A Behavioural Economics Approach to Recruitment in Skilled Construction Trades

By
James (Jason) Stewart and Lindsay McCardle
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Foreword

This is an independent report written by James (Jason) Stewart (MA) and Lindsay McCardle (PhD), both of Toronto. Jason is an economist who specializes in behavioural economics, and is the primary author of the Ontario Securities Commission’s Behavioural Insights report. Lindsay is a psychology and user experience specialist with expertise in helping students become better learners and research analyzing students’ management of their own learning.

This report was commissioned by the Residential Construction Council of Ontario (RESCON) and the Ontario Residential Council of Construction Associations (ORCCA).

RESCON represents more than 200 of Ontario’s residential builders and is a thought leader for the industry. Training and education is a top priority, specifically to labour supply, project demands, apprenticeships, and the future of work in residential construction. ORCCA is a council of associations which are designated bargaining agencies in the residential sector of the construction industry. ORCCA’s participation in the report demonstrates that this issue affects all of residential construction and is a priority across all trades in the industry.

The supply of skilled labour has fundamental impacts on the provision of housing. The inadequate number of new entrants into the skilled construction trades is a major problem. For context, BuildForce Canada has been monitoring the Canadian construction sector since 2001, providing labour market information (LMI) on the broader construction and residential construction sector. Its most recent report predicted between 2019 and 2028, there will be 91,100 skilled construction workers retiring in Ontario alone, with 50,800 of those coming in the residential sector.

Beyond issues arising from this wave of retirements, there is a recognition that our industry does not always prioritize longer-term interests regarding recruitment, and labour supply. There is a need for better approaches to address the residential construction sector’s recruitment and retention challenges, including the requirement for more and better LMI. Addressing our crucial need for more new entrants to the skilled construction trades is even more important given that the residential sector is very sensitive to economic shocks (including labour supply).

This is a foundational report that is fully supported by RESCON and ORCCA. It applies the concepts of behavioural economics (BE) to the recruitment and labour supply in the residential construction industry. The report examines the career decision journey of young people – and how cognitive barriers as well as emotions, motivations, and social factors – lead them into or away from the skilled trades. It looks at how collaboration by industry stakeholders can successfully increase recruitment to meet the needs of young people and the housing industry.

The report offers a wide array of behaviourally driven tactics to: improve the impacts of educators; change the misperceptions of parents and young people about skilled construction work; and enhance the online platforms regarding careers in construction. Finally, it points to the need for meaningful
metrics and measurements. Without proper measurement, BE testing, and much better and far more data, the government and construction stakeholders cannot ensure that proper value is derived from invested tax and industry dollars. And while the current amount of financial support provided is significant, there is a problem with how it is allocated and the value assessments of those investments.

As additional background, the report also includes overviews of how the residential construction sector operates, including a perspective on why certain labour and recruitment issues exist and how we got to this point.

In commissioning and releasing this report, RESCON and ORCCA are hoping to facilitate fundamental changes to the training and apprenticeship system in Ontario. This requires changes to the way government, industry and educators operate and interact. Traditionally, due to the often-transient nature of work, the residential industry acts on a reactive, rather than proactive, basis to recruiting and retaining skilled tradespeople. This short-term approach is a key contributor to why and how the industry is facing the major structural issues of its labour supply today. This report’s recommendations and potential solutions are intended to prompt structural changes to support better recruitment of young people into the industry.

Labour supply is a key issue facing residential construction. This report lays a foundation for meaningful change but requires action from all parties involved in the training and apprenticeship system. We are proud to introduce this report and look forward to feedback from educators, government, key stakeholders, media, and the public.

**Richard Lyall**
President
RESCON

**Andrew Pariser**
Chair
ORCCA

*RESCON members build world-class high-rise, mid-rise, and low-rise homes, including rental apartments, social housing, and family communities. RESCON’s other activities in residential construction include: labour relations and collective bargaining; technical standards including building science and the building code, and fostering innovation; health and safety.*

*ORCCA’s membership is restricted to residential employer bargaining agencies regardless of union affiliation. ORCCA functions as a coordinating body to align association positions on several issues which affect the residential sector and often acts as the voice of the unionized residential construction industry.*
Executive Summary

The genesis of and rationale for this report arose out of the crucial challenges in recruiting young people to skilled construction trades and related jobs. Despite these occupations offering above average to very attractive compensation and high job satisfaction, many of these trades are facing existing and projected increasing shortages of new entrants. The amount of these shortages will vary among construction’s seven sectors depending on the economy, demographic changes, and government policy. Yet the inadequate supply of new entrants to skilled construction work is a structural trend that is projected to continue well into the next decade. Although these shortages reflect the amount and pace of retirements in this sector, they also result from too few young people entering these skilled jobs.

Why Behavioural Economics Offers a Valuable Framework and Insights for Recruitment

This report contends that behavioural causes are a major contributor to the gap between the demand for skilled construction labour and its supply of young workers. A behavioural economics (BE) approach can improve the understanding of many of these recruitment issues, and help reinforce opportunities to attract new entrants to skilled construction work.

BE brings insights from psychology and other behavioural sciences into an economic framework. BE recognizes that there are systematic influences upon our thought processes, choices, and actions. These begin with the reality that we cannot process all the information we receive nor assess all the choices offered to us. Our decisions and actions are subject to our cognitive biases and barriers. Emotional, motivational, and social factors including time dimensions and mental models are also crucial influences. Accordingly, a BE framework helps explain why noticing, understanding, and effectively acting upon career choices is very difficult for young people. It is also useful in examining behavioural factors that impact the entities and people that influence young people’s attention, interpretation, and actions.

BE’s widespread application in recruitment and retention merits highlighting. Technology firms, banks, sports teams, and a number of colleges, universities and governments use BE extensively in their hiring and personnel management.

For recruitment in skilled construction work, BE’s concepts and insights offer significant advantages. Among the most important are the following.

- **Mental models** which are the concepts, identities, narratives, and views drawn from our communities and experiences about how the world is structured and how it operates.
- **The last mile**, which refers to the touchpoints that organizations have with individuals in their delivery of services.
- **Information architecture** – the way that information is displayed can influence the way people process it, especially online formats for their impacts on our cognition and focus.
- **Choice architecture**, which refers to the design of different ways to present choices to people, and the effects that choice presentation can have on our decisions and actions.
• **Nudging** changes choice architecture by altering the way that choices are presented to promote a better outcome or decision-making without forbidding any options or significantly altering the incentives.\(^6\)

• **Messenger** effects refer to the major influence of who communicates information to people.\(^7\) The right messenger(s) can be very effective nudges to our attention, interpretation, and actions.

• **Boosts** aim to instill a new competence or other knowledge, or foster existing skills and understanding. When we are at risk of making poor and/or uninformed choices, boosts offer a way to enhance our decision-making expertise and knowledge.\(^8\)

**BE Report Overview, Parameters and Structure**

Using a BE lens, this report provides a preliminary BE framework and behavioural insights to understand young people’s career decision journey. It examines important external influences upon young people’s career perceptions and choices such as family, peers, educators, employers, labour unions, non-profit associations, and governments (collectively, “Influencers”).

The report’s focus is on the supply side (new entrants) of the skilled construction trades and related work, not the demand side (training placements and jobs). It assesses recruitment in skilled construction work, but not retention. While our BE framework, insights, and recommendations are in depth and broad ranging, the report is neither all encompassing nor exhaustive at this stage. The report also does not examine the broader labour market implications of the macro-economic cycle nor does it look at the effects of structural employment trends and technology developments on recruitment in construction.

The report’s structure includes a literature review linking BE research to recruitment. From this general BE foundation and platform, the report uses BE concepts and insights to better understand young people’s career decision journey and skilled trades options. It considers specific BE applications to improve students and educators’ attention to, understanding of, and potential actions for career options in skilled construction work. It concludes with four main recommendations, and offers ideas for future BE research. These include using BE-informed\(^9\) approaches – tactics based upon proven BE insights – and the need to implement BE testing.

**Main Recommendations**

1. **Improve Mental Models about Skilled Construction Work in all Phases of School**
   • Young people need earlier and more sustained exposure to skilled construction work as a viable and equal option with college and university.
   • Young people need earlier and more extensive in-person interactions with the skilled trades, especially in construction.
   • Major Influencers need to build upon and improve most of their online approaches.
   • There is a fundamental need to improve all elements of career guidance frameworks and career options models in high school.
   • There are clear opportunities to enhance the outreach to young people during and after high school.
2. Achieve Much Greater Collaboration among Influencers to Increase Nudges and Boosts

- There is major scope for Influencers to coordinate and/or jointly increase their effectiveness in the primary and middle grades, high school, and post-secondary years.
- In many cases, our recommended nudges and boosts do not need new money; instead, a better allocation of existing funds and greater commitment to co-operation across types of Influencers is recommended.
- Improving the linkages, depth, and breadth of Influencers’ online approaches is overdue and vital.

3. Commit to BE Testing of Initiatives, and Adjust Programs and Tactics to Reflect Results

**BE testing is critical.** Successful collaboration initiatives need to be quantified on an absolute basis to better assess their stand-alone merits and costs. Governments, educators and industry also require a better understanding of the relative merits of specific information, formats, methods of delivery, and visuals versus other tactics and options.

Implementing BE-testing will generate usable evidence and much greater understanding of:

✔ Which programs are most effective for students, parents, and/or educators?
✔ What aspects of these programs are most effective?
✔ What are the best practices for adoption/scaling across school boards and regions?
✔ What elements require further adaptation and refinement? And
✔ How this information can better inform school curriculums and be more effectively shared with students, parents, and educators?

4. Better Longitudinal Metrics of Young People’s Paths After High School are Crucial

The longstanding gap in the collection and use of data regarding young people’s career paths is a major problem. It is crucial to address this lack of data and other empirical tracking of the (i) initial post-secondary paths for students, and (ii) subsequent career paths of young people.

Better and sustained data collection, curation, and analysis of career decisions will provide vital metrics to assess changes in the behaviour of young people making actual career choices (initial and ongoing). Without these data, Ontario does not have an evidence-based approach to career guidance, nor any means to measure its effectiveness.

**Using BE in Recruitment offers Broader Economic and Social Gains**

Addressing the barriers to recruitment through BE offers major benefits beyond the residential construction industry and the rest of the construction sector. There are substantial and much broader economic, fiscal, and social gains for Ontario and Canada. Using BE insights effectively in recruitment will help young women, Indigenous people, and those less fortunate economically by offering them more paths to higher-earning, higher-satisfaction jobs. Improved recruitment to skilled construction work through BE will also lessen the costly economic inefficiencies of the current system.
Next Steps: Future BE Research Recommendations

There are significant opportunities and merits in future BE research regarding recruitment in skilled construction work. They include developing this report’s preliminary BE framework and core proposals into a full BE framework, and undertaking in-depth testing of recruitment’s supply side.

There are also numerous advantages to using a BE approach and applying its insights to assess the (i) demand side of recruitment and (ii) retention. The goal would be to create a BE framework and apply its insights to address significant demand side and retention issues.
Canada is experiencing an excess supply of postsecondary graduates in less financially
advantageous fields and a significant shortage in many fields with a higher return on
education. This extends not just to STEM fields (science, technology, engineering and
mathematics) but also to skilled trades….

– CIBC World Markets’ Deputy Chief Economist Benjamin Tal (2018)¹⁰

The construction and maintenance industry will need to hire, train, and retain almost
103,900 additional workers over the coming decade, as 91,100 workers are expected
to retire – 21.5% of Ontario’s current construction labour force.”

– BuildForce Canada report (2019)¹¹
There are crucial challenges in recruiting young people to skilled construction trades and related jobs. Many of these occupations are facing existing and projected increasing shortages of new entrants. The amount of these shortages will vary among the seven sectors comprising the construction industry depending on the health of the economy, demographic shifts including immigration, and government policy. Yet the inadequate supply of new entrants to skilled construction work is a structural trend that is projected to continue well into the next decade.13

Skilled trades and other labour shortages in Ontario’s construction industry are in part a function of the amount and pace of retirements in this sector.14 However, they also result from too few young people entering these skilled jobs,15 despite compensation that ranges from above average to very attractive,16 and high satisfaction in these occupations.17

A BE framework can help identify many of the factors shaping the career choices of young people as well as the impacts of key entities and people influencing their career decisions.

This report contends behavioural causes are a major contributor to the gap between the demand for skilled construction labour and its supply in Ontario. A behavioural economics approach can improve the understanding of many of these recruitment challenges, and help reinforce opportunities to attract new entrants to skilled construction work. A BE framework can help identify many of the factors shaping the career choices of young people as well as the impacts of key entities and people influencing their career decisions. Application of BE insights can enhance the multiple sources of information available in person and online about skilled construction trades and related jobs as career options.

Behavioural Economics (BE) in Brief

As a concise general introduction, BE brings insights from psychology and other behavioural sciences into an economic framework.18 The foundations of BE begin with behavioural science, which is the study of human decision-making and actions. BE intersects with multiple disciplines such as psychology, neuroscience, marketing science, decision science, anthropology, and others.19

BE takes the core concepts and insights of behavioural science and applies these to markets, including their component members (individuals, firms, governments, labour, et al). It uses a systematic and scientific framework to understand people’s thinking and behaviour in their market choices and actions.

From a practical perspective, it is important to highlight that BE approaches and insights have been used extensively in multiple business sectors for many decades, albeit often implicitly (see Appendix A). It bears emphasis that the private sector’s adoption and applications of BE have accelerated and expanded dramatically across many industries over the past decade.
Why BE Offers a Valuable Framework and Insights for Recruitment

Traditional economics and many government/regulatory policies are based upon core assumptions that people are highly rational and efficient.

This traditional approach assumes that we:

i. can notice, understand, and assess most, if not all, relevant information for our decisions;
ii. have consistent preferences; and
iii. are very rational in our decisions and actions.

Given the labour shortages in many skilled construction trades noted above, a traditional economics approach to these recruitment issues would include providing more information as a key feature. It would be based on the assumptions that young people can and will find out about and understand the range of career options available to them, and, if interested, will undertake the education and training required for these pathways. It assumes young people are sufficiently aware of their interests, skills, and long-term needs to make informed decisions based upon the information available about, and the incentives and costs of, their options.

In contrast, BE recognizes these assumptions do not hold when we look at our actual behaviour. There are systematic influences upon our thought processes, choices, and actions that make us frequently irrational and inconsistent in our decisions and preferences. BE examines and tests these systematic factors. Its core assumptions include the following.

i. We cannot process all the information we receive nor assess all the choices offered to us; and
ii. Our decisions and actions are subject to our cognitive biases and barriers as well as emotional, motivational, and social factors including time dimensions and mental models.

A BE framework helps explain why noticing, understanding, and effectively acting upon career choices can be very difficult. A BE approach recognizes there is a huge amount of information available and a broad array of career paths open to young people that are very challenging to assess, understand, and act upon.
attention, interpretation, and actions of young people.

In particular, BE’s increasing application in recruitment and retention in the private, post-secondary, and other sectors merits highlighting. BE insights and approaches have been employed by a rapidly growing number of firms to enhance their personnel selection and management through better hiring practices and improved approaches to retaining employees. Those applying BE in their hiring and other personnel decisions range from technology companies, banks, and BE consulting firms to sports teams. Numerous other organizations are also adopting BE elements or approaches in their recruitment and retention, including colleges and universities.

A BE approach recognizes our thinking and actions for many long-term decisions such as career choices are subject to: (i) internal factors such as inadequate expertise, significant uncertainty, and our emotions and motivations; and (ii) external influences such as our peers, social norms, and the timing of when we need to make most decisions.

BE is very relevant to recruitment in the skilled construction trades given the behavioural aspects of young people’s decision-making and actions outlined above. Its insights offer a unique framework and a wealth of practical applications to address these and other recruitment issues. A BE approach recognizes our thinking and actions for many long-term decisions such as career choices are subject to: (i) internal factors such as inadequate expertise, significant uncertainty, and our emotions and motivations; and (ii) external influences such as our peers, social norms, and the timing of when we need to make most decisions.

Report Overview and Structure

Using a BE lens, this report examines a range of issues hindering the recruitment of young people and explores ways to increase the attraction of careers in the skilled construction trades. We provide a preliminary BE framework and behavioural insights to understand young people’s post-secondary journeys through their career decisions. The report examines important external influences upon young people’s career perceptions and choices such as family, peers, educators, employers, labour unions, non-profit associations, and governments (collectively, “Influencers”). We assess a range of BE factors and other considerations regarding the approaches of these Influencers in the career decision process.

Our goal is to help explain why and how the application of BE is essential to:

- Reinforce the significant work benefits of skilled construction work such as greater job satisfaction reported in surveys, and the notable pay that these trades offer; and
- Enhance the impacts of career information about and exposure to these skilled trades that is offered by educational, employer, government, labour unions, and other sources to young people.
Four chapters follow this Introduction and Report Overview (Chapter 1).

**Chapter 2: BE Literature Review: BE Foundations, Key Concepts, and Insights for Recruitment**

This chapter summarizes relevant BE foundations and important concepts for recruitment. It looks at how cognitive barriers as well as emotional, motivational, and social factors shape what we pay attention to, how we interpret information, and how we act upon choices. This chapter explores the importance of the last mile, information and choice architecture, nudging, and boosts. It shows how BE-informed tactics can help significantly improve the impacts of Influencers. It also highlights the essential need to use BE testing to assess Influencer tactics.

**Chapter 3: A BE Framework for Assessing Young People’s Career Decision Journey**

Examining the nature of young people’s career decision journey, Chapter 3 focuses upon their paths into or away from skilled construction work. This chapter includes the barriers shaping young people’s decisions and the impacts of their Influencers: educators, parents, peers, employers, government, labour unions, and non-profit associations. It addresses a number of these barriers and other factors hindering better career decisions by young people, especially in being aware of, understanding, and considering skilled construction work.

**Chapter 4: Applying BE Insights to Recruitment’s Last Mile: Understanding Collaboration Success Stories, and Improving Career Guidance Online and In Person**

This chapter explores how improving the last mile, addressing information and choice architecture for young people along with boosting can improve their career choices. Chapter 4 examines a range of nudges and boosts to young adults’ decision-making capacity in the middle grades, during high school, and after high school. It applies BE insights to show how guidance counsellors can provide better career guidance, and offers BE-informed tactics to improve Influencers’ online approaches and impacts.

**Chapter 5: Looking Ahead: Main Recommendations and Next Steps**

Setting out the report’s major findings and proposals, Chapter 5 also supplies additional context and merits including the major economic and social gains from improved recruitment. It underscores opportunities for further research, including an even more in-depth behavioural analysis of recruitment and testing of some key Influencer tactics. It also proposes using a BE lens to examine the demand side of recruitment as well as retention.

**Important Terms and Report Scope**

Two important terms are used throughout Chapters 1-5, and some background on their meaning and application is merited. One is the use of **young people** to refer to the population segment comprised of children through young adulthood that are the focus of this report. As the career decision journey begins in childhood prior to and during primary school, the term “young people” captures the range of this cohort from young children through young adults undertaking their post-secondary paths. It is more representative than other terms that lack broad acceptance of the specific age ranges that young people
encompasses. “Young people” is used by the Organization for Economic Cooperation and Development (OECD) throughout its in-depth and broad-ranging 2018 working paper on career guidance and other OECD studies, and by other entities looking at education and work paths.

The other notable term is the world of work. Also used by the OECD throughout its 2018 paper, this term captures work in its multiple dimensions from expectations of punctuality, appropriate attire, and behaviour while working (including the use of personal digital devices) to finding transportation to work sites. It includes many other aspects such as dealing with co-workers, management, and customers, and the need for education and training prior to being hired or after starting work in most occupations.

It is also important to set out the boundaries of our report. There are four key parameters shaping the focus and extent of this report’s preliminary BE framework and its applications to skilled construction work.

1. Our report focuses on the supply side (new entrants) of the skilled construction trades, not the demand side (training placements and jobs). We examine the path of young people, the effects of educational Influencers (guidance counsellors, teachers, and selected other staff) on students’ educational journey, and the impact of other Influencers on their choices (parents, peers, employers, labour unions, selected non-profit entities, and government). The demand side is also very important and relevant, and has numerous behavioural considerations; however, it is outside the scope of this BE study.

2. We assess recruitment in the skilled construction trades and related jobs, but not retention. The survey of construction workers’ component of the REST study provides valuable information on the attractiveness of the skilled trades for recruitment and even more information about addressing their retention aspects. An examination of retention as well as further in-depth recruitment analysis and testing using a BE framework and insights is recommended in Chapter 5. But an in-depth BE approach to and framework for retention as well as a fully comprehensive recruitment study are beyond the scope of this report.

3. While our report’s BE description, assessment, and recommendations are in depth and broad ranging, they are neither all encompassing nor exhaustive at this stage. The report is a preliminary BE framework that focuses on selected applications. In providing this initial BE lens, our report reflects 36 in-depth interviews with teachers, guidance counsellors, college faculty, parents, millennial skilled trades workers, and professionals with employers, labour unions, and non-profit associations. It reflects an extensive BE research literature review, utilizes the published reports of various other experts and organizations, and uses findings from the survey of construction workers. A truly comprehensive BE examination of recruitment, including testing various proposed tactics to gauge their effectiveness, and assessing the demand side as well as retention awaits future research.

4. Lastly, while we offer a BE lens on recruitment issues and labour shortages in skilled
construction work, we do not examine: (i) the broader market implications of the macro-
economic cycle or (ii) structural employment trends and technology developments for their
effects on recruitment. The demand for housing, infrastructure, industrial, and commercial
projects, the resulting demand for labour, and the changing nature of many skilled trades and
other sophisticated jobs in construction are important considerations. These and other factors
will have decisive impacts on the nature, size, and timing of shortages in the skilled construction
trades and related jobs. However, while crucial, the impacts of the macro-economic environment
and the changing structure of the economy on the demand for labour overall and in skilled
construction work specifically, are outside the scope of this report.26
Appendix A. BE’s Rapidly Expanding Role in the Private, Public, and Non-Profit Sectors

This overview highlights the increasing adoption of BE in the private, public, and non-profit sectors for in-person and digital approaches as well as its expanding role in recruitment.

The merits of applying an in-depth BE lens to recruitment in skilled construction work begin with the surge in adoption and usage of BE by other industries. Key influencers in young people’s career decision journey who adopt a BE-informed approach would be following the well-established and successful strategies and tactics of leading industry, government, and non-profit practitioners.

Without being formally labelled as such, BE applications have been used extensively in the private sector for many decades, starting with its utilization in advertising, product displays, and marketing since the early and mid-20th century. More recently, business adoptions and applications of BE have accelerated and expanded dramatically across many industries, particularly over the past five to 10 years. Today, BE is utilized by a wide range of companies in banking, energy, finance, retail, software, transportation, and other sectors, especially the leading technology firms. BE’s extensive use in business now frequently involves the combination of massive amounts of data and sophisticated analytics with in-depth applications of BE insights.

Although public sector and non-profit organizations were slower to embrace and utilize BE, their adoption and application of BE and its insights have soared since the 2007-’08 financial crisis, especially in recent years. By 2017, there were 196 dedicated teams in governments across the world using BE. Leading financial regulators are applying BE in the U.K., continental Europe, Canada, Australia, New Zealand, and other markets. Charities are using BE to better understand donor biases, emotions, motivations, social norms, and temporal considerations.

More recently, the profile and merits of applying BE insights were boosted strongly by a leading behavioural economist, Richard Thaler, winning the Nobel Memorial Prize in Economic Sciences in 2017. Thaler is the fourth BE winner of this prize, and the third in the past 16 years.
Economics would make a lot more sense if it were based upon how people actually behave, instead of how they should behave.

– Dan Ariely, *Predictably Irrational*³²

Collect data. Stories are powerful and memorable … But an individual anecdote can only serve as an illustration. To really convince yourself, much less others, we need to change the way we do things: we need data, and lots of it.

– Richard Thaler, *Misbehaving*³³
Among the strengths of BE is its base in over four decades of academic research that includes extensive testing of its foundations, development of key concepts, and a vast array of findings and insights.

