optimism in the labour market in Nova Scotia and within their own communities, which confirmed the researchers' hypothesis that mobility is not driven as much by pessimism in local opportunities as by a *mobility motive* itself (i.e. that mobility has become a motivator in itself). This suggests that First Nations youth are not feeling pushed out of the community or region by lack of local opportunity, but rather that they are feeling pulled to other regions because mobility has become more normalized and interesting to a broader range of youth than in previous generations. It would seem that the trend has shifted from *leaving because we have to* – to *leaving because we want to*. This has considerable implications for post-secondary recruitment programs, and for youth employment programs.

An important temporal moderator for the First Nations youth in this study however, was the temporary timeline for leaving (i.e. leave for a time to pursue school or work). Youth in this study may have felt more comfortable expressing a mobility interest outside of their communities because it was worded as a temporary option. A course of action may be to find ways to provide opportunities for First Nations youth to explore their mobility pursuits through more provisional experiences that won't ultimately lead to the shedding of community youth as they depart the k-12 system.

Finally, youth who participated in this study reported very low interest in pursuing an entrepreneurial career. Indeed, having a chance to be their own boss and build their own business received the lowest frequency responses. This speaks to a powerful opportunity to empower youth with enterprise focused programs and projects and challenges.

We have seen that our youth do form strong biases/opinions regarding their education and career futures by an early age, but the study itself provides some evidence that these biases can be shifted with information – even if the shift is from uninformed certainty, to more informed uncertainty. Uncertainty is the open door to developing broader career awareness and maturity in the career exploration process.

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## Appendix A: Letter to Teachers

### Message to Teachers

As you may know we have several initiatives underway aimed at preparing our young people for tomorrow's opportunities. To ensure that we are working from the most recent and relevant data about our young people, we will be implementing a survey of all students in grades 6-12 throughout the Mi'kmaq Kina'matneway schools. The ***Student Intentions and Perceptions Survey*** will solicit responses from our young people that will provide valuable insights into their perceptions of trades, technology, and marine-oriented careers, and of their career optimism. It will also provide some insights into their mobility intentions, and the drivers that influence their career and education choices.

For us to provide the most effective career literacy and awareness programs, it's important that we understand what our young people believe to be true, and that we understand what interests them and why.

We are asking for your support in launching this survey. Here is what we require from you;

- Provide survey link to students (cut and paste URL into a browser, or scan the QR code – both below)
- Introduce the survey to your students (**brief instructions for implementation are provided below, along with the survey link**)
- Between **June 2<sup>nd</sup> -June 23<sup>rd</sup>**, provide time (~10-20 minutes) and resources (i.e. access to PC, laptop or other device) for each student to complete a survey independently (assistance may be provided to students with accommodations)
- **The same survey link can be used several times**, but each student should only complete it once
- Students will need to complete the survey in one 'go', as partially completed surveys cannot be saved

## Instructions for Implementation

Before students begin, please provide the following instructions;

- Explain that this survey is asking them about **their** ideas and plans for their future career. Remind them that we are very interested in hearing about what **they** believe about different career options, and what they plan for themselves
- Remind students that, while we appreciate their participation, it is not mandatory, and they can choose to not do the survey (you might want to reinforce that their responses will be anonymous and confidential)
- Ask them to read each question and instruction carefully, as some questions may sound the same
- Explain to students that it will likely take them 10-20 minutes to complete the survey, but they may take as much time as is reasonably needed
- Teachers may provide guidance re: clarifying questions or vocabulary, or pathway questions (i.e. *does a doctor need to go to University or College?*)
- During the pilot, the survey seemed to inspire discussion between and among students. It is fine if students discuss the questions and their choices, as this seemed to support comprehension and engagement, and did not seem to unduly influence responses
- If you have any technical challenges with the survey tool, please contact Anna Naylor at [anna.naylor@iore.ca](mailto:anna.naylor@iore.ca) or by cell: 902-266-2680, or Dr. Sherry Scully at [sescully@iore.ca](mailto:sescully@iore.ca), or by cell at 902-880-6587.

**Survey Links:**

<https://www.surveymonkey.com/r/S5D6P2N>

or this QR code



The results from this study will be made available to participating schools in the Fall of 2017. We thank you in advance for your support with this important research. If you have any questions about this study, please contact me directly.

Regards,

[Dr. Sherry Scully \(Principal Investigator\)](#)

***Director of Learning & Organizational Development***

Phone: 902.494.4104 | Cell: 902.880.6587

Email: [sescully@iore.ca](mailto:sescully@iore.ca)

[www.iore.ca](http://www.iore.ca)

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## Appendix B: Career Categories

Category	Examples
<b>Medical and health professions</b>	Doctor, surgeon, nurse, veterinarian, physiotherapist, psychiatrist, dentist, orthodontist
<b>Visual and performing arts</b>	Artist, actor, singer, YouTuber, musician, author, filmmaker
<b>Professional sports and related</b>	Professional athlete, coach of a professional team, agent for professional athletes, equipment manager
<b>Military, police, firefighting and outdoors</b>	Army, navy, marine corps, coast guard, police officer, firefighter, agent for Department of Natural Resources, forestry, logging, game warden
<b>Retail or non-professional</b>	Personal trainer, book publisher, waiter, pilot, flight attendant, cashier, anonymous buyer, snowmobile retail, car painter, truck driver
<b>STEM careers</b>	Scientist, engineer, marine biologist, computer programmer, technologist
<b>Trades</b>	Mechanic, carpenter, electrician, welder, construction, chef, baker, hairdresser, makeup artist
<b>Non-STEM professionals</b>	Lawyer, banker, architect, politician
<b>Business owner, small business owner</b>	Restaurant, mechanic, beauty salon, trades, bakery, retail

## Appendix C: Ethics Approval

Department of Indigenous Affairs and Un'amaki College at Cape Breton University

April 27, 2017

Dr. Sheryl Scully  
Institute for Ocean Research  
Enterprise 1 Research Drive  
Dartmouth  
NS  
B2Y 4M9

Dear Dr. Scully:

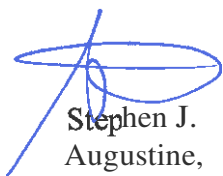
I wish to inform you that the Mi'kmaw Ethics Watch committee has reviewed and approved ***"Student Intentions and Perceptions Survey for the Mi'kmaq Community Schools."***

As your project moves forward with the approval of the Mi'kmaw Ethics Watch, I must note that individual communities have their own perspective on research projects and it is your responsibility to consult them to ensure that you meet any further ethical requirements. Governments, universities, granting agencies, and the like also have ethical processes to which you might have to conform.

When your project is completed, the Mi'kmaq Resource Centre at Unama'ki College would be pleased to accept the results in a form that could be made available to students and other researchers (if it is appropriate to disseminate them). Our common goal is to foster a better understanding of the Indigenous knowledges.

If you have any questions concerning the Mi'kmaw Ethics Watch review of your project please do not hesitate to contact me and I will forward them to the committee members.

Sincerely,



Stephen J.  
Augustine,  
Associate Vice-

President  
Indigenous Affairs and Unama'ki  
College Cape Breton University

SJNdmc

CAPE BRETON UNIVERSITY | UNAMA'KI COLLEGE

Tel: (902) 563-1811 | P.O. Box 5300, 1250 Gr