This chapter’s focused literature review explores how BE’s foundations, core concepts and key insights help us understand our thinking, choices, and actions for recruitment. Its review of applicable BE research sets out relevant barriers and other factors creating impediments to:

i. young people making the best-suited career choices for their goals, interests, and skills; and

ii. key Influencers providing the most effective information and advice about careers, and exposure to the world of work.

Identifying these BE barriers and other BE factors is essential to understand how to promote more informed and deliberative thinking as young people assess career options and make decisions. BE’s key findings and insights also provide an evidence-based framework for enhancing Influencers’ tactics in person and online. (As noted in Chapter 1, Influencers are parents, other family, peers, educators, employers, labour unions, non-profit entities, and government.)

Too many young people who are well suited to and who would enjoy skilled work in the construction sector neither choose the training for, nor the college paths, to these careers.

Our objectives include using BE’s foundations, concepts, and insights to provide a framework and practical general applications to help better align young people’s career choices and actions with their interests and skills.

Too many young people who are well suited to and who would enjoy skilled work in the construction sector neither choose the training for, nor the college paths, to these careers. Significant numbers of university graduates who did not find their desired employment subsequently attend college to achieve the skills necessary to work in the trades and other jobs. There is also evidence that the numbers of students choosing apprenticeship options in high school is declining. BE research offers numerous findings and applications to improve the activities of Influencers so that they can be more effective in providing career information and interaction with the world of work in the construction sector.

BE Foundations: Dual Systems of Thinking, Cognitive Biases, and Other Key Concepts

The core concepts of BE are based upon understanding the systematic aspects of people’s thinking, decision-making, and actions. These BE foundations begin with a dual system model of human thinking:

• **System 1: Automatic thinking** is effortless, fast, associative, intuitive, and impacted by our basic emotions. Automatic thinking is ideal for most of our frequent or standard decisions such as what we wear each day, eat for breakfast, and choose as a route to work.
• **System 2: Reflective thinking** is deliberative, effortful, reasoned, and impacted by complex emotions. Reflective thinking is best suited for choices requiring more thought, that are time-intensive, and/or that are perceived as more significant.

Although these two systems are conceptually distinct, automatic, and reflective thinking are also interdependent and operate in tandem.²⁸ Our automatic thinking generally does most of the work in order to minimize the energy and mental effort required to meet our desired outcomes and effectively get us through our regular tasks. Reflective thinking comes into play when our automatic thinking cannot come up with an answer, if it encounters something surprising, and/or generates an obvious error.

Other foundational principles for a BE lens can be summarized in two areas.³⁹

1. **We have limits upon our time, energy, and mental bandwidth in our thought processes.** These constraints require us to frequently use mental shortcuts and rules-of-thumb (heuristics) to make choices in our automatic thinking. Mental shortcuts are very useful for most daily and other routine decisions. They often reflect our past experience and practical understanding. The knowledge implicitly embedded in these heuristics is frequently accurate and essential to conserving our time, mental bandwidth, and energy. However, these mental shortcuts can result in cognitive biases that can lead us to misperceptions, misjudgments, and/or uninformed choices and actions.

2. **Emotions, motivations, social influences and time dimensions as well as our mental models about the world have significant impacts upon our choices and actions.** Examples of basic emotional effects include that we do not think clearly and often rush to make choices when we are anxious or under major stress. More complex emotions such as shame or guilt can preclude decisions and can result in missed opportunities. Motivations are important as we may not use our full cognitive capabilities nor do so wisely if we see a decision as unimportant and/or a hassle. Our social environment has effects upon our choices and actions as we are highly vulnerable to what others think, and we often behave differently in a group setting than when we are on our own. Mental models can be crucial as our perceptions and thinking are guided by broad sets of ideas about how the world is structured and how it operates.

**Attention, Interpretation, and Action**

To better understand how cognitive barriers as well as the emotions, motivations, and other factors impact young people’s career choices and skilled construction trades’ recruitment, we draw upon a three-phase model of decision-making.⁴⁰ Each of these three phases decisively shapes our behaviour in distinct ways. The phases are:

i. **Attention:** What do we look at, hear, and notice?

ii. **Interpretation:** What do we perceive and understand? And

iii. **Action:** What initial action(s) occurs and are these sustained?

This framework of attention, interpretation, and action (as summarized in Figure 1 below) offers a conceptual and practical framework that will be used through the rest of this report. It is a very useful lens for understanding career-related decisions by exploring (i) what young people pay attention to in
terms of information, messages and people; (ii) what young people perceive and understand, and (iii) their initial actions and ongoing behaviour for recruitment.

![Figure 1: Understanding Our Behaviour: Attention, Interpretation and Action](image)

<table>
<thead>
<tr>
<th>ATTENTION</th>
<th>INTERPRETATION</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>To take notice of something or someone; selective concentration on an aspect of information</td>
<td><strong>Description</strong></td>
</tr>
<tr>
<td><strong>Application to career decision journey</strong></td>
<td>To have exposure to the possibility of a career in the skilled construction trades</td>
<td><strong>Application to career decision journey</strong></td>
</tr>
</tbody>
</table>

This three-phase framework also offers numerous insights and practical applications regarding the behavioural barriers faced by educators. These barriers impact their awareness and knowledge, and whether they recommend skilled construction work as being just as attractive a career option as college or university. In addition, focusing on what works to enhance young people’s and educators’ attention, interpretation, and action is essential to improving the activities of other Influencers (parents, employers, labour unions and non-profit entities), whether their interactions with young people are in person, in print, or online.

To understand the dimensions and key components of the attention, interpretation, and action framework, it is important to describe and position a broad range of cognitive barriers (external and internal), and emotional, motivational, social, and other factors.

These important BE foundations, concepts, and factors are explored below in some depth as they apply to one or more of our attention, interpretation, and action phases. The length of our commentary reflects these factors’ significance in understanding recruitment’s BE challenges. They are cited and used extensively throughout Chapters 3, 4 and 5. We also briefly apply these BE concepts and terms below to aspects of young people’s career decisions and, as appropriate, Influencers’ impacts as the introductory platform for the next three chapters.
In doing so, our application of BE insights draws upon academic and practitioner research, numerous empirical studies, national and Greater Toronto Area (GTA) surveys of skilled trades and construction workers, respectively, and our interviews of members in important Influencer segments.

**External Cognitive Barriers**

External cognitive barriers refer to factors outside of our mental processes and personal control that impede our thinking and desired behaviour. Although these cognitive barriers often are combined in their effects, they are conceptually distinct and separate in their impacts and implications.

- **Information Overload** results from the limits on our time, mental bandwidth, and energy that make it very challenging for us to attend to, perceive, and understand large amounts of information. We are “cognitive misers”, and seek to reduce our effort during decision-making. Yet, we receive massive amounts of information all the time from each of our senses in person and now online. Information overload is arguably more pronounced for young people given their heavy reliance upon online interactions and digital devices with the dizzying array of information and information sources on the Internet and these devices.

- **Choice Overload** occurs when we are faced with excessive number of choices and can cause us to experience various adverse effects, including unhappiness and decision fatigue. Having to choose from many options is even more difficult for us when we lack direct experience and in-depth knowledge of the choices offered. This is particularly relevant for young people looking at and assessing potential career paths, when options vary across multiple dimensions, and when comparison becomes increasingly hard to do. When faced with choice overload, young people can make poor decisions. These include not taking the time needed to assess all relevant options, making too quick a choice by defaulting to the easiest path, or avoiding making a decision altogether (choice deferral).

- **Salience** refers to information that stands out, is novel, and/or seems relevant. It attracts our attention, whether communicated in person, in print, or on digital devices. Our choices rely excessively on salient information instead of gauging all relevant aspects, particularly in our online decisions. It means that career information needs to be provided in attractive ways to be salient whether it is delivered in person or online.

- **Hassle Costs** can decisively shape our attention, interpretation, and actions. Hassle costs can cause major challenges in completing a task, such as when information is not easy to find, is tough to navigate, or if the process involved is complex. We are far less likely to search for, pay attention to, understand, use information, or choose wisely when hassle costs are substantial. Even slight amounts of extra hassle can have significant negative effects on our behaviour. Given the limits on our time, mental bandwidth, and energy, minimizing hassle costs can be crucial to improving the attention, interpretation, choices, and actions of young people, educators, and parents.

**Internal Cognitive Barriers**

As human beings, we have a range of internal biases in our thought processes that promote automatic over reflective thinking in our decisions, and/or impede desired actions. For recruitment to skilled
construction work, important biases affecting young people and Influencers are outlined below.

- **Affect bias** occurs when we use emotions as information to guide behaviour. While the affect bias can be useful for routine decisions, when good or bad feelings quickly come to mind, this bias can lead us to make decisions too rapidly and poorly assess the important information and options available. For example, the affect bias can be decisive when we face major time pressures, have uncertainty, and/or make long-term choices without significant direct experience or in-depth knowledge. It is a notable challenge for many secondary school students, especially in their final year and months of high school, given the fast-approaching need to choose their initial post-secondary path.

- **Availability bias** is one of the most universal mental shortcuts. This bias occurs when people make judgments about options, events, and risks based on how easily an event, example, or other experience comes to mind. Availability bias means that our perceptions of an option's merits and of the possibility of an event occurring are higher simply because an event or example readily comes to mind. Availability bias about job options and work can have a decisive impact on young people's perceptions and career choices as well as the advice and views of guidance counsellors and teachers. It can also be a major challenge for employers and labour unions to expand the range of “available” career paths for young people, educators, and parents as chapters 3 and 4 explore in detail.

- **Confirmation bias** occurs when we seek out or assess information in a manner that fits with our existing views and preconceptions. **Belief bias** occurs when we are more likely to ignore or disagree with information that challenges our beliefs and accept information that is consistent with our views. Consideration of career paths, including the merits and requirements for viable options, and career choices can be significantly complicated by confirmation and belief biases, especially when they limit the range of potential careers from misperceptions or a lack of consideration of available options.

- **Inattention bias** occurs when people choose to avoid information that challenges their beliefs, involves requirements to act, and/or requires emotional control. The inattention bias includes avoiding information or having a biased interpretation of information in order to conform to our beliefs and to ignore what does not. Information avoidance is also often driven by the desire to reduce anxiety, avoid regret, and/or to remain optimistic. In the context of uncertainty, especially for major decisions like career paths, the decision about whether to embrace information or to ignore it depends upon whether the pleasure of making sense is greater than the expected pain such as the anxiety of having that knowledge. Notably, choosing to avoid useful information will occur most among people who value excessively the present and unduly discount the future.

- **Inertia and Status Quo** biases cause an aversion to most changes and can lead us to inaction. Often these biases result from habits developed from repetition and learning by association. Inertia and status quo biases can result in undue persistence of attitudes and relationships. They can cause views to be held strongly despite information and advice from experienced observers that suggest, at minimum, re-evaluating and reconsidering existing approaches and perceptions such as options for post-secondary paths. For example, the status quo bias for favouring university may be
particularly prevalent for young people whose families have not worked in the skilled construction trades. Inertia and status quo biases make efforts to reduce hassle costs for career information searches and contact with the world of work especially important.

• The **Time-Distance Gap** refers to valuing of near-term benefits and costs far more than long-term gains and losses, making the time dimensions of our choice options crucial. Research has shown people's decisions change depending upon whether we consider them for the long-term or the near future. Our near-term preference leads us to focus upon concrete and specific elements of choices as well as their feasibility and cost. In contrast, the future is seen as abstract and general in its aspects. The time-distance gap often leads to consideration of desirability and benefits in the short term at the expense of more appropriate and beneficial long-term paths.

A related but conceptually distinct aspect of time dimensions for career choices involves its *credence good* elements. The merits and costs of a career path cannot be accurately assessed immediately after making a choice. It is only over the medium and longer term that an accurate assessment of the benefits and costs of a career choice can be made.

• **Procrastination bias or the Say-Do Gap** refers to the large distance that most of us have between many of our intentions and our actions. The procrastination bias or say-do gap may result from the inertia or status quo biases, the complexity or difficulty of decision-making (including choice overload), and/or a bias for the present over the future (the time-distance gap). The gap between what we say or intend and what we do may be crucial whether for young adults or for the rest of us, especially for career decisions.

**Emotional, Motivational, and Social Factors Impacting Young Adults and Influencers**

Beyond our external and internal cognitive barriers, other factors can have decisive influences directly upon our behaviour. They also interact with and may reinforce various cognitive biases and other BE barriers in choosing careers. They are the following.

• **Emotions** shape many of our decisions and actions as well as what we attend to, perceive, and understand. Our emotional states impact our physiological states, which can shape our cognition – for example, basic emotions of anxiety, fear, and stress lead to poorer decisions. More complex emotions, like shame or guilt, may impact which career options are considered and chosen. Being overly optimistic about one’s career options and choices can also be problematic.

• **Motivation** – Even though two or more people may be similar in their cognitive capacities, motivational factors will impact the extent to which we engage in rational analysis. Various studies show that we can differ significantly in our willingness and motivations to use our reflective thinking. Motivational considerations are very relevant to career decisions, especially when young people do not receive timely information and balanced advice about the full range of their career options. Motivation will likely be a significant factor determining whether and how extensively they seek information in-person and/or online. It can also meaningfully influence young people’s persistence in investigating and pursuing a career path if they encounter criticism and/or uncertainty.
• **Social Norms and Networks** – Our choices and actions are frequently shaped by our social environment. Social norms are powerful informal guidelines about what behaviour is expected or acceptable in groups or communities. Together with our social networks – the people we surround ourselves with in person or online – they have material impacts upon our behaviour. Social norms and our social networks can spur our tendency to engage in or be susceptible to “groupthink”, our vulnerability to peer pressure, and the increased saliency of others’ views, thoughts, and actions. This is especially the case online and is further magnified by social media. For Influencers, consideration of how to work effectively with social norms through role models and effective messengers (see below) can be vital to success.

• **Mental Models** – When we think, we use concepts, categories, identities, narratives, and worldviews drawn from our communities and experiences. Our mental models shape what we attend to, how we perceive and understand information and choices, what choices we make, and the actions we take. They reinforce and interact with our confirmation and belief biases. For recruitment in skilled construction work, the role models of family, friends, and our cultural and ethnic affiliations can shape our approaches, identities, images, and stereotypes that form our career mental models.

Figure 2 incorporates and lists cognitive barriers and mental models, as well as emotional, motivational, and social factors within the BE framework of our attention, interpretation and action. It merits reiteration that a number of these BE challenges affect more than one phase of young people and educators within this framework as Figure 2 shows below.
Figure 2: Understanding Attention, Interpretation and Action – BE Barriers and Factors for Recruitment

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<th>ATTENTION</th>
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<td><strong>Description</strong></td>
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<td><strong>Description</strong></td>
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<tr>
<td>To take notice of something</td>
<td>To perceive and understand</td>
<td>To make initial and ongoing</td>
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<td>or someone; selective</td>
<td>available information; cognitively</td>
<td>decisions and take behaviours</td>
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<td>concentration on an aspect of</td>
<td>making sense of information</td>
<td>consistent with reaching those aims</td>
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<td>To have exposure to the</td>
<td>To interpret skilled construction</td>
<td>To select a career in skilled</td>
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<td>possibility of a career in</td>
<td>trades as an interesting viable</td>
<td>construction trades and take</td>
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<td>the skilled</td>
<td>career option</td>
<td>actions to being such a career</td>
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<td><strong>Relevant barriers</strong></td>
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<td>Availability bias</td>
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<td>Confirmation and belief bias</td>
<td>Confirmation and belief biases</td>
<td>Mental Models</td>
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<td>Hassle costs</td>
<td>Hassle costs</td>
<td>Say-do gap</td>
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<td>Inattention bias</td>
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<td>Social norms and networks</td>
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<td>Information overload</td>
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<td>Mental models</td>
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<td>Salience</td>
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<td>Time-distance gap</td>
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The Last Mile, Choice and Information Architecture, Nudging and Boosting

The Last Mile

Effective application of BE’s foundations and major concepts through behavioural insights starts with recognizing and focusing upon the last mile. This refers to the touchpoints that organizations have with individuals in their delivery of services. Last-mile problems arise from too much focus on strategy, product or program design, and/or technology with too little emphasis and resources devoted to effective delivery tactics. Effective communications and other direct interactions in person, in print, and/or online with customers, employees, students, or other recipients are critical to the success or failure of achieving the desired results.
For recruitment to skilled construction work, improving the last mile is essential to helping young people be more engaged and deliberative in making career choices. Utilizing BE insights to improve recruitment starts with each Influencer group considering how to make career decisions more important, relevant, and timely for young people. Applications of BE can help to increase young people’s use of reflective thinking in considering and deciding upon their post-secondary paths.

While Chapters 3-5 address the last mile in much more detail, its importance merits emphasis here given the impacts of timing, frequency, formats, and content of Influencers’ interactions with young people whether in person, in print, or online. These interactions need to be carefully considered and better understood to determine how Influencers can best provide information and/or advice in a behaviourally informed manner. It means that effective touchpoints reflect and address major cognitive barriers and other BE factors. Examples of these barriers and factors include the amount of information provided, its complexity, its context, its format, the type of messenger used (if any), the salience of the information and topic, and relevant social norms.

**Information and Choice Architecture, and Framing**

**Information architecture** refers to the ways in which the method of displaying or providing information can influence the way people process it. BE research has shown that people process information in the form that it is given. Information architecture is especially important online given how its format impacts our cognition and focus.

**Choice architecture** refers to the design of different ways choices can be presented to individuals and the effects of that presentation on individuals’ decisions and actions. In highlighting choice architecture, it is important to emphasize that our decisions are impacted by our environment all of the time. We are always reacting to choice architecture as our environment sets the context, format, timing, and other factors for our decision-making.

Given that information and choice architecture significantly shape our decision-making in so many ways, our focus is also on the actual and potential role of Influencers in setting or altering both types of architecture. Thinking about and carefully creating or improving information and choice architecture are crucial to help young people, parents, and educators better attend to, understand, and act upon information and options. For example, simplifying the presentation of information and options, causing associations through our automatic thinking, or making a particular option easier to select than others, can decisively influence people’s thinking, decisions, and actions.

For choice architecture, **framing** effects are essential to consider. The ways in which choices are presented can highlight the positive or negative aspects of particular options. Framing can significantly alter the relative attractiveness of choices and actions. Even seemingly minor or irrelevant details of how a choice or situation is presented can shape our attention and perception since we often jump to conclusions based on limited information.

Choice architecture and framing effects highlight the need for young people to avoid **narrow framing** in choosing a post-secondary career best suited to them. Narrow framing refers to when we overlook
important relevant information and/or choice options in our decision-making. It usually occurs because of BE barriers (for example, availability and affect biases, social norms, or mental models). Narrow framing is particularly relevant for young people if they limit the information about, and the range and type of career options being considered.

Nudging

Nudging involves changing choice architecture by effectively altering the way that choices are presented to promote a beneficial outcome or better decision-making. Nudging refers to “any aspect of choice architecture that alters people’s behaviour in a predictable way without forbidding any options or significantly changing their economic incentives.”

Nudging comes in many different forms, and has many applications. It may be used for educational and multiple other purposes. For example, nudges can impact our decisions by changing the:

i. number of choices presented to us;
ii. way in which choice attributes are described;
iii. order of these choices on a menu or website; and/or
iv. presence of a default (pre-set course of action).

Effective nudges have achieved major benefits at minimal cost in expense and resources. Notable examples of nudging include changing the organ donation consent default for individuals from having to opt in to having to opt out. This nudge has achieved much higher organ donation rates for a range of countries. Other relevant nudge examples include that click-through rates in responding to emails could be increased by 40-60% by decreasing the amount of text in the emails, and online signups increased significantly when website landing pages were made simpler and with less clutter.

Boosting

In a number of areas, including recruitment, sustained improvement in decision-making and individual outcomes requires enhanced capabilities beyond better information and choice architecture, and enhancements through nudging. Ongoing improvements to young people’s career decisions can also require increasing their applicable decision-making capabilities and involve more than one-time or short-lived experiences. It merits highlighting that several BE researchers have advocated going beyond nudges through boosting to increase people’s competencies and effectiveness in decision-making.

When people are at risk of making poor and/or uninformed choices, boosts offer a way to enhance their decision-making skills and knowledge.

Boosts aim to produce sustained behavioural benefits by: (i) instilling a new competence or other knowledge, or (ii) fostering existing skills and understanding. When people are at risk of making poor and/or uninformed choices, boosts offer a way to enhance their decision-making skills and knowledge. Boosts range from short-
term interventions requiring little time and cognitive effort from individuals to ones that need substantial amounts of training, effort, and motivation. From both OECD research and our interviews (see Chapter 4), it is clear that boosts through sustained interactions with Influencers can have notable benefits for young people.

Boosts can offer competencies in areas that schools currently either do not address or do so inadequately. They can also help to offset some of the challenges encountered by young people facing significant economic and social network challenges. BE research has shown that low income and especially poverty can reduce our cognitive capacity to solve problems, make reasoned choices, or retain information. Its impact on our cognitive power includes lesser executive control, reduced ability to plan and increased impulsiveness. One interviewee with longstanding experience working with socio-economically disadvantaged youth stressed the importance of improving their decision-making capabilities through boosts given these young people’s lesser training in life skills, and much narrower exposure to and experience with career options.

Notable examples of where boosts have been used effectively to help people’s decision-making with credence goods or complex situations include finance and medical care. While different in their specific aspects, finance and medical decisions share similar challenges with choosing a career path. All three face major BE obstacles such as complexity, information overload, self-control issues, and the time-distance gap.

Combining boosts with nudges can be powerful if both approaches effectively complement each other, and thereby increase the desired behavioural outcomes. For young people, the opportunity to combine improved information and choice architecture with sustained increases in their relevant exposure, experience, and knowledge has substantial merits. It offers them enhanced awareness, understanding, and choices about the skilled construction trades and other options beyond university and college.

Applying BE Insights Effectively: Using the EAST Framework to Improve Behaviour

One of the world’s most successful organizations in applying BE insights directly and in BE advisory work in several continents, the Behavioural Insights Team (BIT) offers important lessons in its BE approach. BIT’s acronym EAST nicely summarizes its effective BE application framework to improve people’s behaviour. Successful implementation of EAST involves making desired choices and actions easy, attractive, social, and timely.

Illustrations of each of EAST’s four tenets demonstrate its potential benefits:

- **Make it easy:** 25% more poor students go to university when their forms are pre-filled (reduced hassle cost);
- **Make it attractive:** Using the story of one child rather than statistics of millions being affected resulted in two times more donations (messenger effects, reminders of others, and salience);
- **Make it social:** People are 16% more likely to pay if they are informed that most people “pay on time” (social norms – what others are actually doing); and
- **Make it timely:** Three times more workers choose a healthy option a week ahead rather than on the day that they are asked (time-distance gap).
For recruitment into skilled construction work, the EAST approach is a powerful framework for addressing the last mile and improving choice architecture through nudges. Among its helpful insights is the BE importance of personalization, a vital component of working with young people. Individual goals, needs, skills, and wants vary substantially, and the choice set of options for each young person needs to reflect the unique characteristics and circumstances of that individual. As another example, the messenger effects of Influencers – such as employers, employees, and labour unions – are also important given their credibility, knowledge of construction, and direct work experience.

Figure 3 below excerpts and lists instructive highlights from BIT’s EAST Framework for implementation in Influencer approaches to career decisions and to recruitment.

<table>
<thead>
<tr>
<th>Description</th>
<th>Examples of Things to Think About</th>
</tr>
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<tbody>
<tr>
<td>Easy</td>
<td>• Simplify</td>
</tr>
<tr>
<td></td>
<td>• Friction: remove, or add it to inhibit certain behaviours</td>
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<tr>
<td></td>
<td>• Defaults: set the easiest path as the healthiest, safest option</td>
</tr>
<tr>
<td>Attract</td>
<td>• Personalize: use recipient’s name, make it relevant</td>
</tr>
<tr>
<td></td>
<td>• Salience: make key point stand out</td>
</tr>
<tr>
<td></td>
<td>• Messenger: experts and named individuals beat anonymous or distrusted sources</td>
</tr>
<tr>
<td></td>
<td>• Emotion: as important as reason</td>
</tr>
<tr>
<td>Social</td>
<td>• Norms: what others are actually doing</td>
</tr>
<tr>
<td></td>
<td>• Networks: a friend or colleague recommends</td>
</tr>
<tr>
<td></td>
<td>• Reciprocity and active commitments: promises</td>
</tr>
<tr>
<td></td>
<td>• Reminders of others: eyes and faces</td>
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<tr>
<td>Timely</td>
<td>• Habits: intervene before they become established</td>
</tr>
<tr>
<td></td>
<td>• Key moments: when behaviour is disrupted</td>
</tr>
<tr>
<td></td>
<td>• Priming and anchoring: the power of what just came before</td>
</tr>
<tr>
<td></td>
<td>• Time inconsistency: discounting of the future</td>
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</tbody>
</table>

Making information attractive for young people, parents, and educators should also involve the use of effective audio-visual messages. Research suggests that audio-visual information likely has a bigger effect on our judgments and choices than written information. When we see and watch videos or pictures online, we engage a part of the brain that processes information quickly and generates strong
emotions, making information more attractive and salient. For young people, it is especially important to present information about careers in the most salient manner given their reliance on digital devices and sustained exposure to advanced displays and attractive content online. We return below to the merits of audio-visuals for their effectiveness with young people, parents, and educators in future chapters, noting videos such as those on Job Talks.

Several other significant BE tactics can help achieve EAST results and are highly relevant.

- **Calls to Action** – Clear information about next steps and recommended behaviour helps to counter inertia and procrastination biases. It makes it much easier to find information and take appropriate action.

- **Co-creation** – When we are actively involved in creating a product or information, we are more likely to value it. Focusing on engaging people at events and/or online with interactions that involve us spending time and investing effort helps make information and subsequent actions more salient and valuable.

- **Commitment** – We are motivated to maintain a consistent, positive image of ourselves. When we state an intention, or pledge, to others to undertake an action, it makes it more likely that we will change our behaviour to avoid damaging our reputation or self-image.

- **Fresh start effects** – Most of us set new goals at the inception of new seasons, years, and at milestone events (birthdays). It is very timely to prompt people to take actions towards medium- and long-term goals at these occasions when we are more receptive.

### The Crucial Role of Testing BE-Driven Tactics

As leading BE practitioners have demonstrated and emphasized, it is essential to test the effects of applying behavioural insights to determine the direction and magnitude of their impacts. Testing is a cornerstone of BE as it is grounded in the scientific method of asking questions and collecting and analyzing data to answer these questions. While data can be qualitative (e.g., interviews, focus groups) or quantitative (e.g., surveys, actual behaviour), our focus is on laboratory and other tests. The goal of these quantitative experiments is to help determine cause and effect.

Whether adopting EAST-driven tactics or more extensive initiatives like boosts, BE testing is crucial to evidence-based effectiveness and success. Trials of information architecture, nudges and boosts help gauge the effects of different tactics. They can determine their absolute impacts and relative merits. Tests are vital to evidence-based approaches as they enable organizations to focus on the most effective tactics. Testing is also a feature of leading BE units and other entities using BE across the globe. For recruitment, testing can help (i) gauge behavioural issues hindering existing approaches, and (ii) develop better strategies and tactics to solve these challenges.

Solid support for embracing and undertaking testing is provided by the OECD’s 2018 career guidance paper which combined a comprehensive economic and policy literature search with comparative country analyses. This OECD paper highlights that evidence-based approaches involve a combination of experiments/quasi-experiments, longitudinal data, and other statistical research. Good evidence-based practice requires testing impacts of different tactics including qualitative and quantitative performance indicators.
In considering and approaching testing, there is a broad spectrum of behavioural trials that vary in terms of sophistication, resources required, and costs. The gold standard for behavioural tests are Randomized Controlled Trials (RCTs) that can range from simple lab experiments where people are asked to make hypothetical choices in straightforward trials to more complex tests through field experiments with numerous variables. (See Appendix B for more details about RCTs, and a concise description of the range of experimentation options.)

For our purposes, the critical aspect is that we can make more evidence-based and much better decisions within our preliminary BE framework with BE testing.

In advocating strongly for BE testing, it is important to put its merits in perspective. We would stress that it is not a pre-requisite for every tactic or new initiative. It would be impractical both in time and costs to trial every program or to delay all new initiatives until they have been tested. It can be easier to identify behavioural issues and to develop potential solutions than to gauge and assess the impacts of these solutions. It is also the case that there will be opportunities for changed or new tactics that are behaviourally informed – based on BE research and insights – but not tested.

For our purposes, the critical aspect is that we can make more evidence-based and much better decisions within our preliminary BE framework with BE testing. It can achieve more effective outcomes. Accordingly, testing is fundamental to implementing more effective BE-driven strategies and tactics to improve recruitment to skilled construction work.

Summary

This chapter has set out the foundations of BE, its key concepts, findings and insights for recruitment to skilled construction work. It has examined how cognitive barriers and other BE factors connect with the last mile, information and choice architecture, and how nudges and boosts can help address behavioural issues. It has highlighted the importance of using the EAST framework, and the essential need for testing of nudges and boosts.

In the next chapter, we examine the nature of young people’s journey into or away from skilled construction work, look at their career decision journey using a BE lens. Chapter 3 examines young people’s challenges in choosing the post-secondary path best suited to them and the impacts of Influencers.
Randomized Controlled Trials (RCTs) are the best way to assess whether a behavioural tactic is working. RCTs have been used for more than six decades in health to gauge the effectiveness of new medicines, and more recently, by a host of other sectors, including business to test website layouts.

The advantages of RCTs include isolating all the other factors affecting people's behaviour to test the impact of one particular tactic (variable) and a desired result (outcome).

An RCT measures the impact of the BE tactic being used in one group against the base case of a randomly assigned control group where the BE intervention is not used. RCTs isolate all of the other influences affecting people’s attention, interpretation and actions from the condition, initiative or other tactic being tested. They enable assessment of a tactic against what would have happened if nothing had changed.

Turning to the options for BE testing, the array of potential experiments runs the gamut from laboratory experiments to field experiments and can be summarized as follows:

- Lab experiments can gauge hypothetical or actual choices with consequences in a controlled environment with standardized procedures;
- Natural tests can use existing data or new data generated from existing conditions; and
- Field experiments involve real world situations, and can range from testing a single tactic with data generated on a small scale to large-scale RCTs running tests of different conditions and tactics simultaneously.
Effective provision of career guidance should take into account the growing body of research literature and provide regular opportunity for young people from primary education onwards to reflect on and discuss their prospective futures.

– Pauline Musset & Lucia Mytna Kurekova, OECD (2018)95

When Canada’s career counsellors were asked last year [2017] to rate their own system in terms of its ability to prepare students for the world of work, they gave it a 2.5 out of 5. Barely a pass.

This chapter explores the career decision journey of young people in detail and specifically examines their consideration of skilled construction work as a career option. It maps a timeline of their important career-related activities, decisions, and touchpoints with key Influencers. This chapter highlights issues and opportunities throughout young people’s career decision journey, applying the BE foundations, findings, and insights set out in Chapter 2 to better understand the recruitment journey into the skilled construction trades and related jobs. It draws upon additional academic, policy, and our primary research, including 36 interviews.

We focus upon the last mile, especially its information and choice architecture, but note where boosts to young people’s decision-making capabilities can occur. This chapter assesses the critical role of digital technology and its influence on the information and choice architecture for young people’s information seeking and decision-making about their careers. It also examines some BE issues affecting various Influencers, with an emphasis on educators and family. The use of BE concepts and insights introduced in Chapter 2’s literature review are highlighted in bold font when these BE factors are initially applied.

As introductory background to young people’s career journeys, it is critical to note that the nature of young people’s career options and their career choice processes have shifted fundamentally. In the past, career paths were more linear and stable for most adults. Many people often worked at one organization for the majority, if not, all of their working lives. Over the past two decades and especially more recently, career paths often include working at multiple organizations and in a number of occupations. Further, the range and type of work opportunities available continue to change with the structural economic impacts of digital advances and other new technologies as well as demographic trends.

As such, the school-to-work transition for young people today lacks the traditional structure and typical paths of previous generations. This more challenging post-secondary environment requires young people to look at large amounts of information to make choices, and requires high levels of self-direction for effective decision-making. Various studies, including those on career success that are self-reported, highlight the importance of motivation, planning, and skill development competencies, as well as networking for successful careers. This shifting nature of career path choices introduces a new layer of complexity for young people trying to (i) find and understand career-related information, and (ii) make career path decisions well suited to their interests, needs, and skills. This chapter’s BE assessment and mapping of young people’s career decision pathways looks at all of these considerations.

A BE Lens on the Career Decision Journey of Young People

What is the timeline of the career decision journey?

Although a “career decision” implies a choice made at one time, career paths for each of us involve a journey that unfolds over time and begins early in life. The psychological and social expectations of an occupation and career are developed well before a young person makes an initial career decision, including beginning to work.

It is useful to look at young people’s career choice path occurring in three phases: primary (kindergarten to Grade 6); middle and secondary (Grades 7-12); and post-secondary (see Figure 4). Multiple pathways
exist in the post-secondary phase, including starting work, beginning an apprenticeship or other training for a trade, or pursuing further education through university and/or college. Given our emphasis on the initial post-secondary destination, we primarily focus upon the middle and secondary school years. However, research and our interviews highlight crucial elements of the primary and post-secondary phases as well.

Figure 4: Concise Overview of Career Decision Journey

Young people’s attitudes, perceptions, and views regarding career opportunities develop initially and are shaped significantly in childhood.¹⁰²
Most students have preliminary ideas about their intended career pathway in early to mid-adolescence,\textsuperscript{103} and these are often quite accurate in terms of future choices.\textsuperscript{104} As explored in Chapter 2, \textit{mental models} refer to our broad and structured ideas about how the world works, and specifically, we all have mental models regarding careers and work. Beginning in childhood, these mental models develop through experiences and messages received throughout one’s life. Career-related mental models help shape \textit{attention, interpretation,} and \textit{action} when it comes time for young people to make their initial post-secondary and further career decisions.

Parents and educators significantly influence the formulation of career mental models throughout childhood.\textsuperscript{105} These early Influencers of self-awareness and understanding of careers in primary school are often underestimated and inadequately understood. Yet our interviews and a range of other research\textsuperscript{106} highlight the importance of early impressions, information, and exposure to various careers. A broad range of interviewees suggested early exposure in primary school and the middle grades is important to increase awareness of careers in the skilled construction trades. Several highlighted the importance of communicating to young students the need to take mathematics and English in high school for many construction careers. Research also stresses the importance of the number and quality of interactions, beginning with the early exposure of children in primary school and middle grades to the world of work.\textsuperscript{107}

Despite the importance of career mental models and of children's exposure to the world of work, there are few formal education touchpoints with students in the primary school phase. In Ontario’s education system, the current curriculum-mandated touchpoint is the career development portfolio,\textsuperscript{108} titled “All About Me”, during primary school. The All About Me portfolio is intended to focus on developing students’ understanding of their own strengths, weaknesses, and interests, and beginning to explore career opportunities for kindergarten through Grade 6. The content of these portfolios for students – and the extent and effectiveness of their implementation, monitoring, and tracking – are important BE considerations.

**Middle and Secondary Grades (7 to 12)**

Development of career mental models continues throughout the middle and secondary grades (7-12). Adolescents’ selections of secondary courses are early decisions that directly shape their career opportunities. Again, despite the importance of career and post-secondary choices, the career decision journey of young people is characterized by few formal touchpoints with key Influencers (see Figure 7 below) through the middle grades and secondary school. There are only two curriculum-mandated touchpoints during these grade years in Ontario:

i. \textbf{Individual Pathways Planning}:\textsuperscript{109} a career development portfolio focused on exploring career goals and plans. The Individual Pathways Planning (IPP) portfolio is to be developed throughout the middle and high school grades. It is intended to offer multiple touchpoints as it is used, reviewed, and updated with students and parents. Indeed, the Government of Ontario suggests that the IPP portfolio be reviewed with parents on a yearly basis.

ii. \textbf{Grade 10 Career Studies Course}:\textsuperscript{110} a half-credit course for one semester in Grade 10 designed to guide students in developing self-knowledge, exploring potential career opportunities, and setting goals and creating plans for a post-secondary destination.
Like the primary school All About Me portfolio, there are important BE considerations in considering the IPP and the Careers Studies courses including their content, the extent and effectiveness of their implementation, and the amount and quality of monitoring and tracking of their impacts.

Other formal touchpoints for the middle and high school grades exist but are not mandatory. Young people’s exposure to these opportunities varies considerably by school and by region. Students may have access to formal one-on-one meetings with a guidance counsellor, where a guidance counsellor can provide information and advice. Our interviewees and other sources indicated these meetings are available primarily for students who proactively seek them out. The extent and regularity of this meeting option for most Ontario students is unclear.

A co-operative education semester ("co-op") is another optional formal event available in all school boards in Ontario. In a co-op semester, a student experiences hands-on learning by completing a work placement. Students can count two co-op semesters toward their Ontario Secondary School Diploma (OSSD). Co-op programs allow students to connect with a co-operative education teacher as well as with the world of work, especially individuals working in the field during their work placement. Co-op semesters provide an opportunity for young people to boost their career-related knowledge and skill development, provided they are proactive in pursuing these opportunities.

Any full-time high school student participating in co-op education involving the skills and duties of a skilled tradesperson at their placement is by definition an Ontario Youth Apprenticeship Program (OYAP) student. There are three OYAP options: regular, specialized and accelerated that are summarized below.
Figure 5: Overview of OYAP’s Three Levels for High School Students

<table>
<thead>
<tr>
<th>Regular OYAP</th>
<th>This introductory general program offers placement in one of more than 120 trades approved under Ontario legislation to full-time students aged 16 and older who have at least 16 credits. Regular OYAP introduces students to job environments and specific trades but has no connection to a Registered Training Agreement (see below), and no credits apart from co-op credit(s).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specialized OYAP</td>
<td>This more focused year-long OYAP program offers multiple technological education courses in a key sector, combined with several co-op credits in that key sector. This combination of credits allows for extensive learning around tools, materials, and safety considerations. Only certain schools offer Specialized OYAP from year to year. Specialized OYAP typically occurs in Grade 12, but a number of students doing their so-called “fifth year” of high school return to do this program.</td>
</tr>
<tr>
<td>Accelerated OYAP</td>
<td>This program is unique in that it includes Ontario-recognized Level 1 Apprenticeship curriculum, combined with multiple co-op credits with an employer (sponsor) who signs the student on with a Registered Training Agreement. This program is only open to students who have completed all other requirements for their high school diploma (OSSD). It is offered in collaboration with local colleges, union training centres and selected other entities.</td>
</tr>
</tbody>
</table>

Other formal touchpoints might include in-person career awareness, information, or planning events, such as job fairs, career panels, job shadowing, etc.\(^{113}\) These types of career events allow young people to expand their information and choice architecture in terms of career awareness and, in the case of extended workplace experience and/or work-related courses, boost their career-related decision-making capabilities and development.

Unfortunately, young people’s exposure to these types of events varies significantly across schools and regions, and by the amount of active effort the student and their parents invest in career research. As a result, some young people may have no exposure while others have extensive opportunities.

Finally, young people have many informal opportunities to learn about careers. These include unstructured yet significant touchpoints, such as conversations with parents, peers, extended family, and teachers. These informal contacts may occur at any point along the career decision path, and the frequency and depth of these touchpoints varies widely among students.

Post-Secondary Paths

Students graduating from high school have a number of path options: work; a career in the skilled trades involving extensive formal and/or informal training; college; or university. For new entrants to the skilled trades, they undertake one of several paths: an apprenticeship, a pre-apprenticeship...
program, direct employment with on-the-job training, or other training paths that may include college or potentially some university components.

In terms of skilled construction work in particular, young people may be recruited after earning certificates, diplomas, advance diplomas and/or degrees as accreditation through college training (e.g., George Brown College and Humber College programs). As noted above, young people may also enter the skilled construction trades via apprenticeships, pre-apprenticeship programs, or direct employment with training programs. These apprenticeships may involve government oversight and regulation, or they may occur in a wide range of trades without formal government involvement in the on-the-job training.

Recruitment into these formal and informal training programs for entry-level positions often occurs via family, friends, and peers. Yet, the low number of registered apprentices under the age of 24 is a major concern. Together with the low number of other new entrants to the trades, our interviews and other research indicate that skilled trades are not often the first or even the second post-secondary choice for many young people. Several of our interviewees estimated up to 50% of students enrolled in college level, construction-related programs are mature students. As such, the post-secondary phase can also be a critical time for considering recruitment of into skilled construction work, especially those young people who have not found their desired employment after high school. Various employers told us that recruiting these young people is a significant source of new entrants to skilled construction work.

Figure 6: Additional Post-Secondary Path Challenges

There are also challenges with respect to the paths to skilled construction work for students taking construction courses and training programs. Several interviewees stressed that too many pre-apprenticeship courses are designed, supported, and delivered with insufficient consideration of industry demand. Students selecting these courses need to be aware where there is an over-abundance of applicants vs. long waiting lists for jobs, and to know and consider these and other factors before taking one of these pre-apprenticeship programs.

These interviewees also highlighted the need to address misperceptions and inadequate information about employment prospects. The former problem includes students’ views that if they take one of these courses, employment quickly follows. This may be true for certain trades where there is high demand, but not for others. In other cases where demand is high, there is often insufficient information available about opportunities and the education and/or training required for these trades.

In addition, various interviewees stressed that too often students graduating from pre-apprenticeship programs and some diploma programs do not understand what is required after they graduate to find a job. Questions frequently asked about these next steps include how to find employment? Does the college help find an employer? How to seek union membership for applicable trades? After being hired as an apprentice, who registers them as apprentices, and who manages their apprenticeship training?
Who are the key influencers with whom young people interact?

Many individuals and organizations have the potential to influence children and young people along their career decision pathway. These key Influencers include family members, peers, teachers, and guidance counsellors as well as organizations such as employers, government, labour unions, and non-profit associations that interact with students about career opportunities.

While the extent and nature of Influencers’ impacts will vary for each student, a general summary of their effects on young people’s career decisions can be useful. An overview of Influencers and their impacts is described below. Figure 6 summarizes the timing and magnitude of each of these Influencer groups.

Educators

Teachers and guidance counsellors are our focus as the leading Influencers within the education system. They are highlighted in the BE research, and by our interviewees as having the most influence upon students as young people develop career mental models and make career-related decisions from kindergarten through Grade 12.

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**Figure 7: Education Impacts and Career Decision Journey**

<table>
<thead>
<tr>
<th>Primary School Phase</th>
<th>Middle &amp; Secondary School Phase</th>
<th>Post-Secondary School Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Curriculum Activities</strong></td>
<td><strong>Optional Activities</strong></td>
<td><strong>Decisions</strong></td>
</tr>
<tr>
<td>All About Me Portfolio</td>
<td>Informal career opportunities: discussions with family and peers, media and exposure, etc.</td>
<td>Co-op, OYAP, and Specialist High Skills Major</td>
</tr>
<tr>
<td>Selected career exploration activities: career days, workplace visits, speakers from world of work in classrooms, etc.</td>
<td></td>
<td>Formal meeting with a Guidance Counsellor</td>
</tr>
<tr>
<td>Individual Pathways Plan Portfolio</td>
<td>Formal career exploration activities: career days, training centre and workplace visits, career panels, etc.</td>
<td>Secondary School course choices</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Initial Career Path Decision</em></td>
</tr>
</tbody>
</table>
Teachers

Teachers are a major source of direct and indirect influence throughout young people’s school-age years. They influence the framing and other choice architecture for students by the way they teach the curriculum and introduce students to the world of work in their classrooms. Teachers’ strategies shape the information architecture and thus career knowledge of students such as relating schoolwork to practical examples, occupations generally, or trades specifically.

For example, teachers using practical examples in the classroom to demonstrate the merits of learning science can lead to better performance and understanding of science-related career opportunities. Further, teachers can impact career knowledge by hosting a “career day” with representation of diverse occupations or undertaking field trips to work sites, training, and/or career centres. Teacher engagement in the career planning and decision process is crucial, and is complementary to the services provided by formal career education and guidance.

Guidance Counsellors

Guidance counsellors are the focal point for career guidance within Ontario’s education system. Although they have multiple responsibilities, we focus on their provision of career guidance, especially components of career-related information and counselling (see below). They are a potentially crucial aid for a young person making a career choice. Guidance counsellors may provide career guidance for students (i) directly by providing information and advice individually such as through one-on-one meetings and/or (ii) indirectly for students, such as by arranging school-wide or grade-wide career events.

Collectively, career guidance is defined as several connected activities to help students make informed career and post-secondary education choices. These activities include the following:

i. **Career education**, where students learn about the world of work and develop skills to manage a career;

ii. **Career information**, where students learn about courses, occupations, opportunities, routes to careers, and how to find help;

iii. **Individual career counselling**, where students get one-to-one advice and education; and

iv. **Direct contact** with employers and employees, where students can gain experience and insight into the working world.

Career guidance delivered by qualified career guidance counsellors is considered critical to empower young people to make appropriate and informed career decisions. We return to this subject in Section 3 below where we examine whether guidance counsellors have adequate training, time, and resources to provide effective career guidance.

Family

Family, and parents in particular, have a strong influence on children’s development of career-related mental models and on the decision-making process of adolescents and young adults as they make career-
related choices during and after secondary school. Many young people report the influence from their parents is highly important, with parents acting as a major source of information and as role models.\textsuperscript{122}

Research examining parents’ influence\textsuperscript{123} suggests parents can pass messages about career and educational choices in at least three ways. First, it occurs directly when parents provide advice, and perhaps pressure, through explicit discussion of career and education options. Second, parental influence occurs indirectly when they communicate their ideas about work and careers in general, but without explicitly relating these views to their own children’s career or education. Third, influence occurs through parents’ ambient or environmental effects. Children, adolescents, and young adults extract meaning from the context of their parents’ working lives, behaviours, and patterns, or from what is not said (e.g., when parents omit a particular career, education, or training option from conversations generally).

The direct, indirect, and ambient messages from parents can have positive effects if they encourage wide-ranging career exploration, including consideration of multiple pathways, and self-awareness. However, parental messages and signals may have negative effects if they view university or college academic paths as the only options, are biased against particular pathways or occupations such as skilled trades, and/or do not ensure that their children are aware of and understand the full range of career opportunities, including skilled construction work.

**Peers and Social Networks**

Other sources of influence – potentially major ones – along the career decision pathway arise from peers and social networks.\textsuperscript{124} For instance, there is some evidence that girls and young women are more likely to enroll in career and technical education courses if their peers enroll.\textsuperscript{125} Young people’s social background, sense of identity, and even ethnicity can impact their mental models about career options.\textsuperscript{126} Their social networks also have effects upon their awareness of career options and opportunities to pursue particular occupations.\textsuperscript{127}

**Employers, Governments, Labour, and Non-Profit Associations**

The impact of organizations, including firms, governments, and labour unions, varies across the career decision pathway but also by young people’s fields of interest, their family and social networks, and their initial post-secondary destination. The people involved in these areas may provide in-person and/or online sources of information and interaction.

These organizations’ in-person interactions with students can occur in multiple forms. These touchpoints may be one-off opportunities like field trips involving worksite, training centre and/or college facility tours, or career days, career panels, and career fairs. These activities help expand and enhance students’ information and choice architecture. They can occur at different stages of education – for example, while some career fairs occur in high school, most are offered in post-secondary years. Touchpoints may also include medium or longer-term sustained opportunities like job shadowing or co-operative education placements that boost young people’s career decision-making capabilities and knowledge of the world of work.
A large number of employer organizations and certain other non-profit associations, government entities, and labour unions offer in-depth websites with an array of information available. Given the pace of digital advances and young people’s reliance on their mobile phones and tablets, this online interaction is becoming increasingly important in students’ search for career information and job opportunities as we explore below.

**Figure 8: Summary of Key Influencers and their Impact in the Career Decision Pathway**

<table>
<thead>
<tr>
<th>Influencer</th>
<th>Primary and Middle School Years</th>
<th>Secondary School Years</th>
<th>Post-Secondary Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educators</td>
<td>Extensive influence</td>
<td>Extensive influence</td>
<td>Extensive influence for university/college students</td>
</tr>
<tr>
<td>Family</td>
<td>Extensive influence</td>
<td>Extensive influence</td>
<td>Varied levels of influence</td>
</tr>
<tr>
<td>Peers</td>
<td>Potential extensive influence</td>
<td>Potential extensive influence</td>
<td>Extensive influence</td>
</tr>
<tr>
<td>Industry, Labour, Government</td>
<td>Occasional and/or indirect influence</td>
<td>Potential influence</td>
<td>Modest to extensive influence</td>
</tr>
</tbody>
</table>

**BE Issues in Young People’s Recruitment Journeys**

Young people face multiple barriers in both considering and choosing a career in the trades and related occupations. We focus in this section on the cognitive, emotional, social, time dimension, and motivational barriers highlighted in Chapter 2’s literature review and in our interviews. These are barriers to garnering young people’s attention, promoting positive interpretations, and in motivating actions as they consider and choose a career, particularly in skilled construction work.
BE Barriers to Young People’s Career Choices in General

Learning about and researching career paths requires active effort.

Though young people have many opportunities to learn about career paths, these often require active effort on their part. In the absence of such effort, career guidance offered directly and indirectly by the education system is frequently insufficient. Guidance counsellors have stressed the need for students to be proactive both to do career research and to make their career decisions. Other research underscores that students need to actively search for relevant information, explore career options, and seek out guidance counsellors to answer questions, making motivation key. The importance of students being proactive and motivated was also evident in our interviews of educators and parents.

Of additional concern is that students who need the most guidance may not be the ones who pursue these opportunities. Students headed into the workforce right out of high school and those from disadvantaged socio-economic backgrounds have the most difficulty in finding information and making career choices. Interviewees working with mature students highlighted the critical importance of boosting the awareness, understanding, and decision-making capabilities of young people who are not employed, in education, or in training for work (NEET).

As set out in Chapter 2, students, like all of us, are more likely to choose the default option (the pre-set course of action) or stick with the status quo when facing choices with hassle costs, complexity, and long-term consequences (time-distance gap). Students like the rest of us need to be motivated to expend the effort to diverge from the default option. In terms of career information, the status quo is the amount of information a young person currently understands and receives. Searching for other relevant and reliable information presents a large hassle cost. It requires motivation to begin and sustain this effort beyond the easiest paths of university and college options given that most middle and high school grades focus on these pathways.

The wide range of potential careers and young people’s lack of clarity about their current and future needs, wants, and interest introduce a level of uncertainty around career planning. This uncertainty increases the hassle costs of searching for career-related information, reinforcing the inertia and procrastination biases. Further, given a career decision can seem far off in the future, many young people suffer from the time-distance gap. They prioritize immediate wants and needs over difficult actions whose benefits for career development do not occur right away, and which are much tougher to assess as they are less tangible and immediate.

International research, including an examination of Canada’s approach to and resources for career guidance, suggests students need more direct contact with people who are working. However, attending and engaging in such activities again requires motivation and effort to overcome the hassle costs associated with diverging from one’s daily routine (the status quo). As well, the time-distance gap is a factor, with young people hesitant to invest time now to learn about something that does not have clear immediate benefits and whose long-term advantages are quite intangible. On the positive side, young people are more likely to make the effort, deviate from their routines, and consider their long-term options if their friends are also doing so. As a result, the likelihood that young people will attend
and engage in these types of activities is subject to social influences.

International research, including an examination of Canada’s approach to and resources for career guidance, suggests students need more direct contact with people who are working.

The mandatory Grade 10 Career Studies course also faces BE challenges. Importantly, numerous interviewees suggested the level of engagement of Grade 10 students in this course may be much less than what is required to create ideal awareness, interest, and understanding. Related to this engagement issue, research with guidance counsellors and various interviewees suggest that many young people may not be ready in Grade 10 for the Career Studies courses.

Career exploration based upon educators’ classroom teaching in Grade 10 may be difficult given the lack of tangibility and salience of career options for most students. Without firsthand experience of the working world, career options and decisions can seem vague, irrelevant, and abstract to them. The time-distance gap can mean young people are more focused on completing a course now with the minimum effort and time required rather than completing the groundwork for a deliberative career decision-making process. However, given that early awareness of the world of work and career options is critical, the timeliness and salience of career education in high school are challenges that clearly need addressing.

Amounts of career information and choices available are simultaneously overwhelming for university and college, and underwhelming about other paths such as the skilled trades.

Even when young people can find relevant and reliable career information, they may face significant information and choice overload. Parents and educators we interviewed noted the very large number of occupational options available with varied requirements for preparatory education and/or training. Most students, given their young age and lack of experience with full-time work, have an inadequate knowledge of what most occupations are and the behaviour required at work. As a result, the range of options and entry path requirements can be truly overwhelming with respect to university and, more recently, colleges, and can lead to the avoidance of making a decision, even if that decision is simply to seek more information.

At the same time, students are facing information and choice overload about their university and various college options, the educators, parents and industry members that we interviewed emphasized that most young people lack information about and ongoing exposure to the skilled trades and to vocational education and training (VET). International and Canadian research shows Ontario is not alone in this problem. Most OECD countries and Canadian provinces provide much less exposure, focus, and information than what is needed for young people to understand about their options in the skilled trades and the need for VET.
Multiple interviewees suggested most young people lacked exposure to and knowledge about skilled construction trades and the variety of opportunities available. They stressed that most resources available in the middle grades and high school focus on university and college paths while the information available on skilled trades is too often inadequate and underwhelming.

In sum, there is a huge emphasis on university education in Ontario, less (but significant and more than before) on college, and too little focus upon and resources for skilled trades. This inadequate focus is especially the case for the skilled construction trades as well as related occupations that require in-depth post-secondary education such as construction management.

Young people rely heavily upon digital resources, adding and reinforcing cognitive barriers.

Teenagers in America report nearly universal access to a smartphone and 45% report being online “almost constantly”\textsuperscript{136}. Various research, including our interviews with parents, educators, and organizations, suggests young Canadians are accessing career resources primarily online through searching the Internet generally and by more structured exploration through online career portals, such as Xello (formerly Career Cruising) and myblueprint.ca\textsuperscript{137}. For example, one 2018 report found that 51% of youth aged 15-17 looked online for work while 76% of those aged 18-24 did so\textsuperscript{138}.

Online resources certainly have the appeal of being almost universally accessible from any location, but there are multiple drawbacks. Decision-making can occur much more rapidly online, often heightening our cognitive biases\textsuperscript{139}. Evidence suggests we often offload our thinking to our smartphones and avoid effortful engagement, which is particularly true for those most likely to rely on their automatic thinking (system 1)\textsuperscript{140} explored in Chapter 2.
The time-distance gap makes it less likely that young people will be focused on career information and options. Even when career considerations have their limited attention, young people (and all of us) are drawn to what is easy, salient, and attractive. First impressions matter more and are made more quickly onscreen. Regardless of the quality of the information, people often make fast judgments about the salience, especially the relevance, and even trustworthiness of digital resources based on visual attractiveness.\(^\text{141}\)

International research has shown young people have (i) clear gaps in their career aspirations versus the actual market demand for those occupations, and (ii) a very narrow range of job interests.\(^\text{142}\) This occupational mismatch and limited breadth of career interests in their mental models includes VET being poorly understood by young people. In underscoring these gaps and narrow range of young people’s job interests, it merits reiteration that students’ mental models influence what they look for and how they process information about career options. Their online searches can be affected by the affect, availability, and confirmation biases.\(^\text{143}\)

**Specific BE Barriers to Young People’s Career Choices in Construction Skilled Trades**

A variety of specific behavioural barriers cause challenges for young people’s awareness and understanding of careers in the construction skilled trades, and their actions regarding these career opportunities.

**Children and young people may have limited opportunities to learn about skilled trades.**

The OECD’s research on career guidance highlights skilled trades as a group of occupations likely to be misunderstood by young people.\(^\text{144}\) Students often lack early and repeated exposure to skilled trades and related career possibilities when, for instance, trades are not represented in primary school career days. With limited technical offerings in a number of Ontario high schools, there are also fewer opportunities for older students to explore learning in trades-related fields whether in construction or in other sectors.

Several interviewees noted the tendency for young people to have some awareness of a few well-known construction trades (e.g., plumber, electrician) but to lack knowledge of the many other trades/occupations (e.g., pipefitter, concrete finisher). The OECD noted similarly narrow framing in terms of awareness and understanding of most skilled trades.\(^\text{145}\) In contrast, when students had opportunities to visit worksites or training centres, interviewees said young people’s reactions were overwhelmingly positive and their awareness much improved.

The opportunities to learn about skilled trades careers are also shaped by young people’s social context; only those who have someone in their social network who works in trades will have exposure to and knowledge of these career possibilities. For instance, young people from higher socio-economic status backgrounds whose parents are professionals are more likely to aspire to professional occupations.\(^\text{146}\) When children and young people consider their career options, these are impacted by the availability bias. If young people do not have any tradespeople in their social network, this career option does not easily come to mind, and they may not consider it at all.\(^\text{147}\)
Current recruitment processes for many careers in the skilled trades are often through personal and other informal connections. A young person interested in the trades who lacks such social connections would need to be significantly motivated to overcome hassle factors as well as the inertia and status quo biases. This limits the reach of who might consider and take first steps towards such opportunities. Most young people need to have family and other social networks to hear, learn, and see about career opportunities in the trades. Social networks shape the attention to and interpretation of skilled trades careers, and can significantly influence young people to take action towards or away from skilled construction work.

Mental models are important to address.

Given that we develop career mental models based on our experiences, social networks, and the occupation(s) of our parents, mental models influence the information we search for and attend to. As set out in Chapter 2, confirmation bias refers to the idea that we tend to search for and attend to information and options that align with what we already believe. If students believe skilled construction trades and related jobs are not paths to success, they are less likely to search for trades-related information. Research and our interviews suggest that skilled construction work is viewed negatively in many young people’s mental models. For instance, OYAP participants reported feeling that unless you achieved a university degree, you were considered at best an underachiever, and at worst as one participant put it, “a washout”. Even when young people pay attention to career options in skilled construction work, they may interpret these paths negatively if they have mental models biased against these occupations.
Various studies and surveys as well as our interviews revealed two critical aspects to young people’s mental models regarding post-secondary options.

First, many young people have the mental model that university (and sometimes college) is the heavily favoured path to success. In one survey of Grade 12 students, 92% reported their parents/guardians encouraged university. Interviewees consistently suggested parents, teachers, school administrators, and society in general emphasized university first and then college. Even parents who work in the skilled trades may encourage university as the dominant path to success. For instance, OYAP participants interviewed in one study reported their parents – even those with trades or manual labour jobs – were disappointed with their choice to pursue OYAP. When these messages are being shared, directly or indirectly, with children and adolescents, they develop the mental model that any post-secondary path outside of university or college is less than desired.

Some young people may interpret taking the path into skilled trades as less desirable or worse, with some feeling that they are “less smart”.

Second, many young people have the mental model that skilled trades are for students who are less academically inclined and/or have low status. There is a distinction between theoretical and practical knowledge in high school academic and applied courses, respectively. Some young people may interpret taking the path into skilled trades as less desirable or worse, with some feeling that they are “less smart”. As a result, despite the reality that many students show advanced skills and capabilities as well as potential interest in applied areas, they may not pursue a career in skilled trades in these areas. Supporting this contention are observations such as one educator interviewee who highlighted the slippage in the number of high students applying to OYAP. Also indicative are the low rates of apprenticeship enrolment (less than 10% of Canadian youth pursue apprenticeships), and the high average age of apprentices. (Interviewees also highlighted the challenges for a number of young people in finding an employer or labour union to sign them on for an apprenticeship can also be a factor – this is a demand side question meriting further BE research that is beyond the scope of this report.) These telling indicators suggest trades are not the first or even second choice for too many young people after high school. Notably, several of our interviewees estimated roughly half of students enrolled in construction-related programs are mature students.

While mental models may be inaccurate or unrealistic, they do shape young people’s attention, interpretation, and motivation to act. When university is seen as the default option and college as the alternative, veering from that path into the skilled construction trades requires effort by young people and significant motivation to overcome the inertia, procrastination, and status quo biases.

Other BE Barriers to Young People’s Career Choices in the Skilled Trades

Separate from the BE barriers noted above, the potential for skilled trades careers to be very well suited and attractive for some students is unfortunately hindered by a set of systemic issues in schools.
Many interviewees suggested that school systems focus too heavily on academic skills and abstract topics. These topics are poorly suited for students whose cognitive capacities are more practical and applied in nature. Though this academic/practical distinction has long been used in Canada\textsuperscript{156} and is specifically employed to stream students in Grade 9 in Ontario, there is increasing research and pilot projects showing Ontario’s early streaming leads to lower performance on standardized tests and too often worse outcomes for low-income youth.\textsuperscript{157}

It is essential to address deficiencies in this formal streaming that begins in Grade 9 given the growing need for numeracy and literacy skills in many trades, especially in skilled construction work. With mathematics and communication knowledge being recognized as increasingly critical for success in the digital economy generally, there are notable calls\textsuperscript{158} for Ontario to revisit its existing approach to academic and applied paths in high school. Changes in this regard could help benefit skilled construction trade options directly and indirectly from the better vocational and educational preparation that would result.

Educators, employers, labour unions, and non-profit entities that we interviewed consistently said Ontario’s current system is also poorly suited for identifying, supporting, and preparing young people to successfully pursue skilled trades such as those in construction. Young people who are more practically motivated and applied in their cognition may struggle to succeed in an academically-focused school environment. A number of interviewees, especially those in construction and other skilled trades education courses, stated strongly that, when given the right opportunities, many of these young people flourished in skilled construction work.

**Key Influencers: Educators**

Research on career guidance suggests that it is clearly linked to better economic, educational, psychological, and social outcomes.\textsuperscript{159} Yet there are a host of factors limiting the time, resources, and career training for guidance counsellors in Ontario.

Various factors seriously constrain guidance counsellors’ ability to help students in the primary and, especially, middle and high school grades. These factors make it difficult to deliver more effective nudges and boosts to achieve better career guidance results. Indeed, as we explore below, too often career guidance is marginalized within Ontario’s education system for multiple reasons. In this regard, we focus on BE barriers experienced by educators, particularly those for guidance counsellors and teachers.

**Educators may be limited by the amount of time they can commit to career guidance.**

School-based guidance counsellors have multiple roles and major demands upon their time, including aiding students with personal, interpersonal, and career development. While the role of guidance counsellors varies by school,\textsuperscript{160} the bulk of their time is spent on personal and interpersonal guidance, and may also include extensive administrative tasks to help with students’ course selection. Educators and parents we interviewed also suggested much of guidance counsellors’ focus and time is, understandably, upon children with special needs and those experiencing crisis situations.
Not surprisingly, too often there is far too little time remaining to focus on career guidance for the average student, especially on an individual basis. Guidance counsellor-to-student ratios reported in our interviews ranged anywhere from 1:200 to 1:750. The Ontario average in 2018 is 396 students per guidance counsellor in high schools, with 826 students per guidance counsellor in 10% of secondary schools. Only 31% of elementary schools had guidance counsellors in the GTA, and this was more than three times as many as any other region. In 2014, for schools combining primary and middle grades (kindergarten to Grade 8), only 29% had guidance counsellors despite the reality that Grade 7 and 8 students will be making decisions about whether to take academic or applied courses in Grade 9. This situation is potentially very problematic – the choice of academic versus applied paths will be decisive for these students’ options in high school and their career opportunities afterward.

Accordingly, guidance counsellors have very little one-on-one time to inform students about the breadth of post-secondary paths and career options they have or to support them in making career decisions.

One interviewee estimated the average amount of time each student gets to spend individually with a guidance counsellor is around 30 minutes each year. Accordingly, guidance counsellors have very little one-on-one time to inform students about the breadth of post-secondary paths and career options they have or to support them in making career decisions. This seriously limits the benefits of individual career counselling that leading research shows is essential.

Limited guidance counsellor time also precludes applying two key BE insights to increase young people's attention, improve their interpretation, and enhance their actions to better meet their individual needs and goals, and reflect their abilities. The first is personalization. Currently, the serious time constraints mean that it is simply not feasible to fully tailor and incorporate individual circumstances and unique requirements for each student. Using the second insight of reinforcement is also precluded. The lack of guidance counsellor time means that it not feasible to have the follow-up contacts and meetings to ensure that young people are aware, and consider the full range, of career options. A single meeting with a student simply does not achieve the necessary attention, engagement, and interpretation to improve career choices.

The greatest potential advantages of career guidance occur with students (i) with lower socio-economic status, (ii) who are female, and/or (iii) whose first language is neither English nor French.

Also important, the OECD’s Programme for International Student Assessment (PISA) data for many countries, including Canada, suggest students with the greatest need for assistance in career choice have
the least access to such help.\textsuperscript{166} The greatest potential advantages of career guidance occur with students (i) with lower socio-economic status, (ii) who are female, and/or (iii) whose first language is neither English nor French.\textsuperscript{167} Better access to career guidance helps each of these important student segments by countering the BE obstacles from their narrower social networks, exposure to job stereotyping, and language situations respectively.

For their part, teachers are tasked with finding time in the classroom to integrate career development portfolios on top of teaching their curriculum, managing their classes, creating and marking assessments, and working with students with either special needs or facing crisis situations. Ontario’s approach to career guidance expects teachers to incorporate All About Me portfolios in primary school, focusing on self-awareness, and IPPs in the middle and secondary grades, including exploring and planning for career options. They are expected to undertake this portfolio development on top of all the extensive time to meet their other responsibilities.

It should be noted that Ontario’s goals with the All About Me portfolios and IPP portfolios to career development acknowledge multiple, dynamic, and individual pathways to career success. The goals include having these portfolios be reviewed at least annually. However, despite these good intentions and goals, our interviews and various other sources suggest that in practice, their application is highly uneven and too often inadequate. Frequently, there is too little interaction with students and parents.\textsuperscript{168} This intention-action gap likely reflects teachers’ time constraints, multiple responsibilities, and various other causes identified by interviewees.

**Educators may be ill prepared to provide effective career counselling.**

Other major challenges include the different skills sets required for career counselling relative to guidance counselling or teaching. In Ontario, the requirements to become a guidance counsellor are a teacher’s diploma with at least the first of three qualification courses.\textsuperscript{169} Similar to various other OECD countries, the training received by guidance counsellors in Ontario is considered insufficient.\textsuperscript{170} School counsellors need to be well trained in labour market and career issues, and well resourced in terms of time to provide effective, individualized career counselling and offer objective, personalized advice.\textsuperscript{171} These deficiencies in middle and, especially, high school grades for career guidance training need to be addressed.

**Educators’ mental models help shape the messages they share with young people.**

Most educational Influencers have and share the mental model that university or college is the best path to success. Educators’ mental models are based in their own experiences and exposure to career options within their social circles. The vast majority of teachers, guidance counsellors, vice-principals, and principals have all attended university as required paths to teaching and, as such, this dominates their experience. Accordingly, most educators have minimal to no experience in other industries. Like the rest of us, they are also subject to the affect and availability biases, and their mental models can shape the options that they promote, directly or indirectly.
Guidance counsellors described schools as being heavily focused on university admissions or with a narrow focus on university as “the preferred post-secondary option”. Guidance counsellors report drawing on their own experiences, or experiences of people they know when in advising situations. For most educators, university is much more salient and tangible, and so easier to recommend and advise on. Given most educators’ background and training, several interviewees suggested these Influencers were unlikely to recommend skilled trades. This has consequent effects on students’ attention, interpretation, and actions in choosing a career. Unintentionally or otherwise, too often this leads to skilled construction trades rarely being considered or thought of only as an option for young people who are less academically inclined.

**Educators too often lack adequate information and resources.**

Although guidance counsellors are considered students’ go-to source for career education, they may lack in-depth information as well as the resources to keep their knowledge current. They can struggle to keep up to date on labour market information due to their insufficient time from other extensive work requirements set out above, and the limits on the resources available and funding provided. Guidance counsellors themselves reported wanting more information about different types of career options (e.g., what does it mean to be an engineer) while others have observed serious gaps in their information and resources.

Other interviewees stressed that too often skilled construction and other trades were not highlighted as available and good options along with college and university.

Various interviewees reported guidance counsellors have, unfortunately, too little awareness and knowledge of the full range of careers available in construction-related jobs (e.g., guidance counsellors seem to be aware typically about only a few well-known trades such as plumbing, electrical, or carpentry-related occupations). Other interviewees stressed that too often skilled construction and other trades were not highlighted as available and good options along with college and university. Frequently, guidance counsellors considered the skilled trades to be fallback options, and not to be recommended as attractive initial options.

It is clear guidance counsellors require time and resources to have access to current information and do research about labour market conditions. However, several BE biases and constraints might influence the extent to which guidance counsellors and teachers seek out and process career information. Like all of us, guidance counsellors suffer from status quo bias and inertia, requiring motivation to overcome the hassle costs of searching for, sorting, and applying current information. Even when guidance counsellors intend to stay informed, they may struggle to follow through (intention-action gap). Given the changing nature of careers and occupations, guidance counsellors may experience information overload and procrastinate due to the effort required to overcome the complexity and volume of the information available.

It is unfortunate but accurate to highlight that the current educational approach, focus, resources and
training for career guidance are not meeting students’ career information and understanding of work needs. As noted at the beginning of this chapter, career counsellors themselves rated the current system’s effectiveness in preparing students for the world of work at just “2.5 out of 5. Barely a pass”. Regrettably, it is another indicator of the marginalization of career guidance within most of the current school system.

**Career options may be unduly limited by course choices and the way Career Studies is taught.**

Early understanding of all career possibilities is critical to ensure students take the appropriate courses through their high school years. Students must have effective exposure to various career opportunities, particularly careers in the skilled trades throughout their education to make the course choices best suited to each student and their early career goals.

*If students struggling with math and English are able to see its relevance to a future career, it may help to motivate and engage them in these courses.*

Math course decisions are a frequent example of students’ inadequate consideration and unintentionally adverse course decisions. For example, math is an underappreciated, yet critical skill in many trades. Even less academically inclined students will need to continue to develop math and literacy skills to succeed in an increasing number of trades. If students struggling with math and English are able to see its relevance to a future career, it may help to motivate and engage them in these courses. More generally, if educators create a clear link for students to career opportunities and their schoolwork, the linkage helps make career information and awareness more salient and effective. It leads to increased academic achievement and recognition of the courses and/or academic programs needed to pursue desired career paths.

The way Career Studies is taught and other career information provided to students in the current curriculum raises concerns. Research shows career planning has often been delivered as an “information dump” on students. Even with notable changes in recent approaches to focus on active engagement of students, these newer approaches require students to overcome the inertia and status quo biases of not seeking exposure to the world of work or information on potentially attractive career options. Cognitive issues such as salience, adjusting content and formats for the method of engagement (in person versus online), and the lack of feedback mechanisms are also barriers to students’ engagement that need to be addressed.

It is worth stressing the opportunity here for better **audio-visual messaging** in Career Studies courses as well as for other in-class and school-wide events. These courses and events provide excellent platforms to highlight young workers in the skilled construction trades who are representative of men and women as well as different socio-economic status and cultural backgrounds. As Chapter 2 has emphasized, the attention and engagement benefits of effective audio-visuels has solid BE merits. The **messenger effects** of young workers talking about their decision-making process, education, and training to enter these skilled trades, and their experience working are also significant (see below).
Other Key Influencers: Family and Peers

Mental models of family and peers shape the messages received by young people.

Negative mental models held by family and peers can discourage young people from exploring and pursuing skilled trades. Family and peers often hold the mental model that trades and vocational programs are of lower status and suited for those less ambitious or academically talented.181 Despite an increase in digitization and other expertise demanded by skilled trades, many parents and communities too often view these trades “as an inferior option for post-secondary training”.182 Even the mental models of parents in families with at least one parent who worked in the trades have impacts. They often gave conflicting messages by encouraging their children to both follow in their parents’ footsteps, and to get a university education to get a better job.183

Our interviews and various academic research also revealed key Influencers, such as parents, often have and share the mental model that skilled trades are “dirty and unsafe”, and that trades are too often seen as a last choice as a career option rather than a first or second choice. Numerous interviewees highlighted many parents’ adverse images and misperceptions of the skilled construction trades’ health and safety.

Parents are also often unaware of the full variety of career options and the education and training paths to reach these skilled construction occupations.184 Like others, parents and peers often have narrow framing. They are subject to availability and confirmation biases, which in turn impact young people’s career mental models and their career decision making.

Family and peers’ views of career options may be hindered by other BE barriers.

Parents, other family members and peers face significant BE challenges currently in finding the necessary information to broaden their exposure to, and to increase their understanding of, career options. Like students, there is a clear need to be proactive and motivated to find this information from school and school board websites, and from non-educational sources. It also means that reducing hassle costs as well as the need to increase these sources’ attractiveness, chunking, salience, simplicity, and tangibility, and address other BE considerations is important.

Other Key Influencers: Employers, Governments, Labour Unions and Associations

As described above, multiple employer, government, and labour organizations as well as non-profit associations engage with students and parents in person through various activities. Their online efforts are also significant as there is a broad array of their online platforms providing information about skilled trades and paths to pursue a career. Yet, as BE’s foundations and insights show, the provision of information whether in person or online does not necessarily mean that this information is effective with, or for, its recipients. How career information and options are attended to, interpreted, or acted upon is crucial whether by parents, peers, students, and educators. It is to this area of these organizations’ activity that we now turn.

The involvement of firms, governments, and labour unions in career guidance is essential to provide two
of the four components of career guidance, namely career information and direct contact with the world of work. Yet these organizations’ activities too often are insufficiently recognized in their importance by educators and even by some construction industry participants. Unfortunately, the activities of these entities and their potential benefits can be hindered by under-resourcing, or underutilization, in career education.185

**Skilled construction workers, employers, and labour unions offer authenticity with their first-hand exposure for children, adolescents, and young adults in the classroom, at career events, and especially at worksites and training centres.**

Numerous benefits occur when employers and workers participate directly in activities with young people.186 They begin with the credibility advantage (messenger effect) of tradespeople and other skilled construction personnel in the provision of information about the world of work and in their interactions with young people. Skilled construction workers, employers, and labour unions offer authenticity with their first-hand exposure for children, adolescents, and young adults in the classroom, at career events, and especially at worksites and training centres. This benefit is over and above the interactions with and information supplied by educators and parents.

Involvement of employers, labour unions and workers also provides a level of tangibility that young people would not otherwise experience. Employers and workers help expand the mental models of young people, parents, and educators about career options, particularly those related to the skilled construction trades, helping to mitigate the biases identified above.

**Employer, labour, and association engagement with primary schools is too little or absent.**

Numerous research studies, OECD reports and our interviews underscored the merits of beginning career-oriented experiences in primary school.187 The expansion of children’s mental models is integral to avoiding stereotypes and other misleading perceptions of educational and career paths from childhood through adolescence and young adulthood. Research shows that exposure to workers speaking about their jobs and careers in primary school (and middle grades) from the skilled trades and other less-frequently considered occupations has lasting benefits.188 These include enhanced child development, better perceptions of career options, and improved course selection.

Unfortunately, the literature available regarding Ontario’s approach and our interviewees reported very modest or no industry engagement in primary schools. Increased employer, labour union, and worker involvement in person at primary school career events is both overdue and important. There is also major scope for online interaction through apps and other digital approaches to help frame broader exposure to skilled construction careers and help change kids’ mental models.189
Building on successful collaboration and addressing overall middle and high school needs.

Unlike primary school, there is clear evidence of non-profit organizations, labour unions, and employers’ interaction with students in the middle grades, although it varies significantly by school board and region. These organizations also engage much more with high school students by undertaking multiple career information activities. Their initiatives range from career days, classroom presentations, job shadowing, and site visits to specific courses with extensive experience in construction.

While Chapter 4 will explore successful collaborations among employer, government, labour union, and non-profit association with educators in detail, this chapter’s concluding section identifies criteria to better assess these Influencers’ activities. The goal of these criteria is to help identify effective career information and work interaction activities that warrant more resources and broader application, and those that can be improved.

Effective engagement in and support of career guidance by these organizations needs to complement and enhance educators’ and parental efforts. They should provide students with the essential career and job market information in an effective manner that accounts for people’s cognitive and other biases. Such information should include:

- “All available options and pathways specific to each individual’s needs, including VET ones.
- The qualifications to which they lead, and the further qualifications to which they give access.
- The occupations to which these qualifications provide access, and the extent to which the qualifications are sufficient for entry.
- The salary/wage levels offered by these occupations.
- The projected demand for these occupations.
- The labour market outcomes achieved by those successfully completing the programmes including the nature of their jobs, [and] their salary/wage levels …”

A welcome increase in digital career information, but various BE issues need to be addressed.

There are clear benefits to increasing the quantity and quality of information online from employer, labour union, non-profit association, and public sector sources. There is also a compelling need for a range of BE-informed improvements given their array of onscreen challenges.

General challenges with these organizations’ digital approaches start with the critical initial online problem facing parents, students, and educators alike – there is no single website that provides a comprehensive guide to the skilled construction trades and VET required.

For example, a Google search revealed numerous websites with substantial hassle costs in terms of time and effort to sort through them. The consequent information and choice overload needs to be addressed. As significant, websites featured far too few links to and scant information about other relevant websites, especially to bridge to unique information features found elsewhere that would significantly benefit young people, parents, guidance counsellors, or teachers. There are also clear opportunities for app development focused on the different requirements of student population segments (primary, middle, and high school grades).
Summary

This chapter has explored the career decision journey of young people, the BE barriers they face, and the BE insights and other factors shaping the impacts of educators in career guidance and of other Influencers. The next chapter will focus upon collaboration success stories, the challenges in Influencers’ online information, and helping guidance counsellors. Chapter 4 applies BE insights including the EAST framework as it focuses upon nudges and boosts to examine specific BE aspects of these successes and their challenges.
Educational institutions and the private sector should work more closely together to update and create programs with the skills demanded, and expand work-integrated learning opportunities so that students learn job skills and gain work experience before graduation.

– Tiff Macklem, *Teaching for Tomorrow*[^1]

[^1]: Teaching for Tomorrow
Building upon Chapter 3’s BE approach to young people’s career decision journey, this chapter uses a BE lens to identify successes, challenges and opportunities in Influencers’ impacts on young people’s career journeys and career choices. It looks at (i) notable examples of effective collaborative efforts among Influencers, (ii) strengths and weaknesses in their online approaches, and (iii) ways that Influencers can nudge and boost the behaviour of guidance counsellors to improve their provision of career guidance.

Successful collaboration of various employers, labour unions, and various non-profit organizations’ career guidance activities with the education system has had significant benefits for young people making career choices about the skilled construction trades. They are important BE success stories as these entities use a series of nudges and boosts even though their design and implementation were not explicitly determined by behavioural insights.

In too many other cases, however, there needs to be significant improvement. While there are notable examples of successful efforts by Influencers in career guidance, there are numerous cases of inadequate or ineffective efforts. These weaknesses are found in two vital aspects of young people’s career decision journey.

The first weakness is found in Influencers’ online presentation of information about the demand for skilled construction trade jobs, education and skills requirements, and other important aspects. Looking at online offerings, a BE lens reveals some notable online successes, but also highlights strongly recommended changes to make websites and other digital platforms of educators, employers, governments, and labour unions more effective. We propose various nudges to improve these websites’ information and choice architecture – including making them simpler, more salient, and more appealing – and other aspects of their last mile.

The second weakness is found in these Influencers’ approach to and information for school guidance counsellors. We recommend various BE-informed tactics to improve the capabilities of guidance counsellors to offer better career guidance. These nudges and selected boosts are relatively low cost yet crucial to implement to make these Influencers’ impacts and guidance counsellors’ career guidance more effective.

**Collaboration Success Stories**

Successful albeit implicit use of BE concepts and insights by various educators, firms, unions, and associations in the skilled trades has achieved better results for young people’s preparation for their career decision journeys. (The measurement, monitoring, and analysis of these impacts to determine the extent of their impacts on career choice (i) warrants BE testing and (ii) needs longer-term metrics – see below.) This section looks at how these entities have increased the awareness, interpretation, and actions of young people in understanding the world of work and their career options. The activities of these Influencers can potentially inform best practices for applications elsewhere for working with educators, parents, peers, students and other Influencers (especially once their program impacts are gauged empirically with BE tests or, at minimum, improved by applying BE
insights with solid research and empirical testing).

We explore eight entities and their programs specific to, or with significant components focused upon, skilled construction work. Our list is not exhaustive nor is it all encompassing in scope and depth. There is a broad range of colleges, employers, government, labour unions, and other entities involved in career guidance, education and/or vocational training for the skilled trades. (We briefly outline the potential for collaboration with two of these other entities, Skills/Compétences Canada – Ontario (“Skills Ontario”) and CivicAction in Chapter 5 as indicative of other opportunities for consideration.)

For our purposes, these eight entities’ successes illustrate important BE lessons, collaboration success stories and various potential best practices for improving young people’s awareness and understanding of skilled construction work options for careers, specifically in residential construction. They do so by implicitly:

- Using BE foundations and concepts for career information and interactions generally;
- Addressing the last mile, information and choice architecture with BE insights; and
- Improving young adults’ decision-making through nudges and boosts.

The eight programs, roughly ordered from exposure in earlier school grades to post-secondary activities, are as follows (more information is set out in the Supplemental Appendix 2: Concise Summaries of Eight Collaboration Success Stories):

- Halton Industry Education Council (HIEC);
- Ontario Construction Careers Alliance (OCCA);
- Tridel’s Building Opportunities for Life Today (BOLT) program for under-resourced youth;
- Ontario Youth Apprenticeship Program (OYAP);
- Specialized Trades Exploration Program to Construction (STEP to Construction);
- LiUNA! Local 183 training centres and programs;
- George Brown College construction management and skilled trades programs; and
- Humber College skilled trades programs.

Overview of Leading Initiatives in the Skilled Construction Trades

Each of these eight organizations or programs is specific to, or has significant components assisting with, pathways to the skilled construction trades and related jobs.

Figure 9 below provides a general comparative summary of these eight entities using the criteria of type of organization, mission, key programs and service, priority population segments, partners, and other notable aspects.
### Figure 9: Summary of Selected Leading Collaboration Initiatives*

<table>
<thead>
<tr>
<th>Organization</th>
<th>Type</th>
<th>Goals</th>
<th>Key Programs and Services</th>
<th>Target Audience</th>
<th>Notable Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Halton Industry Education Council (HIEC)</td>
<td>Industry and non-profit association</td>
<td>Educate and engage young people to make informed and better career choices.</td>
<td>Career Development Lab; mentorship events; experiential learning initiatives; skilled trades programs; workforce development initiatives.</td>
<td>Elementary, secondary and post-secondary students; job seekers in the skilled trades; employers and educators.</td>
<td>Delivers Career Awareness Program to 7,000 students each year; supports 12,500 skilled trades job seekers; Assists the nearly 3,500 registered educators in its experiential learning database.</td>
</tr>
<tr>
<td>Ontario Construction Careers Alliance (OCCA)</td>
<td>Industry and labour association</td>
<td>Promote awareness of construction careers across Ontario.</td>
<td>Awareness events at schools; on construction sites; online resources; post-secondary events.</td>
<td>Grades 9-12</td>
<td>Delivered 350 presentations in 2017.</td>
</tr>
<tr>
<td>Building Opportunities for Life Today (BOLT)</td>
<td>Non-profit (charitable foundation)</td>
<td>Create awareness of careers in construction; provide training, educational and employment opportunities in the industry.</td>
<td>Scholarships; awareness events at schools and construction sites; social support, mentoring, job placements and pathway assistance.</td>
<td>Under-resourced youth</td>
<td>Total scholarships since 2010 exceed $900,000.</td>
</tr>
<tr>
<td>Ontario Youth Apprenticeship Program (OYAP)</td>
<td>Education (co-op high school)</td>
<td>Engage students in co-op programs to explore careers in skilled trades; includes focus on women, and support for Indigenous students.</td>
<td>General: introduction to skilled trades in co-op format; Specialized: focuses on one trade with multiple tech and co-op credits; Accelerated: combines Level 1 Apprenticeship curriculum and Registered Training Agreement (RTA) with suitable employer</td>
<td>General (age 16+); Specialized (Grades 11-12); and Accelerated (Grade 12)</td>
<td>Approximately 1,400 OYAP participants annually; 300 with RTAs (includes 130 Accelerated students in 15 different trades).</td>
</tr>
<tr>
<td>Organization</td>
<td>Type</td>
<td>Goals</td>
<td>Key Programs and Services</td>
<td>Target Audience</td>
<td>Notable Impacts</td>
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</tr>
<tr>
<td>STEP to Construction</td>
<td>Education (co-op high school)</td>
<td>Provide a pipeline of the next generation of construction workers through a unique experiential learning program.</td>
<td>Intensive work readiness training in unique co-operative education semester in multiple construction trades; rotational program integrated with multiple Trade Unions.</td>
<td>Grades 11-12</td>
<td>500 alumni since inception in 2004. Doubled in size to 44 students and two teachers per semester in Sept. 2018.</td>
</tr>
<tr>
<td>LiUNA! Local 183 Training Centres and programs</td>
<td>Labour Union, education</td>
<td>Provide safety and skills training in residential and other construction trades. A TDA in Construction Craft Worker, brick and stone, cement finishing.</td>
<td>Training in skills, health and safety, and apprenticeships. Educates stakeholders on construction; offers Training Centre tours to students and guidance counsellors.</td>
<td>Young people and members</td>
<td>Offered classes to over 54,000 members and non-members in 2017.</td>
</tr>
<tr>
<td>George Brown College</td>
<td>Education (post-secondary)</td>
<td>Provide training in trades, apprenticeships, and other construction-related careers.</td>
<td>Certificates, diplomas, advanced diplomas, degrees, apprenticeships, training in construction management, skilled trades, health and safety.</td>
<td>High school graduates and mature students.</td>
<td>Serves approximately 4,600 students at any time. Long waitlist for certain programs.</td>
</tr>
<tr>
<td>Humber College</td>
<td>Education (post-secondary)</td>
<td>Provide training in construction trades and apprenticeships.</td>
<td>Certificates, diplomas, advanced diplomas in construction and/or apprenticeships.</td>
<td>High school graduates and mature students.</td>
<td>Construction and apprenticeship programs train 2,200 full time students and 1,700 apprentices/year. Long waitlist for certain programs.</td>
</tr>
</tbody>
</table>

*All information based on details and statistics provided by each organization.*
Behavioural Lessons from Collaborative Success – Notable Nudges

Changing Mental Models and Improving Choice Architecture In Person with Students

Chapter 3 examined the importance of employers, labour, non-profit associations, and workers in providing (i) career information and (ii) direct interaction with the world of work. The OECD has also highlighted the role of employers, workers, and related organizations. The number and quality of interactions students have with these organizations and people are critical. These interactions can significantly enhance students’ consideration of the breadth of career opportunities, their understanding of the requirements to enter these occupations, and their engagement in the career decision process. In addition, these touchpoints are particularly important for those students who are socially and/or economically disadvantaged, young women, immigrants, and/or Indigenous.

Several of these Influencers provide extensive exposure to careers and the world of construction work and relevant job information as well as in-person outreach on skilled trades in the middle grades and especially during high school. For Grade 7 students in Halton region, HIEC’s services and programs include its innovative career centre. This leading facility provides an attractive physical location and effective focal point for education and employer resources to support youth in career planning. The career centre hosts Grade 7 classes that participate in the “Real Game”, a working life simulation to explore career options and the working world. Students also have the option to return for additional visits for additional exposure and information, and a substantial number do so, including coming to the career centre with their parents during year-end holidays and March break.
Other organizations such as OCCA and LiUNA! Local 183 make school visits to classes in the middle grades and high school. OCCA offers an in-depth, interactive presentation for classes and schools. LiUNA! Local 183, OCCA, and BOLT also participate in career days and other events to provide information regarding skilled construction work and careers therein when they are invited. Colleges such as George Brown and Humber have outreach programs in conjunction with schools and school boards. It is worthwhile highlighting that these benefits are contingent upon teachers, guidance counsellors, and/or schools inviting these entities to present to students, a motivational consideration that we return to below. It is also contingent upon college staff’s availability to carry out these activities given their other responsibilities.

At the high school level, these organizations’ interactions with students are much more frequent and extensive. In addition to classroom presentations, OCCA offers construction days where students visit a worksite and LiUNA! Local 183 hosts campus visits at its training centres. These activities introduce students to a range of careers in construction, offering platforms for them to hear and see directly about workers’ career paths and choices. BOLT undertakes “Speak Outs”, events at schools where industry employees from a range of different occupations participate in a panel explaining what they do and their career paths plus Day of Discovery events where students visit George Brown College’s Centre for Construction and Engineering Technologies and spend most of the day on a construction site. LiUNA! Local 183 also participates in Skills Ontario programs. Humber College and George Brown College also participate in these federal-provincial government programs while HIEC uses instructors from Skills Ontario at its career centre.

Several of these institutions focus upon helping less financially advantaged students, young women students, and Indigenous students.

BOLT works to address the needs of under-resourced students by focusing on educating them about opportunities and financing scholarships to assist their training in construction. BOLT also offers scholarships to under-resourced youth directly through its own funding and indirectly through financing their attendance at post-secondary institutions and programs to support construction-related training. The attractiveness of BOLT’s programs is further enhanced by its work supporting essential skills for these disadvantaged youth, their high rates in placing these young people, and the crucial social support and development mentoring provided as these youth are in the initial phase(s) of their construction jobs.

The Women in Skilled Trades carpentry program through the Centre for Skills Training and Development is one example of initiatives to help young women that HIEC is engaged in. HIEC also offers “Women as Career Coaches” and “Men as Career Coaches” annual events to connect youth with community mentors. LiUNA! Local 183 Training Centre has a strategic partnership with an Indigenous employment and training program to transition First Nations students and other young adults into a career in construction.
The BE merits of these organizational approaches in the middle and secondary years of schooling are numerous and widespread. They begin with the expanded framing for career-related mental models. These Influencers’ programs help to broaden and potentially improve students’ mental models. They help address the availability and affect biases of young people by challenging their existing choice set of university or college. They promote changed perceptions – including countering incorrect or inadequate images portrayed by parents, schools and the media – of the skilled construction trades and related vocations.

Influencer programs in the middle and high school grades attract students’ attention with novel and interesting engagement in classrooms, school-wide events, and offsite venues such as visits to construction sites and training centres. They provide important tangibility with their practical information and credibility with employer, labour union, worker and association experts viewed by most students as “trusted” messengers.

These programs improve young people’s information architecture. They directly deliver career information and options, depicting earnings, job satisfaction, and other benefits of skilled construction trades. This increases the salience and tangibility of career and construction information. The opportunity to explain and underscore the need for sophisticated skills in most trades – including communication, literacy, and math skills – and the importance of further education and training for many construction occupations bears emphasis.

In-person delivery helps to counter students’ misperceptions that the skilled construction trades require only simple skills and training, and their underestimation of the importance of future school and training
courses to enter these trades. The presentations, career events, and other activities of these Influencers also educate and underscore that construction work can also offer a career with progression in terms of compensation, management, and other opportunities. As one interviewee with decades of experience in education and construction stated: “Nothing beats showing what construction looks like to students.” These programs fundamentally challenge students’ narrow framing of potential career paths and their misperceptions, and help to improve young people’s mental models.

It bears reiteration that the benefits of this exposure are in many cases dependent upon proactive efforts by educators inviting these organizations to present in classrooms, and/or students and educators participating in these entities’ career events. Motivation is key. Also, the availability of these programs can vary significantly by region. Schools in the GTA have the most opportunities to have these career presentations and events.

**BE improvements to information and choice architecture** through presentations and visits merit additional emphasis. They implicitly use elements of the EAST (easy, attractive, social and timely) framework to improve young people’s career decision-making.

By offering these presentations in schools or through pre-arranged field trips, these organizations reduce the hassle costs and motivation required to learn about the world of construction work. They make it much easier to receive construction career information at these events as students do not have to search for and/or arrange these activities themselves. They make it attractive, especially with onsite visits as these field trips provide hands-on experience. They assist students in being more aware of and better understanding skilled construction work as a career choice. These activities help offset young people’s inertia and procrastination biases, and potentially reduce students’ impulse to avoid information about construction career options. By making these events social as classrooms and/or whole schools are involved, they help lessen students’ anxiety and other factors that may delay young people’s focus upon their post-secondary path decisions and the information gathering required to make better choices.
Timeliness is another crucial feature of these Influencer programs’ implicit EAST tactics. These programs undertake presentations in Career Studies courses in Grade 10 and during various career events and other programs in Grades 11 and 12. They are timely in coinciding with either (i) the approaching end of the middle grades, and pending entry into high school (HIEC, George Brown and Humber colleges); or (ii) high schools’ focus on approaching initial post-secondary choice of paths (all of BOLT, HIEC, OCCA, OYAP, STEP to Construction, LiUNA! Local 183, George Brown College, and Humber College).

There are also clear benefits from these entities’ activity in helping address students’ time-distance gap in looking for and assessing career options. As Chapters 2 and 3 have explored, too often for young people, career opportunities are not concrete and appear as distant paths. These Influencers’ programs assist in countering this barrier by informing and engaging students to notice and understand that the skilled construction trades are viable career choices. OECD research and empirical evidence supports the merits of these types of programs. Its work shows that effective career information specifically, and career guidance overall, should include multiple elements:194

✔ All career options, including the full range of skilled trades (vocations), that are relevant to an individual’s needs;
✔ The qualifications required to work in these occupations;
✔ The paths to achieve these qualifications;
✔ Current statistics about salary and wage levels offered by occupations; and
✔ Projected demand for these jobs and careers.

In this regard, OCCA’s classroom presentations address skill sets in various occupations, where to get trained, employment opportunities, career options, and compensation. Their information helps make the world of work more concrete and relevant. HIEC’s career centre presentations include this information in meaningful ways as well. Both organizations help change students’ awareness of career choices from seeming distant and remote to being more near term and viable. They make these trades’ requirements for education and training clearer, salient, and more tangible to help address the time-distance gap.

**Boosting Students’ Capability**

Separate and distinct from changing students’ choice architecture through nudging is the material boost in capabilities from several programs, beginning with job shadowing (e.g., BOLT), and technical courses or credits. These activities provide more in-depth exposure and direct experience, offering insights beyond one-off changes in young people’s information and choice architecture. These opportunities to improve decision-making capability beyond choice architecture are beneficial. An important option addressing both choice architecture and boosting is OYAP, which features work-integrated learning. (Other examples include the school-college work initiative195 which helps students earn high school and college credits as well as gain work experience including the skilled trades, and the Specialist High Skills Major196 program where students can receive some industry-specific certifications in dual credit courses.)

The general OYAP program is a good sampler or “taste test” for students seeking exposure to work in a trade that is of interest. It provides a high school co-op credit and expands students’ mental models through their contact with the world of work in a field of their initial choice. There are clear benefits in terms of work’s salience, tangibility, and exposure for participants. While a significant number of students do not
choose the path of their chosen general OYAP area, their experience, perhaps with a trade, will help inform and potentially improve their decision-making for choices and preferences of future pathways.

The Specialized and Accelerated OYAP levels are separate and distinct. They offer substantial boosts in addition to improving participants’ mental models and their information and choice architecture. Both provide accreditation towards an apprenticeship or major experience in those trades not requiring formal certification. They offer technical education courses with in-class training plus significant hours of work with employers. The consequent boost to participants’ decision-making capabilities, expertise, and knowledge in the specialized and accelerated options merit emphasis. In particular, accelerated OYAP provides the opportunity to register for Level 1 Apprenticeship training. Evidence of these two OYAP levels’ benefits include the very high rates of job placements for Accelerated OYAP participants in the electrical and plumbing pathways offered by Central Tech high school in Toronto.

The most extensive program to boost capabilities for career decision-making regarding a broad range of construction trades, and for multiple skills development in high school, is the Specialized Trades Exploration Program to Construction (STEP to Construction; formerly known as Construction Trades Exploration Program [CTEP]). STEP to Construction is a Toronto District School Board program offered through Northview Heights Secondary School that provides unique and in-depth exposure to and experience in multiple trades.

**Figure 10: Overview of STEP to Construction**

In a co-op education semester, STEP to Construction participants rotate through multiple skilled construction trades during one semester, spending approximately two weeks with each trade on a construction site. Students complete a college credit at George Brown College in Health and Safety by taking a weekly class there during this co-operative education semester. They receive additional skill development opportunities through union training centre visits where students participate in workplace simulations. As a result, STEP to Construction allows students to experience multiple trades before potentially choosing and continuing education in one trade.

STEP to Construction’s semester program offers numerous benefits. There is extensive anecdotal evidence of the skills learned and sustained awareness for students through in-depth exposure to and experience in training and trades education. Feedback from student and industry participants underscores that it achieves heightened awareness and thus attention to and perception of opportunities in multiple skilled construction trades.

BE advantages of STEP to Construction include providing more accessible information about skilled construction work, and focusing on tangible career paths. Its extensive introductory experience enhances student participants’ understanding and achieves much-increased marketability of students with industry. It makes construction trades opportunities much more attractive and tangible with the increased recall availability and favourable affect impact for most students in this program. It results in more knowledge of skilled construction work, changes the framing of its participants, and boosts students’ decision-making capacity. It helps to better align these student participants’ interests and goals to their career choice.
Looking at Post-Secondary Paths, Interactions, and Programs

For young people after high school who do not choose to go to university, there are a variety of pathways as outlined in Chapter 3. Our BE examination of post-secondary paths begins with those going into construction programs at college and/or into apprenticeships or voluntary training paths to work in skilled construction trades and related jobs.

In terms of formal vocational and education programs in construction, a wide range of Ontario’s colleges offer certificates, diplomas, advanced diplomas in construction education and skills training. Apprenticeships are also offered by Training Delivery Agents (TDAs) – colleges, authorized labour union training centres and a select group of other TDAs.

For our purposes, this section highlights the leading construction trades and related programs of George Brown College and Humber College. The advantages of their highly regarded apprenticeship and skilled trades and other construction programs begin with their respective leading-edge facilities as summarized in the text box below.
From a BE perspective, while the education and training offered by George Brown College and Humber College go well beyond improved information and choice architecture, their outreach to Grades 7-12 and to mature students involves numerous implicit applications of BE tactics. They include notable messenger effects as both colleges use trades professionals and experienced faculty to make it easy, attractive, social and timely to attend their career and program events. In marketing their respective offerings, both work with school boards and other education entities to present to high schools and middle grades. (Admittedly, the high demand for these interactions exceeds both colleges’ dedicated outreach resources, especially between May and June after the college school year ends.) Both colleges’ campus tour events feature their unique facilities and faculty. Together with their industry liaison and community outreach staff, they help make skilled construction work more engaging, salient, and tangible.

**Figure 11: Overview of George Brown College and Humber College programs**

George Brown’s benefits for students include its downtown Toronto location at the Casa Loma campus, strong linkages to the construction industry, highly experienced faculty, and network of alumni for knowledge of construction developments and trends.

George Brown’s school of construction management is distinguished by its close integration with industry and its integrated approach of computer and online-driven learning on campus with experiential learning from working on various sites. Offering a range of qualifications from certificate, diploma, and advanced diploma programs to undergraduate and post-graduate degrees, this unique program offers numerous advantages from state-of-the-art facilities and experienced instructors to the opportunity to assess and work with leading-edge designs and buildings in the GTA via its relationships with employers.

Humber College has a unique campus and equipment for its programs. Its Centre for Trades and Technology offers a 92,000 square foot facility dedicated to skilled trades and apprenticeship education and training. Its advantages include its state-of-the-art facilities, being able to apply its strengths in manufacturing education to offsite construction, and broad-ranging support to help students’ study, work, and life skills for college and in the workplace.
Separate and distinct from those in construction trades programs in college or apprenticeships are two other important segments for recruitment, and there is substantial scope to use BE tactics to enhance their information and choice architecture for these potential new entrants to skilled construction work. These segments are young people (i) whose university studies or initial college programs do not meet their goals or employment needs; and (ii) others whose work, training or job prospects after high school are either precarious and/or do not meet their desired pay and satisfaction levels.

Both of these segments are significant in size, and have proven to be fertile ground for recruitment using traditional approaches. Our interviews with construction employers, labour unions, and non-profit associations revealed that a substantial number of new entrants are recruited from these two groups. A number of these interviewees emphasized the importance of family and friends in recruiting young people in both of these segments. Their experience and views are similar to the findings of the survey of construction workers in the GTA. Also important are in-person job fairs, open houses, and other career events according to the educators from colleges that we interviewed.

While we examine BE-driven opportunities to improve online engagement later in this chapter, it is worth highlighting that both George Brown’s and Humber’s online platforms employ videos, clear and specific links on their websites to programs and information, and other implicit BE tactics to help make construction career and program opportunities easier, more attractive, social and timely. Their social aspects include effective faculty and student messengers, and their timely merits include their instant access available for online searches.

**Nudging Education Influencers and Parents**

Beyond nudging the information and choice architecture for young people’s career decision journey during kindergarten to Grade 12 and after high school, several of these organizations are also influencing the mental models of guidance counsellors and teachers. Their interactions occur during educators’ visits to career centres (HIEC) and to training centres (LiUNA! Local 183), and classroom presentations and events as teachers are present (OCCA, HIEC, and BOLT).

While much more can be done in this regard for teachers (see below), each of our industry, labour unions, and association interviewees highlighted the benefits for changing the perceptions, and increasing the engagement and interest of guidance counsellors in construction career options from worksite tours and visits to training centres. Using a BE lens, these exposure tours help positively impact the availability and affect biases of educators and their mental models overall. Classroom and in-school events are also easier and more attractive for guidance counsellors and teachers by reducing the hassle costs of finding, attending, and engaging in these programs.
As for parents, all of the people interviewed cited the benefits of career events, fairs, and other presentations where parents were included. Similar to the impacts with teachers and guidance counsellors, these activities help address incorrect mental models and the hassle costs faced by parents currently in their search for information about career options. These activities can be very beneficial in helping address parental misperceptions and narrow images of education requirements, and the nature of jobs today and in future for skilled construction work.

**Challenges and Concerns**

The organizations highlighted and programs explored above offer numerous BE advantages, but they also face major BE challenges despite their extensive and effective programs.

**Motivation remains key.** The BE challenges begin with the need for students to be motivated to participate in events outside of classrooms, whether these are one-off (worksite and training centre visits) or sustained opportunities (job shadowing, mentoring, OYAP, and STEP to Construction). Even with classroom and school-wide events, motivation will affect students’ attention and interpretation during these activities as well as their subsequent actions. The need for motivation also applies to teachers, guidance counsellors, and parents in terms of the quantity and quality of their participation. It makes it even more important to reduce the hassle costs of attending these events, and to make these activities more attractive and social to increase attendance and engagement.

**Absence of BE testing to assess program impacts.** It is essential to have more detailed empirical information
about the extent and duration of the impact of these entities’ nudges and/or boosts. All of the organizations examined above have qualitative anecdotal feedback from young people regarding the beneficial impacts of their programs, as well as some statistics and other information about subsequent post-secondary and/or post-college paths. Unfortunately, while advantageous and useful, much more quantitative evidence of how beneficial these programs are and/or could be for students, parents, and educators is needed.

BE testing is critical in this regard. Otherwise, the encouraging qualitative results reported by attendees and organizations of these initiatives are not quantified on an absolute basis to more accurately assess their standalone merits and costs. BE testing also allows for better understanding of the relative merits of specific information, formats, methods of delivery, and visuals versus other tactics and options.

There are clear opportunities to use BE testing through experiments to achieve better and more empirical data to gauge these activities. This BE testing needs to encompass what students attending these events and programs (i) describe as the impacts of the information, speakers, visuals, and other aspects of these activities, and (ii) recall and use of these materials. This distinction and the collection of data about self-reported results (what students describe) and actual impacts (what they recall and use) are essential components of accurately measuring and assessing the benefits and other effects of these activities.

Looking ahead, if BE testing was implemented initially and on an ongoing basis, the advantages for these programs’ design and implementation would include much better evidence and much greater understanding of which programs are most effective and what aspects of these programs have the most impact. It will help identify best practices as well as those requiring further adaptation and refinement.

There are also major behavioural advantages and impacts for educators and other Influencers if BE testing is adopted. BE testing will help teachers, guidance counsellors, and parents alike from the much-increased focus upon gauging, monitoring, and understanding these programs. All of us pay more attention to, and act more upon, what is measured and reported.

**Absence of in-depth metrics of medium- and long-term impacts on career choices.** Beyond the program merits of and need for BE testing, there is a serious lack of data and other empirical tracking of the initial post-secondary paths for students, and the subsequent career paths of young people. The lack of data on career choice outcomes must be addressed.

The benefit of collecting, curating, and assessing post-secondary path data for evidence-based approaches to career guidance generally has been emphasized by the OECD. The advantages of these post-secondary metrics were noted by all of the educators and other organizations’ representatives we interviewed. Several of these interviewees highlighted or referenced the current challenges for educators and other Influencers’ approaches from the lack of measurement of post-secondary paths. They also stressed the merits of gathering this longitudinal data.

These metrics are important for public policy and the private sector given the reality of career guidance activities competing with other programs and priorities for funding and other resources from
governments, employers, labour unions, and non-profit associations. Unfortunately, the need for these data is not a new problem, while the benefits of collecting, monitoring, and assessing these vital quantitative indicators are not being realized.

**Focusing upon and realizing opportunities for collaboration.** We believe an area for active exploration and assessment is the scope for, and net benefits achieved through, increased collaboration among educators and other Influencers. The potentially significant benefits of more collaboration start with reflecting the budget realities noted above that are faced by governments and school boards as well as employers, labour unions, and non-profit associations.

Overdue initiatives in collaboration include the much greater potential for co-operative and co-ordinated efforts to spur broader adoption of best practices across school boards and regions. Examples of these areas for illustrative purposes include examining opportunities to expand the use of the following models or programs elsewhere in the GTA and other Ontario regions:

- HIEC’s career centre and in-depth use of interactive simulations for the middle grades;
- BOLT’s programs for under-resourced youth, their placement success and full skills support;
- The STEP to Construction program for its innovative experiential learning; and
- Leading online content, formats, and other best practices of various Influencers, including developing and adopting more BE-informed onscreen approaches that we explore later in this chapter.

There also appears to be clear benefits to the pooling of information, cross-fertilization of ideas, practical experiences, and potential scalability in a number of areas among the full range of educational and other Influencer organizations. Notably, several interviewees cited areas for greater co-operation among colleges, union and other training centres, ranging from particular programs to the adoption of best practices. In addition, there are opportunities to reduce the administrative burden and lessen other challenges imposed by government on programs like OYAP.

**Addressing Online Challenges and Opportunities**

As explored in Chapters 2 and 3, digital channels are of high and increasing importance in young people’s career decision journey given that onscreen activity is increasingly central to their daily lives. Young people’s mental models for careers are developed based on their experiences and close social connections. Extensive academic papers, other empirical research, and our interviews suggest young people use digital channels as a first source of information for career options and associated decisions (e.g., in assessing and choosing required courses).

We conducted a BE review of an array of Influencer websites to identify both the challenges and the opportunities of various current online resources related to skilled trades pathways. They included the various websites recommended for review by the industry leaders and organizations that we interviewed. In addition, we found other websites through several generic Internet searches, such as “trades careers Ontario”.

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A BEHAVIOURAL ECONOMICS APPROACH TO RECRUITMENT IN SKILLED CONSTRUCTION TRADES

WWW.RESCON.COM | PAGE 75
The purpose of our BE review was to undertake a balanced assessment, drawing general lessons in terms of their good aspects and their material challenges. We wanted to highlight notable BE opportunities to improve these online resources. Our review used the BE framework introduced in Chapter 2 with the three BE phases of decision-making: attention, interpretation, and action. This framework is particularly useful in digital contexts, where decision-making can occur much more rapidly, often heightening our cognitive biases.201

Young people will likely only conduct such a search if they consider skilled construction trades as a viable career that has potential to meet their needs and interests.

Further, although our review focuses on the website layout and content, it is critical to remember there are additional barriers to young people seeking out and finding these particular resources. The search for such information requires motivation to overcome the time-distance gap as well as the status quo and inertia biases, as highlighted in Chapters 2 and 3. Young people will likely only conduct such a search if they consider skilled construction trades as a viable career that has potential to meet their needs and interests. Having a career mental model that includes a positive interpretation of skilled construction work is a prerequisite for conducting an effective search. Given the multiple barriers to young people even landing on one of these websites, it is imperative that Influencer websites provide the least obstacles (“friction”) to finding relevant information and action paths.

**Barriers to Attracting Attention**

Once young people, or others seeking information on skilled construction trades land on a website, they make their first impressions very quickly. If the information provided by these websites is to have the desired impacts on young people, they need to attract and keep adolescents and young adults’ attention. Our review of barriers to attraction focuses on three elements: visual appeal, ease of use, and relevance.

**Visual appeal**

The importance of visual appeal for first impressions that can create a sense of trust makes the visual design of websites crucial to effectively conveying information.202 The visual appeal of the websites we reviewed ranged across the continuum from very dated and unappealing to modern, sleek designs with balanced white space, writing, and visual elements (e.g., photos) that attracted attention.

In the worst cases, the visual design and layout of various websites created information overload and decreased salience of important information. For these websites, even where their information is useful and relevant, it can get lost in the visual design. In contrast, the website earnwhileyoulearn.ca provides attractive and current visuals, particularly on the home page. It is not overwhelming in terms of information or options for users.
Ease of use
To decrease the hassle cost of finding information that is relevant and useful, websites should be easy to navigate. When navigation difficulties arise, users are not likely to stay on the website and may abandon their search altogether. Several websites had unclear or confusing navigation throughout. Sometimes this was in the form of choice overload, with multiple menu options, drop-down menus, and/or links on the home page potentially overwhelming users or deterring their interest. At other times, poor navigation occurred simply from the lack of clarity, including multiple paths to the same information or inconsistent menu options across pages. Websites with simple layouts and fewer options are easier to navigate. However, this simplicity needs to be balanced with providing necessary and relevant career and other information.

Relevance
When young people land on a website, they want to find the information they are looking for quickly. Both visual appeal and ease of use help in this manner, but the content of onscreen pages must also be relevant. Most of the websites we reviewed aimed to serve multiple audiences, including young people interested in trades as well as educators, parents, and employers. Too often, this resulted in messaging and navigation that were confusing and unclear. The salience of the message got lost, particularly when website sections for different audiences were not clearly labelled or separated. This unintended complexity creates additional hassle costs for accessing relevant information.

Given the importance of key Influencers such as educators and parents, it is understandable organizations want to reach multiple audiences. However, it is essential that the main audience be identified, with the key messages for that priority audience made clear and salient. Sections for other or secondary audiences need to be clearly distinguished by separate paths on the website or, alternatively, on separate websites. Both separate website sections and separate websites should be easy to access.

Barriers to Interpretation
Due to the importance of a positive interpretation of career-related information – involving both how information is perceived and how it is understood – it is also essential that young people are able to use online resources on their digital devices to update their career mental models. As such, the information architecture of websites needs to engage and inform all users – students, parents, and educators. Our review of barriers to interpretation focuses on four elements: amount of information, interactivity, presentation of information, and tangibility.

Amount of information
Generally, information overload was present in many of the websites reviewed. Writing in paragraph form, in which it is difficult to quickly find the most salient information, was very common in the websites reviewed. When we experience information overload, each of us faces the reality of added hassle cost in finding what we need and what is relevant. The risk is that when faced with such hassle costs, young people will delay their information gathering or put off their choice altogether. An excessive amount of text can also contribute to a lack of appeal.
A particular and especially relevant example was the list of trades featured on multiple websites. These sites often included four general sectors (construction, industrial, motive power, and service), resulting in a list of more than 150 trades. To get through the list, users are required to scroll down the screen. This creates choice overload, and is overwhelming for young people (and many adults), particularly those who are uncertain of what they are looking for.

Notably, one website effectively used opportunities to efficiently filter this information, and narrow down the list of options for interested young people. BuildForce Canada’s website, careersinconstruction.ca, has filters that included the type of construction, location, travel, and heights. These filters avoid choice overload, while also providing some guidance in the decision-making process for young people. This made it easier and more attractive to find trades that might be of interest. The application of the filters here is particularly interesting given that this website focused solely on 57 careers in construction, rather than the more than 150 careers in trades generally featured on other websites.

Interactivity

Few websites had any interactive elements. Those that did focused on testing knowledge of apprenticeships and trades. Although this testing can potentially increase levels of engagement, from a BE perspective, their approaches focused too much upon the volume of knowledge and content. Too often, there was too little focus on increasing the tangibility and salience of the information, achieving a
sense of co-creation with the user, or the transfer and application of knowledge.

Without interactive elements, websites generally did not promote this sense of co-production. That is, it is unlikely users felt empowered and part of the process of understanding and choosing a career in the trades; engagement through co-creation was not occurring. These websites also did not foster a sense of progress for students and other users, as they lacked indicators and other information helping people to feel as though they were getting closer to their goals. Interactive elements can also create a sense of endowment. When we feel that we have been part of creating something, we tend to value it more. Involvement in the process of narrowing down and researching a skilled construction trade might contribute to young people feeling invested in and valuing a career more in these trades. A lack of interactivity can also mean a lack of tangibility in terms of young people understanding and feeling what the different trades entail.

Instead, websites acted too often as a deluge of information. Although websites often provided a list of the trades and specific information about each trade, few provided any guidance in terms of narrowing down the options for the user. For example, websites might include a career-matching survey – which asks about users’ interests, needs, and strengths – and then suggest several skilled construction trades that might be a fit. At a minimum, such a proposed solution would need to be BE tested (or BE-informed in using its insights) and transparent to create credibility and understanding for students and educators. This might help users’ sense of co-creation and endowment. Another possibility is to contribute to a sense of progress. Onscreen prompts and content could highlight that the first step toward considering and potentially pursuing a skilled construction trades career is made by simply beginning their research online and in person.

**Presentation of information**

Information architecture is critical to ensure salience of relevant material and contribute to visually appealing sites. The amount of information a website can present can easily be too extensive for the vast majority of users, particularly as noted above if the website focuses on more than 150 trades. Yet while the presentation method onscreen is crucial, the formats, display, and depiction of information varied widely across the many websites we reviewed.

In contrast, some websites made good use of headings, bullets, and expanding lists that decreased the amount of material offered and effectively highlighted the most salient information. The OCCA site, [myocca.ca](http://myocca.ca), is an example of a site that effectively used attractive design and limited the presentation of information to what was relevant with clear and concise wording. This approach creates distinct “chunks” of important information to decrease the risk of information overload. However, too often, other websites lacked effective chunking of information. This led to poor salience and information overload as their formats lacked any indication of what information was important.
Tangibility

Both the time-distance gap and the lack of tangibility challenge young people’s motivation for researching and taking action towards a career. As such, it is critical that websites provide information that makes careers concrete and relevant. When relevant and tangible information is salient, presented in a visually appealing fashion, and embraces other aspects of the EAST framework, young people are more likely to both find it and act on it.

One method to increase tangibility can be to enhance information’s impact online by focusing on one individual’s pathway into skilled construction work, allowing interested users to see role models like themselves. In contrast to just providing statistics, this allows users to identify with the subject of the story. It draws upon the social aspects of the EAST framework, utilizing an effective messenger to deliver information on the skilled construction trades. These stories can provide details that can make careers seem more tangible. This can help with both salience and tangibility of the skilled trade itself as well as the process for following a career path to it.
Notably, these types of stories about young people working successfully and reporting high levels of career satisfaction are used by multiple websites, but were not universal in their utilization. The website earnwhileyoulearn.ca has some varied and relevant examples while Job Talks offers numerous good examples.

**Barriers to Action**

For a young person searching online for career options and education/training requirements, it is ideal if the first steps towards such a career are clear and simple.

However, too often the call to action on websites was unclear. For example:

- ✔ How does a young person choose a skilled construction trade?
- ✔ Once a career direction is chosen, what does a young person do next? And
- ✔ How does a young person get more information about a particular trade and sector?

Sometimes, the instructions are vague overall by necessity to avoid information overload from what is required to address each trade sufficiently. (This is also partly due to the specific nature of the apprenticeship chosen and its set-up, where each individual needs to find an employer, etc., as multiple trades may have very different calls to action.)

Importantly, however, the lack of clear actions can contribute to procrastination, inertia, and status quo biases. Most websites acted as repositories of information, rather than providing clear steps to enter trades directly, through apprenticeships, or through further education (e.g., what college programs are available and recommended for construction, such as those summarized clearly and succinctly by Humber and George Brown colleges on their websites).

**Using BE Insights to Nudge and Boost Career Guidance in Schools**

Guidance counsellors are in a unique position to support young people in their career decision journey. However, as examined in Chapter 3, guidance counsellors may face multiple barriers to effectively providing career guidance services. These educators:

- May be limited by the amount of time they can commit to career guidance;
- May be inadequately trained to provide effective career counselling;
- May have mental models that help limit the messages and shape the perceptions that they share with young people; and/or
- Too often lack adequate, timely job market and career information and resources.

As our interviewees consistently stated and a range of research shows, too often guidance counsellors and educators lack a broad awareness of career paths and opportunities in the trades. From a BE perspective, they also face procrastination, status quo, and inertia biases, requiring motivation to overcome the hassle costs of finding, processing, and applying new information as explored in Chapter 3. Even when educators are motivated and intend to pursue information, they may face the intention-action gap in addition to their other multiple and important demands on their time. As is the case for many people outside of the education system, most educators lack personal exposure to the
construction trades. They face low salience and tangibility of careers in skilled construction trades and related jobs.

We recognize that for guidance counsellors to be most effective, there might need to be large, sweeping policy changes in terms of the training they are offered and required to have, resources provided to them, and differentiation of roles (e.g., distinguishing psychological and other counselling services for students from providing career guidance). While beyond the scope of this report, OECD recommendations provide some excellent direction in this regard.204

For this report, we focus on smaller nudges that might be implemented to make information easy, attractive, social, and timely. The EAST framework again provides a very useful BE approach overall here as well as offering specific guidelines for developing effective nudges to guidance counsellors in providing career guidance. We also recommend BE-informed boosts to increase their knowledge of construction careers on a sustained basis.

Make Information Easy to Access

Guidance counsellors should have more and better access to the necessary information about job markets and training requirements in (i) finding the necessary resources and (ii) having the relevant information made salient and easier to access within those resources. Guidance counsellors lack access to timely and in-depth information about the demand and supply of jobs, and the skills and education required for these careers (as well as facing under-funding and inadequate resources).205 They can
encounter choice overload and hassle costs in their information search and, if they find a relevant resource, may face information overload. (Testing of these and other BE issues for guidance counsellors’ information search has significant merits – see Chapter 2 on the essential need for BE testing generally and Chapter 5 for specific recommendations.)

Guidance counsellors and teachers do not need to know everything about all of the more than 150 career options in the trades in addition to the multitude of other post-secondary career and education options. It is not feasible given their multiple other responsibilities.

Instead, the career option resources to find the information they need about skilled construction trade opportunities, education, and training paths – and to effectively support young people – have to be accessed easily. At a minimum, there are benefits to the use of a central place or small number of websites clearly linked to the requisite other websites for educators. These websites could be readily used to find career-related information for skilled construction trades – this concept should be considered and assessed. A centralized depository or small choice set of key websites acts as a nudge, decreasing the hassle costs faced by educators interested in finding more information.

**Most labour market information too often requires economics expertise to find, collect, and assess the statistics and reports. Similar to recruitment’s other online challenges and opportunities, the relevant job market information needs to be available onscreen, and made salient and tangible on these digital pages.**

However, unless these are clearly superior to existing website sources and easier to use, adding additional website(s) may contribute to the choice overload for guidance counsellors searching for information. This presents an opportunity for school boards, professional associations, and other Influencers to, at minimum, highlight or link to relevant and effective existing information sources. Government and the construction industry each have clear roles here in making job market information easier to find, more attractive to use, and more timely for guidance counsellors. This is not the current situation. Most labour market information too often requires economics expertise to find, collect, and assess the statistics and reports. Similar to recruitment’s other online challenges and opportunities, the relevant job market information needs to be available onscreen, and made salient and tangible on these digital pages.

**Make Information Attractive**

Educators face many of the same issues as young people in accessing digital information – websites need to be attractive and easy to use in order to draw their attention and communicate trustworthiness. Timely reminders and invites should also be personalized and salient for individual guidance counsellors. Finally, organizations should aim to connect with educators on an emotional
level as well as addressing the availability and affect biases.

For example, sharing stories of students going to university or college then switching years later due to inadequate or undesired job prospects with these initial post-secondary paths could be shared with guidance counsellors in salient formats. Forty-six percent of people in colleges already had completed or done part of a university or college credential and have subsequently gone to college or switched their college program\textsuperscript{206} to achieve more employable skills and better job prospects. Their stories could act as a reminder for guidance counsellors about the importance of their profession in young people’s development and their career decisions. These stories might be particularly powerful if they were depicted online using past students from the school or school district where the guidance counsellor is working.

Equally important is the provision of these and other individual stories in attractive audio-visual formats that guidance counsellors can easily source for in-classroom use, individual career counselling, and in providing digital outreach to students. Surveys of current and potential entrants to the skilled construction trades as well as extensive BE research\textsuperscript{207} show that audio-visuals can be particularly effective in conveying information in an attractive as well as social manner. Notable examples to address these gaps include the videos available on Job Talks.\textsuperscript{208}
As much as possible, information about careers in trades should be shared in a social manner. In addition to using the videos and other individual stories highlighted and recommended above, three other initiatives are recommended.

First, as described above and in Chapter 2, visits by guidance counsellors to trades training sites can be highly beneficial. These visits increase tangibility, challenge misperceptions from the affect bias, and address the narrow framing from the availability bias that many educators as well as students and parents have. Further, there are substantial messenger benefits. These in-person visits enable guidance counsellors to hear directly from people working in construction, training young people in the skilled construction trades, and those being trained. They allow guidance counsellors to have their own direct experience in seeing construction career opportunities and interacting with these skilled trades. Beyond these in-person opportunities are online options such as LiUNA! Local 183 Training Centre’s Instagram and Twitter accounts which regularly show training occurring onsite.

From our interviews, this exposure to training sites clearly helps adjust educators’ mental models. In particular, the experience in person has the potential to increase the salience of careers in trades, making them more likely to share such opportunities with their students. A great example of this type of visit is the LiUNA! Local 183 Training Centre tour for guidance counsellors. Other examples include in York District School Board, where guidance counsellors participated in a half-day “Mystery Bus Tour”: they boarded a bus and went to surprise destinations to experience and hear about different trades.209

Second, stronger networks of guidance counsellors could be fostered, to provide these educators with further social support from peers, and enhanced sources of information and training about skilled construction careers. Examining all of the opportunities provided by professional associations
of guidance counsellors was beyond the scope of our current review, but these provide potential opportunities as a source of nudges (e.g., newsletters, timely reminders, in-person events) as well as boosts (e.g., courses and other training on professional development days plus attractive webinars and other online sources) to change guidance counsellor perceptions, and increase their awareness and knowledge of skilled trades and related careers in construction.

Third, employers, labour unions, and non-profit associations engaged in career guidance should aim to expand their network of connections with schools and school boards. One potential benefit might be the material enlargement of educator networks available for classroom and school events such as career panels.

Greater variety in the job options represented at career panels and other career events during the primary, middle, and high school grades is good for students and for the educators involved. Community databases of workers willing to volunteer their time as well as mentoring events, such as those managed by HIEC, might be another way to make access to such networks easier if they were adopted by other regions in the GTA and elsewhere in Ontario.

**Make Information Timely**

BE research and decades of practical applications show that the timing of information provision is important. For students undertaking career decisions, providing effective information is crucial before narrowly-framed perceptions occur, and/or inaccurate mental models are too well anchored.

Any time behaviour is disrupted or shaped by major events (e.g., starting a school year, especially when moving into the middle grades or high school) can be an ideal time to be active and early in providing nudges to improve information and choice architecture. More timely tactics for employers, labour unions, and non-profit associations include making it a priority to inform and develop connections with new teachers and guidance counsellors early in their first year of work. This could have substantial BE benefits initially and on an ongoing basis.

In addition, reminders to guidance counsellors and presentation of information about skilled construction trades might be best timed so that they are adequately prepared to talk to students about this when it matters most. Ideal times for such reminders might be in (i) September and October when they are guiding Grade 12 students in their college and university applications, and (ii) May and June when they are helping Grade 10 students think about options for the following years (e.g., co-ops, OYAP). These reminders serve to make information to students more salient and help them to counter young people's anxiety and potential to engage in information avoidance given these students’ major pending decisions.

Another option is one embracing the BE benefits of commitment. This could involve guidance counsellors signing a promise at the beginning of the school year to provide unbiased presentations of all possible career opportunities. The combination of this commitment with the provision of reminders of this promise at key junctures throughout the year may potentially help improve the quality and
quantity of career guidance provided by guidance counsellors.

Summary

This chapter is the third part of our BE framework for recruitment. Having explored BE research (Chapter 2) applicable to recruitment generally, used BE concepts and insights to better understand young people’s career decision journey into or away from skilled trades options (Chapter 3), it proposed BE tactics to improve students and educators’ attention to, understanding of, and potential actions for career options in skilled construction work (Chapter 4).

The next chapter concludes this report. It summarizes our key findings and recommendations to enhance recruitment in skilled construction work. Chapter 5 also places these in a broader economic and social policy context in several key areas for near-term initiatives, and for future BE research in recruitment and retention in skilled construction work.
Appendix C: Illustrating BE Testing of Influencer Impacts: HIEC’S Career Centre Example

Testing of impacts on career decision, success, and satisfaction can be, by its nature, challenging and, at times, complex. For illustrative purposes, an example is set out below of a potential approach to testing HIEC’s impact on Grade 7 students visiting its Career Centre.

Ideally, we would be able to randomly assign students to two different groups. One group would visit HIEC’s Career Centre and the other group would have yet to participate in the visit but will do so later in the school year. Random assignment with a large sample attempts to minimize any systematic differences between two groups, so that the only material difference between them is whether or not they get to visit the Career Centre.

This would enable testing to gauge the short-term impacts of the Career Centre upon attendees’ self-reported understanding and their actual knowledge and preferences:
- The day of the Career Centre visit;
- After one week or one month; and
- After 3-6 months.

For longitudinal assessment of the impacts of these Career Centre programs for participants versus non-participants, an alternative method that would generate data regarding the success of HIEC’s program would be a matched-sample quasi-experiment.

We would propose matching the sample of students who, by the advantage of growing up in Halton, experience the Career Centre visit to a sample of students outside of Halton who do not have that Career Centre visit. This group of students outside of Halton should be as close as possible to the Halton sample in their overall characteristics. The goal is to find a city that was as similar as possible to one in Halton in terms of size, industries, income distribution, and any other (measurable) variables that might impact career paths. The test would then compare the two samples (Halton city vs. matched city) on several outcomes to measure the Career Centre’s effects.
Chapter 5: Main Findings, Key Recommendations and Next Steps

A BA in history and a minor in plumbing should not be seen as a joke. It should be a reality as it is in countries such as Germany or Switzerland …


Skilled trades can offer a promising and rewarding career path, yet many youth are either unaware or discouraged to think of skilled trades as a sustainable career path due to some widely held misconceptions.

– Civic Action, Now Hiring (2018)²¹¹
There is a clear and compelling case to address a broad range of BE issues in recruitment to skilled construction work, especially in the residential sector, as previous chapters have described and diagnosed.

Building upon Chapters 2-4, this chapter summarizes our main BE findings, and highlights our major recommendations to address these recruitment challenges. We utilize our preliminary BE framework to recommend a series of strategic initiatives and multiple BE-informed tactics to improve young people’s career decisions during kindergarten to Grade 12, and after high school.

Our BE recommendations are intended to help young people make better career choices, with a focus upon those who are well suited to and interested in considering the skilled construction trades and related construction jobs. We want to help many more of them with the interest and/or aptitude to enter training for these occupations (i) right after secondary school as a career path, and/or (ii) as soon as feasible if their initial college or university paths do not meet their expectations or needs. In addition, BE-informed approaches will help attract other new entrants to skilled construction work by a better matching of their capabilities, interests, and aptitude with skilled construction career options.

Our BE recommendations are intended to help young people make better career choices, with a focus upon those who are well suited to and interested in considering the skilled construction trades and related construction jobs.

Applying BE effectively will also assist key Influencers such as parents and educators to better help young people undertake their career decision journey, especially in regard to skilled construction trades and related occupations.

Our preliminary BE framework has four strategic foundations and recommendations. They are:
- ✔ Helping improve the mental models of young people, parents, and educators;
- ✔ Assessing and enhancing Influencers’ nudges and boosts for young people;
- ✔ Embracing BE testing to enhance these tactics’ results and costs; and
- ✔ Creating long-term metrics to better gauge and significantly improve recruitment.

Applying BE to recruitment is also important beyond the robust merits for residential and other sectors of the construction industry in Ontario. There are substantial and much broader economic, fiscal, and social benefits for Ontario and Canada in using BE insights effectively in recruitment to skilled construction work. These begin with helping young women, Indigenous peoples, and those less fortunate economically by offering them more paths to higher-earning, more satisfying jobs, and better assisting them in pursuing these career opportunities.

Improved recruitment to skilled construction work through BE applications will lessen the costly
economic inefficiencies of the current system. There are too many young people who automatically pursue a university degree – irrespective of the subjects studied and any training received – thinking it will lead directly to well-paid and satisfying jobs and careers. A substantial number of these young people find themselves belatedly choosing apprenticeships, voluntary trades, or college with potentially large student debt from their university years and with a major delay in earnings. In other cases, a significant number of young workers lack credentials for better-paid and more satisfying work. These young people too often have only precarious employment options that they neither want nor enjoy but must take to have a paid position. A significant number of young Ontarians in the NEET category currently and in future could be helped by BE-informed career guidance in person and online about their opportunities in the skilled construction trades and related jobs.

The persistence of these problematic choices of inefficient or unsuccessful initial post-secondary paths, and the challenges of precarious employment, need to be addressed. It is a serious public policy issue given its numerous repercussions and clear opportunities with demand for skilled trades workers and other sophisticated work in construction significantly exceeding the supply. Notably, these shortages in skilled construction work continue despite an array of notable recent reports showing that the demand for university graduates is and will be far less than the supply.212

Main Recommendations

1. Improve Mental Models About Skilled Construction Careers during Kindergarten to Grade 12

Strategic Imperatives

Young people need earlier and more sustained exposure to skilled construction work as a viable and equal option with college and university. It is essential that the merits and opportunities in skilled trades and related occupations become a foundation of career guidance throughout every phase of education. In particular, skilled construction work needs to be well described and depicted as being as attractive, feasible, and worthwhile as university and college for career paths. These and other skilled trades need to be viewed and offered as one of the cornerstones of career options for young people. They are not merely a fallback option nor one to choose after college and/or university do not pan out, but viable and desirable first choices for many young people. Whether skilled trades and other related occupations are added as the “third wall” of career options, or the third pillar with university and colleges,213 this initiative is essential for the construction sector specifically and the economy generally.

Young people need earlier and more extensive in-person interactions with the skilled trades, especially in construction. Whether in primary school or in Grades 7-12, students and educators need more interactions with the construction sector. It bears reiteration that the quality and quantity of these interactions matter. Essential touchpoints for employers, labour unions, and non-profit associations include more in-depth presentations and much more extensive offerings of effective career events and activities in schools, as well as at training centres and worksites. As important, the method of providing this information is crucial. Extensive BE research, as noted in Chapter 2, shows the effectiveness of audio-visuals for our judgments and decisions relative to written information. Using audio-visuals, such as the video profiles of an array of young construction workers,214 can help
foster positive emotional reactions, especially given the messenger effects of these videos. Repeated exposure of young people, parents, and educators to the range of these tradespeople videos also helps draw upon our tendency to like things that are familiar.

**Major Influencers need to build upon and improve most of their online approaches.** Although there are a number of good onscreen examples of selected Influencers, it is abundantly clear that most educational, employer, labour union, and non-profit association websites need to be improved. Their websites need to be easier to find and use on all major types of digital devices as well as become more attractive, more social, and timely. We recommend below a series of BE-informed measures to enhance these Influencers’ websites, adopting social media approaches, and improve other digital interactions. Our proposed improvements include making them more salient and tangible, use better messengers, and offer clear calls to action.

**Tactical Initiatives**

**It is vital to increase the focus upon and interaction with primary schools when students’ initial ideas of the world of work are being formed.** There is a compelling need to make skilled construction trades and other construction work a more interesting and consistent part of career events and activities in classrooms and school-wide platforms. Kindergarten through Grade 6 students need more and better career exposure to skilled construction work in person and online.

Outreach to primary schools by employers, labour unions, and non-profit associations should be a priority. Trades and other skilled construction workers need to appear regularly at career events in classrooms and in school-wide activities in primary schools. Repeated exposure to construction tradespeople and managers helps make these career options more familiar, and thus more open to liking these paths. Provision of much more effective online interactions is also essential. We would note Earth Rangers’ success with primary school students both in person and online as a potentially instructive example of how interaction with primary students can be done effectively. Earth Rangers’ approach with primary students includes its engaging and well-attended live shows with audio-visuals, and its award-winning podcast approach.

**There are robust merits to expanding the HIEC model to other Greater Toronto Area (GTA) regions for students in the middle grades.** The extensive anecdotal success of HIEC and its promising impacts on students’ career option awareness and understanding in the middle grades merit highlighting. HIEC’s results demonstrate that students in Grades 7-8 can be ready for much greater exposure to career information, and for more in-depth interaction to learn about and understand the world of work. While specific elements of how the HIEC model can be applied in other GTA regions will need to be tailored to the leading industries in each of these jurisdictions, there are clear lessons and best practices that can be adopted elsewhere from the HIEC model.

**There is an immediate and urgent need to improve all elements of career guidance frameworks and career options models in high school.** More frequent in-class and school-wide presentations about skilled construction trades and other related work could benefit both educators and students in Career
Studies courses and beyond. BOLT’s success and the potential to expand its model elsewhere in the GTA bears emphasis and merits significant consideration. OCCA’s and LiUNA! Local 183’s training centre programs involving visits to classes and schools – and the latter’s offering tours of its training centres also warrant highlighting.

Much-improved online resources and audio-visual examples\textsuperscript{217} to change perceptions of skilled construction trades are pre-requisites. Promising BE opportunities and applications include more widespread use of the Job Talks videos, the results from the survey of GTA construction workers,\textsuperscript{218} and selected construction career information materials that are available online from leading Influencers such as BOLT, OCCA, and LiUNA! Local 183’s training centre.

It is also critical to increase engagement with parents to challenge their misperceptions about the nature, opportunities, and pay in skilled construction work. More school-wide events and field trips with parents are essential. The content of these employer, labour union, and non-profit activities needs to highlight the compensation as well as satisfaction benefits of skilled construction work. They need to effectively convey the education and training involved. In this regard, they need to underscore the importance of mathematics and English in the skilled construction trades and related occupations, and the increasing use of advanced technology in construction.

Equally important is the need to change educators’ mental models, especially to correct their misperceptions. Tactics include significantly increasing the quantity of interactions in classrooms on a school-wide basis, including field trips and innovative programs in person and online. There are compelling BE benefits of teachers and guidance counsellor visits to training centres and worksites.

**There are clear opportunities to build further momentum with additional enhanced outreach to young people during and after high school.** Although there are a range of government and other Influencer activities already in place, significantly more can be done. These begin with offering increased opportunities for training centre and worksite visits, and enhanced online approaches using BE insights. Other promising BE-informed initiatives include more (i) work-integrated programs during and after high school; and (ii) high school to college programs.

\begin{figure}[h]
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\includegraphics[width=\textwidth]{Figure12.png}
\caption{Using BE Tactics to Address Other Recruitment Issues}
\end{figure}

Additional BE-informed and other initiatives are clearly warranted to help address and provide the full picture regarding construction-related courses and entry into a trade. This starts with BE-designed labour market information being shared with high school guidance counsellors and colleges about careers in construction while students are making decisions about post-secondary construction programs, especially pre-apprenticeship programs. This information must include where there are current and projected shortages as well as waiting lists for jobs.

There are also clear BE opportunities to help educate students after graduating from college and pre-apprenticeship programs about how to seek employment, how to register with a labour union and/or as an apprentice, and who manages apprenticeship training.
2. Achieve Much Greater Collaboration Among Influencers to Significantly Increase Their Impacts Through Nudges and Boosts

There is major scope for Influencers to coordinate and/or jointly increase their effectiveness in the primary and middle grades, high school, and post-secondary years. As Chapters 3 and 4 have explored, there are multiple models with successful tactics in providing career information and interacting with the world of work. In particular, HIEC, BOLT, STEP to Construction, and George Brown College demonstrate how effective collaboration can be achieved among educators and industry. The potential to change students’ information and choice architecture, and to boost their career decision-making capabilities by adopting the best practices of these models plus elements of other Influencers’ successful collaboration warrants more focus by government and the construction sector.

The approaches and tactics of these successful four Influencers and others such as OYAP, LiUNA! Local 183, OCCA and Humber College implicitly use core elements of the EAST framework for students and educators alike as they make it:

- **Easier** to find information and to engage with the world of construction work by reducing the hassle costs to attend in person, to read in print, and to use online;
- **More attractive** with their interactive presentations, training centre, and worksite visits;
- **More social** by engaging with the whole class or on school-wide basis; and
- **Timely** by ensuring in-depth career information and work interaction opportunities are available during Career Studies in Grade 10, and through career events and activities in Grades 11-12.

Broader adoption and increased coordination of approaches based upon the successful activities of these Influencers will be key to offsetting students’ procrastination, inertia, and belief biases. Their messenger effects and the ease of attending their events serve to reduce the obstacles from the motivational and search effort required of young people.

In many cases, these nudges and boosts do not need new money; instead, a better allocation of existing funds and greater commitment to co-operation across types of Influencers is recommended. Although it is well outside the scope of this report to have recommendations specific to individual entities, we start by posing a series of strategic and tactical questions about the current environment for career guidance and the roles of Influencers therein. Among our questions about the existing allocation of government and other entities’ funding and resources are the following. First, what is the scope for expanding the use of models like HIEC’s Career Centre outside of Halton, or programs like BOLT and STEP to Construction beyond Toronto/GTA? What are the lessons from and best practices of George Brown College’s approach to construction management, skilled construction trades, and other programs in this sector for other colleges?

Beyond applying the BE lessons from these and other collaboration successes, it may be worth exploring opportunities to work with selected other entities. Examples include:

- Skills Ontario offers in-school presentations about the skilled trades, skills competitions and a range of programs including those focused upon young women, and First Nations, Metis and Inuit.219 To date, however, while its presentations, programs and skilled competitions include a number
of construction trades, major collaboration in career guidance has not been achieved with the residential construction sector in contrast to the eight collaboration success stories explored in Chapter 4. The potential for co-ordinated, BE-informed initiatives about skilled construction work with Skills Ontario, industry, and educators warrants in-depth consideration and exploration.

- CivicAction’s YouthConnect program aims to boost the capabilities of disadvantaged youth with a digital platform approach to enhance their presentation online to potential employers, take better advantage of key skills, and to increase their professional network. Looking at BE-informed ways to work with CivicAction to attract young people in the NEET sector with interests and/or aptitude in skilled construction trades and related jobs also has potential merit.

At the tactical level, there are a host of BE-informed initiatives that we would propose for guidance counsellors. This starts with information about and presentations regarding construction work during professional development days for guidance counsellors. It should be noted that some modest efforts are underway in this regard; however, there is great scope for much more BE-designed material to be delivered in person, print, and online regarding skilled construction work. Using BE insights will clearly help with structured presentations and ongoing activities for guidance counsellors. There is major potential for increased visits to training centres and worksites as regular annual features of employer, labour union, and non-profit entities’ interaction with these educators.

We would also suggest working with entities such as the Ontario School Counsellors Association (OSCA) and school boards. BE opportunities include using reminders to guidance counsellors about career events, information and other aspects of skilled construction work. Exploring potential commitment contracts involving voluntary pledges by guidance counsellors to incorporate skilled construction work paths as a core component of their career guidance approach also has potential merit. Other nudges and boosts include building skilled construction career databases and other information sites that are easier and faster to use, creating better online linkages to audio-visuals such as Job Talks, and providing ongoing web-based courses to boost guidance counsellors’ knowledge of skilled construction trades and related occupations.

**Improving the linkages, depth, and breadth of Influencers’ online approaches is overdue and vital.**

Despite notable examples of good online practices of some employers, labour unions, and non-profit entities, far too often these onscreen resources are siloed and uncoordinated. The BE problems begin with the absence of a single online source that provides an easy-to-use, clear, and comprehensive overview of skilled construction work. At least as important, too few of these websites offer references to other websites to fill in gaps in their own information.

At a minimum, a series of crucial nudges onscreen need to be undertaken. They include reducing hassle costs for young people, parents, and educators with better-linked websites to the good aspects of various Influencer online platforms. We would stress the need to improve the visual appeal of many websites as well as adopting chunking, simplicity, and tangibility in their approaches. Making more websites mobile-friendly to attract young people on the devices that they use most, and reduce their hassle costs in finding out about skilled construction work, is vital. The importance of using social media, such as Instagram and Twitter, to convey career opportunities (as is done by LiUNA! Local 183) as well as the
education and training paths to this work is important. So are attractive visuals and sharing authentic stories of young construction workers.

It is also important to stress the messenger benefits of profiling young people working in trades, especially Indigenous, recent immigrant, and young women workers. The audio-visual appeal of this approach helps change misperceptions and break down barriers to these young people’s recruitment. In addition, it is imperative to improve the attractiveness of and engagement of young people on these websites with more interactivity, a greater sense of progress for the user, and clearer calls to action.

3. Commit to and Undertake BE Testing of Initiatives and Adjust Programs and Tactics to Reflect its Results

**BE testing is critical.** Successful collaboration initiatives need to be quantified on an absolute basis to better assess their merits and costs. Governments, educators, and industry also require a better understanding of the relative merits of specific information, formats, methods of delivery, and visuals versus other tactics and options. This involves collecting, assessing, and monitoring data on these programs’ initial and subsequent results. This will help gauge their short- and medium-term effects for young people, parents, and educators.

Understanding the longer-term impacts of employer, labour union, and association programs will require far greater and systemic collection of longitudinal data, a separate need that we return to below.

As a preliminary step, we would recommend looking at particular aspects of several successful Influencers’ programs, and running trial experiments of their impacts. Specifically, this BE testing would measure what students attending these specific events/undertaking these activities (i) describe as the effects of the information, speakers, visuals, and other aspects (self-reported results) of these activities; and (ii) recall and use of these materials (actual impacts).

Implementing BE testing of important current programs and tactics and of potential new initiatives will generate multiple benefits. They include the extensive usable evidence and much greater understanding of:

- ✔ Which programs are most effective for students, parents, and/or educators, including the absolute and relative impacts upon different age groups of students?
- ✔ What aspects of these programs are most effective?
- ✔ What are the best practices for adoption/scaling across school boards and regions?
- ✔ What elements require further adaptation and refinement? And
- ✔ How this information can be better integrated into school curriculums and shared with students, parents, and teachers?

4. There is a Compelling and Urgent Need to Collect and Assess the Longitudinal Metrics of Young People’s Pathways after High School

The longstanding and surprising gap in the collection and use of data regarding young people’s career paths is a major problem. It is crucial to address this lack of data and other empirical tracking of the (i)
initial post-secondary paths for students, and (ii) subsequent career paths of young people.

Currently, there are major challenges for educators and other Influencers’ approaches from the absence of data about students’ post-secondary paths to inform their programs. Understanding what career paths students choose initially and subsequently through accurate data is an essential step to looking at how educators, government, employers, labour unions, and non-profit organizations design and implement their approaches. It is an ongoing prerequisite to a better understanding of what the impacts of career guidance events, programs, and other activities are upon young people’s post-secondary paths.

Better and sustained data collection, monitoring, and analysis of career decisions will provide vital metrics to assess changes in the behaviour of young people making actual career choices (initial and ongoing). While BE testing is essential to help measure intermediate impacts (i.e., changes in young people’s knowledge and perceptions of skilled construction careers) as outlined above, our goals are also to measure outcomes. We want to determine what is effective in helping young people find work that aligns with their goals, interests, and needs as well as helping fill shortages in skilled construction work.

Gathering this longitudinal data for informing Influencers’ activities would be hugely beneficial. This would include improving their methods of providing career information, helping guide public policy, and more effective funding of career guidance in education. Career guidance activities compete with other programs and priorities for financing and other resources in the public and private sectors. Understanding what young people actually choose for their initial and subsequent career paths is essential to measure and monitor what is working and what is not for young people’s career choices.

Some efforts at data compilation of young people’s career choices are underway. However, to date, these are neither systemic nor sustained as they are piecemeal, limited in scope, and too often siloed. Accordingly, much better career path metrics are long overdue. Without these career path data, Ontario does not have an evidence-based approach to career guidance, nor any means to measure its effectiveness.

Of note, our recommendation of collecting, monitoring, and analyzing career path metrics is consistent with other leading recent reports which call for much better collection of data by government and educational entities at the program and discipline levels as well as from recent alumni.221

Understanding what career paths students choose initially and subsequently through accurate data is an essential step to looking at how educators, government, employers, labour unions, and non-profit organizations design and implement their approaches.
The Broader Need for Improving Recruitment in Skilled Construction Work: Understanding the Economic, Fiscal, and Social Merits for Ontario and Canada

The shortages of new entrants into skilled construction trades reflect major and broader economic issues. Put simply, addressing recruitment challenges offers economy-wide gains in several important ways. These begin with Canada’s excess supply generally of post-secondary graduates in fields with a lower return on education and shortages in many fields that offer a higher return on education. This includes the skilled trades as well as the STEM areas (science, technology, engineering, and mathematics).\textsuperscript{222} It is a major concern that six months after graduation, approximately 40\% of undergraduates in the humanities and social sciences are back in school at an equal or lower level, including 15\% who go to college for better career opportunities.\textsuperscript{223} At least as important, 15\% of recent school leavers are or will become cashiers in retail sales or work at food counters and as kitchen help during 2015-24. Yet, the retail sales and food beverages sectors comprise only 8\% of the job market and are highly vulnerable to disruption.\textsuperscript{224}

For governments, there are robust fiscal merits of improved recruitment in the skilled construction trades. The direct income and other tax benefits of more people working in construction are notable as are the indirect multiplier effects for other employment, GDP growth, and incomes. The much more effective spending on post-secondary education\textsuperscript{225} from the better alignment of many young people’s skills and interests with their paths after high school is also important. Making recruitment more effective through BE applications will also make career guidance expenditures more efficient. The costs of inadequate career guidance and problematic career path decisions that result in youth joblessness are sobering. For example, research suggests that the lifetime burden\textsuperscript{226} to society of just one youth remaining unemployed can reach $1,000,000.

\textbf{It is encouraging to see the impacts of leading programs such as those of BOLT, HIEC, LiUNA! Local 183, and other entities to help these young people. However, much more could and needs to be done in the GTA and other regions, embracing the best practices of these Influencers’ approaches.}

There are compelling social merits to more effective career guidance for groups that are under-represented in skilled construction work. The OECD’s work highlights the benefits for these young people who are female, from immigrant backgrounds, and/or who have major economic and financial disadvantages. Its research underscores the need to also focus career guidance in schools and by the private sector on these groups.\textsuperscript{227} It is encouraging to see the impacts of leading programs such as those of BOLT, HIEC, LiUNA! Local 183, and other entities to help these young people. However, much more could and needs to be done in the GTA and other regions, embracing the best practices of these Influencers’ approaches.
Future Research Recommendations: Expanded BE Approach and its Applications

There are significant opportunities and merits in future research building upon this report’s preliminary BE framework and its BE-led recommendations for recruitment in skilled construction work.

Starting with the supply side of recruitment, there are major benefits to:

i. developing this report’s preliminary BE framework and core recommendations into a full BE framework; and

ii. undertaking in-depth testing of recruitment’s supply side. This should include BE testing of selected nudges and boosts, and other initiatives and Influencer tactics.

There are also numerous advantages to using a BE approach and applying its insights to assess the demand side of recruitment. This would encompass undertaking an in-depth BE analysis of the (i) information communicated in person and online and (ii) hiring approaches of employers, labour unions, and non-profit associations. The goal would be to create a BE framework and specific recommendations to address demand side issues.

There are also robust merits and major opportunities in creating a BE framework and applying its insights to retention. Using BE findings and insights would enable a much better understanding of fundamental questions such as what are the key BE factors supporting and inhibiting retention? How can BE insights be used to foster the former and reduce the latter? And what BE factors are reducing retention by encouraging skilled labour flows to other construction sectors, and to non-construction sectors?

Summary: Putting Our Recommendations in Context

In making these recommendations, we are looking to build upon the existing activities of employers, labour unions, non-profit associations and government in career guidance.

Our recommendations reflect (i) longstanding and well-demonstrated BE principles and insights; (ii) the realities of where the private sector’s engagement in career guidance is essential and unique; and (iii) what other forward-looking firms, governments, and other entities outside of construction are undertaking in recruitment.

As previous chapters and the OECD’s in-depth, broad-ranging empirical research\textsuperscript{228} have shown, when employers, labour unions, and non-profit associations provide career and labour market information, they offer unique perspectives and robust messenger benefits. Interaction with the world of work is critical to improving students’ career decision-making and mental models. Various Influencers’ leading-edge programs are essential given that the educational sector has neither the resources to undertake the breadth, depth, and frequency of these career interactions nor the focus given the many other functions and roles that schools, teachers, and guidance counsellors undertake.

Our core recommendations reflect the practices of other companies, industry sectors, and governments who are investing heavily in better recruitment and skills training. From Pepsico, Guardian Life and
Prudential Financial, and AT&T in the United States to Shopify in Canada, various firms are spending large sums and working with educational institutions and other entities to train workers through innovative programs.\textsuperscript{229} Various governments are changing their approaches by improving the skills bridge between high schools and colleges (British Columbia) or through fundamental reshaping of their national education sector and labour market, including a sophisticated online education and career guidance portal for all students (Singapore).\textsuperscript{230}

We believe Ontario can build upon the lessons of these entities from outside of the province as well as the best practices of educators, employers, labour unions, and non-profit associations in Ontario. As a construction firm quoted in the Canadian Federation of Independent Business’ “Hire Education” report in 2018 aptly stated:

*Trades have to be promoted as a positive career choice NOT a secondary option if you don’t qualify for university. Trades have become very technical so require the same skills sets as universities plus people skills and physical skills.*\textsuperscript{231}
Supplemental Appendix 1:
The Construction Industry and The Residential Construction Sector
By Andrew Pariser & Amina Dibe

This backgrounder provides an overview of the construction industry, and more specifically the residential construction sector. It is intended to provide an overview of Ontario’s construction industry’s importance and its key sectors, why residential construction is recognized by government and industry stakeholders as unique, and to outline the consequences to the industry if recruitment issues are not addressed.

The construction industry is a major driver of the economy, accounting for roughly seven per cent of Canada’s GDP. In Ontario, construction is comprised of seven distinct and separate sectors. These sectors are recognized by industry and government, and through various pieces of legislation.

These sectors are:
1) Industrial, Commercial and Institutional (ICI)
2) Residential
3) Sewers and Watermain
4) Roads
5) Heavy Engineering
6) Pipeline
7) Electrical Power Systems

It is important to note that the construction industry, compared to other sectors, has higher rates of unionization, especially in the GTA. As a result, the evolution of construction in Ontario has been heavily impacted by unions, collective agreements, and labour relations activities in general. This has resulted in special legislation (under the Ontario Labour Relations Act) for the construction sector, but also for individual sub-sectors including both ICI and residential. For example, in each of these seven sectors, overtime has become increasingly specialized and unique. The stakeholders involved have acted differently for each sector. They include: owners, builders, and developers; sub-trade primes and contractors; and workers (through labour unions). For example, the way work is performed, buildings are built, or projects are constructed varies and is unique in each sector.

The result is that each sector has unique workforces, work rules, and work environments across Ontario. This does not mean that there are seven types of each skilled construction trade – rather that the environment in which a trade works is distinct and unique as each sector has specific actors and influencers.

Accordingly, in order to understand construction and its sub-sectors, one must first understand Ontario’s labour relations history and how each of the seven sub-sectors has evolved as there are numerous practical differences between the sectors.
Brief History of Residential Construction in the GTA

While it is important to note that residential construction existed and prospered before the 1960s, it can be argued that the current structure and organization of work, including labour supply, dates to that decade. In the 1960s, new-build residential construction was divided into two distinct sectors: high-rise or apartment builders formed one main group, and low-rise or home builders formed the second. Also significant at that time, international building trade unions (Plumbers, Electricians, Carpenters, etc.) had made major inroads into the ICI sector and viewed the high-rise residential sector as natural area for further expansion.

High-Rise Unionization

High-rise builders became aware of this desire to unionize by the building trades unions and were concerned about the future of their business for many reasons, including the potential impacts of jurisdictional disputes (JDs). JDs occur when competing unions jockey, grieve, or dispute which union has the right to perform work. JDs slow down the pace of construction and can lead to expensive grievance and arbitration awards.

In response to this, collective agreements were eventually created and administrated by the Metropolitan Toronto Apartment Builders Association (MTABA) and LiUNA! Local 183. These agreements enshrined the idea of composite crews, eliminating jurisdictional disputes and creating a workforce which was dominated by LiUNA.

Low-Rise Unionization

Low-rise builders were unionized later than the high-rise builders but faced a similar situation in the 1970s. They followed a similar path as the high-rise builders, forming the Toronto Residential Construction Labour Bureau (TRCLB) and signing a similar collective agreement with LiUNA Local 183.

Over time, the GTA residential construction sector has grown and unified. With the Ministry of Finance projecting that more than 115,000 people will come to the GTA every year until 2041 to push the region’s population to 9.7 million people, it’s important that we keep the housing industry healthy for all future residents. It has unified as builders no longer specialize in either high- or low-rise units, instead offering new-home buyers low-, mid-, and high-rise homes.

Legislatively, the sector benefited from unique legislation in the late 1990s and early 2000s which saw the creation and enshrinement of specific residential provisions in the Ontario Labour Relations Act.

Demographics and Immigration

The construction labour force is currently experiencing a huge demographic shift, with an increasingly aging workforce. Within the next decade, there will be 261,000 workers exiting the industry due to retirements in Canada. In Ontario alone, 91,100 workers are expected to retire – around 20 per cent of the current construction workforce. As the population continues to age, we must ensure that we are replacing the retiring workforce with new, young entrants.
Immigration is also an important aspect in the demographic shift. Historically, the construction industry has relied on skilled immigrants and temporary foreign workers to sustain its workforce, with mass immigration following the Second World War to the 1970s from Europe (Ireland, Italy, Portugal, etc.). Many of these immigrants from Europe worked in construction, contributing to city building in Canada’s largest cities.

While immigration has helped as a traditional recruitment method – and recognizing that our aging workforce is on the verge of mass retirement – there is an urgent need to better understand and improve today’s current recruitment methods of construction workers.

With Canada’s population continuing to grow, construction workers are needed to build places for people to live and work. Construction workers are also needed to keep up with the pace of investment infrastructure.
Supplemental Appendix 2:
Concise Summaries of Eight Collaboration Success Stories

This chapter is intended to provide additional context and information as a brief overview of each of the collaboration success stories highlighted in Chapters 4 and 5.

Its content was supplied by each of these organizations for their respective entity’s description.

Building Opportunities for Life Today (BOLT)

Launched by Tridel in 2010, the original BOLT program was established as the BOLT Charitable Foundation in 2013. BOLT’s mission is to:

- Connect youth to careers in construction by creating awareness of the vast and diverse career opportunities in the construction sector; and
- Raise funds to provide under-resourced youth with scholarships, social supports, and skilled training opportunities to pursue careers in construction.

BOLT’s programs include:

- **Speak Outs** are events that are organized in the community and in schools. The trades and industry professionals share their personal experiences and valuable information about their jobs including educational, training and apprenticeship requirements.
- **Day of Discovery**: Under-resourced youth are invited to spend a full day exploring careers in construction. Participants visit George Brown College and participate in a hands-on activity before boarding a bus to spend most of the day at a live construction site at different stages of construction. Participants interact with the on-site trades and management staff.
- **Job Shadowing** Two-week experiences on a Tridel construction site are available to youth who attended the Day of Discovery and who have a keen interest in construction. Youth shadow the trades and management staff to gain a better understanding of the diverse opportunities available to them and they experience the on-site culture to determine if construction is a good fit for them.

To create two pathways to a career in construction BOLT provides:

- **Scholarships** that are awarded by the BOLT Charitable Foundation to students in financial need. Students must meet the eligibility criteria and must be enrolled in a construction related post-secondary program at the college or university level. Funds are provided to various community colleges and foundations that also award BOLT scholarships.
- **Skilled Training opportunities** through partnerships with programs like Hammer Heads (supported by the Central Ontario Building Trades) and Building Up. Successful completion of these programs lead to employment in the construction industry.
- BOLT also has a strategic partnership with the Toronto District School Board’s STEP to Construction Program.

BOLT’s core functions include its work connecting graduates of post-secondary construction programs and graduates of skilled training programs to employment. BOLT offers extensive mentoring and support.
to graduates to facilitate and sustain their employment and success in the industry.

**George Brown College**

The Angelo DelZotto School of Construction Management at George Brown College offers seven programs ranging from diplomas in Construction Engineering Technician to Honours Bachelor of Technology (Construction Management).

- Many of these programs feature experiential learning opportunities in working with leading-edge projects and the latest in construction building designs.
- Other advantages include a placement with a major construction firm during the 2nd Semester of the Residential Construction Management Postgraduate Certificate program
  - This specific program has a placement rate of over 90 per cent and over 90 percent of those placed remain employed after six months.

The School of Apprenticeship and Skilled Trades offers the education components required in apprentice training programs. George Brown is a Training Delivery Agent (TDA) that currently offers in-school educational components for several apprenticeship programs within the School of Apprenticeship and Skilled Trades including Construction and Maintenance Electrician, Millwright, Plumber, Sheet Metal Worker and Steamfitter.

George Brown’s Industry Liaison Office in its Centre for Construction and Engineering Technologies (CCET) provides all CCET students with opportunities to connect with industry partners. They include:

- **Job Postings**: an online job posting system, ‘GBCareers’, for employers, students and alumni; and
- **Career Fairs**: an annual event for CCET students and geared towards companies and industry partners who are actively recruiting students from CCET.
- **Direct Industry Connection**: through prioritized relationship with employers and industry associations.
- **Information Sessions**: These are for prospective students who are considering a career in Construction Management or the Trades. Sessions consist of tours labs, research facilities and classrooms as well as one-on-one discussions with faculty and current students to provide answers needed to make education decision.

High school outreach is extensive with George Brown’s recruitment activities. In addition to participating in the Ontario Colleges Information Fair with the other GTA colleges, this outreach includes:

- Hosting Information Sessions for Prospective Students or ‘Open Houses’ once a semester; and
- Marketing Liaison Team who visit high schools in their ‘catchment’ areas.

George Brown hosts two events in the summer, promoting Skilled Trades & Technology as well as Tech in the City. One is geared towards schools in Toronto and one is geared towards schools in York Region.

**Halton Industrial Education Council (HIEC)**

HIEC is an innovative not-for-profit social enterprise that supports workforce development and career
readiness in Ontario. For almost 30 years, HIEC has been working to build stronger connections between educators, employers and the students who will make up the future workforce.

HIEC has a long history of helping extend learning beyond the classroom and providing a conduit between small, medium, large employers, and employer associations with education. Its Programs and Services include the following facilities and activities.

HIEC’s **Career Development Lab** hosts 7000 grade seven Halton students every school year for its flagship Career Awareness Program, which encourages students to explore career options and the working world.

HIEC helps students prepare for the transition from education to work is by actively supporting experiential learning efforts across the province.

- The online community **EmployerRegistry.ca** is the only front-facing place in Ontario for employers to register their interest in connecting with young people through various forms of experiential learning.

HIEC’s second online community, **ApprenticeSearch.com**, provides vital support to Ontario employers and job seekers in the skilled trades.

- ApprenticeSearch.com works to help people interested in a career in the skilled trades navigate the often-complicated apprenticeship system.
- It is also a go-to resource for small and medium-sized businesses that lack the time and internal capacity to find qualified skilled trades candidates.

HIEC’s annual mentorship events, **Women as Career Coaches** and **Men as Career Coaches**, connect local students with adult career coaches and mentors from a variety of industries and careers.

**Humber College**

Humber offers multiple skilled trades programs including pre-apprenticeship (Ontario Youth Apprenticeship Program) in electrical and plumbing; apprenticeship training (e.g., Boiler Maker, Electrician, and Plumber; certificates (two semester programs – e.g., carpentry, millwright, and welding; and diplomas (4 and 6 semester programs including Building Construction Technician).

Most skilled trades programs are located in the 95,000 sq. ft. Centre for Trades and Technology (CTT) with shops designed as simulated worksites to facilitate real-life hands-on practice.

Humber has programs in both the manufacturing and IT areas and is working with industry to pilot initiatives that will pave the way for the increased application of technology solutions to construction sector labour market shortages.

Humber’s post-secondary construction-related programs in early 2019 had just over 2,200 full-time students enrolled. In its construction apprenticeship programs, Humber annually educates 1,700 students.
Humber’s outreach activities include information days to showcase its different programs combined with an opportunity to visit the trades’ campus. Other events include hands-on sessions for middle and high-school students and other networking opportunities to connect potential applicants and current students with employers.

Humber has extensive work placement and employment prospect enhancing programs such as:

- **WORK2LEARN** is one of the Faculty of Applied Sciences and Technology’s work-integrated learning experiences. This is a two-phase process whereby students first prepare for their job by attending workshops, search for a placement, then in phase 2 begin their placements.
- Other job search resources include a job portal for employers and students (easy access to jobs), [https://appliedtechnology.humber.ca/work-placement/job-search-resources.html](https://appliedtechnology.humber.ca/work-placement/job-search-resources.html).
- The Career Centre helps recent graduates/alumni find employment opportunities and offers guidance for those considering further educational pathways. It hosts job fairs and workshops including one-on-one guidance to students once they graduate.
- Work Placement Services hosts the annual Faculty of Applied Sciences and Technology Career Fair, an opportunity to network with people from companies and industries that interest students.

**LiUNA! Local 183 Training Centre**

The LiUNA! Local 183 Training Centre provides Apprenticeship, Construction Skills and Health and Safety training from five key campus sites: Vaughan, Cobourg, Toronto, Barrie and Kingston.

The LiUNA Local 183 Training Centre provides comprehensive training programs to apprentices, members and non-members.

- The goal is to provide every trainee with the highest standard of skills and safety training.
- The training provided includes the use of new materials, tools and techniques that are making their way onto job sites or are already present in the day-to-day construction work.
- The hands-on training is meant to simulate a true construction sector setting to ensure that contractors receive workers who are competent and productive.
- Examples of training include High Rise Forming, Residential Handyman and House Framing.

Through apprenticeship and skills programs, LiUNA! Local 183 Training Centre recruits and trains workers contractor partners. These Centres offerings include:

- Three apprenticeships (have Training Delivery Agent status) for Brick and Stone Mason, Construction Craft Worker and Cement Finisher.
- Extensive health and safety courses to all trainees and members.

LiUNA! Local 183 Training Centre hosts campus visits, introducing students, teachers, and guidance counsellors to training in the construction industry. The Training Centre hosts a number of events aimed at connecting secondary schools and elementary school students as well as faculty/administration with the Training Centre to help raise awareness of careers in the construction trades.
Other important activities are:

- Offering Ontario Youth Apprenticeship Programs (OYAP) to Peel, Toronto Catholic and Toronto students; and
- Strategic partnerships with the Skilled Trades Exploration Program (STEP) to Construction, Miziwe Biik, Kagita Mikam and JVS Toronto.

More information about its programs can be found at [www.183training.com](http://www.183training.com).

### Ontario Construction Careers Alliance

The Ontario Construction Careers Alliance (OCCA) was founded in 2009 as a jointly funded initiative by a coalition of Contractor Associations that was expanded later with the addition of Ontario’s Ministry of Transportation, Metrolinx, and LiUNA Canadian Tri-Fund. Its activities promote the career potential of the heavy civil construction industry to high school students and their parents.

OCCA’s creation reflected the need for career promotion in the civil infrastructure trades to help address the growing skills gap in this specific sector of the construction industry. OCCA focuses on promoting careers in the roadbuilding, sewer and watermain, and bridge and foundation construction sectors through:

- In-school classroom presentations in high school civics and shop classes; and
- Participation in career fairs across Ontario.

Each year, OCCA directly engages thousands of students, informing them about the career opportunities, wages, prerequisite courses, and career pathways into these specific construction sectors.

Together with local construction associations, OCCA’s activities include “Construction Day” events with high school touring construction sites to tangibly experience projects in person. Local contractors provide worksites for these tours as well as personnel to explain the work and answer questions. Students’ in-person experience at these events provides a better awareness and understanding of construction work.

In 2018, OCCA sought to expand its social media presence to engage students and parents on new platforms to connect better with the next generation of workers. Future efforts will include partnering with other trades promotion bodies to help convey information about the merits of careers in heavy civil construction trades across Ontario.

### Ontario Youth Apprenticeship Program (OYAP)

Any full-time high school student participating in Co-operative Education (Co-Op) where they are demonstrating the skills and duties of a skilled tradesperson at their placement is by definition an OYAP Student. There are three OYAP options:
• **Regular OYAP:** open to full-time students aged 16 and older who have completed a minimum of 16 credits, this introductory general program offers placement in one of over 120 trades approved under Ontario legislation. Regular OYAP introduces students to job environments and specific trades, but has no connection to a Registered Training Agreement and no credits apart from co-op credit(s).

• **Specialized OYAP:** this more focused year-long OYAP program offers multiple Technological Education courses in a key sector, combined with multiple Co-op credits in that key sector. Only certain schools offer Specialized OYAP from year to year. This combination of multiple Tech credits allows for deep learning around tools, materials, and safety considerations related to the key sector; when followed by multiple Coop credits with a strong placement, this program often leads to paid employment for our students upon completion/graduation. Specialized OYAP typically occurs in Grade 12; that said, a number of students doing their so-called “5th year” return to do this program.

• **Accelerated OYAP:** this Semester 2 only-program is unique in that it includes MTCU-recognized Level 1 Apprenticeship curriculum, combined with multiple Co-op credits with an Employer (Sponsor) who signs the student on with a Registered Training Agreement. This program is only open to students who have completed all other requirements for their Ontario Secondary School Diploma, with a minimum of 26 credits completed, including all Compulsory courses; successful completion of OSSLT; successful completion of 40-hours Community Service. Students complete Co-op in the 2nd semester that combines Apprenticeship Level 1 in-class training with hours completed at a Co-op employer. These programs are offered in collaboration with local colleges or union training centres.

For more information about OYAP generally in Ontario, see [www.oyap.com](http://www.oyap.com). Various school boards have their own region-specific websites. For example, see [www.oyaptdsb.com](http://www.oyaptdsb.com).

**Specialized Trades Exploration Program to Construction**

(STEP to Construction; formerly known as Construction Trades Exploration Program [CTEP])

STEP to Construction is a unique semester-long Toronto District School Board program, located at Northview Heights Secondary School and open to any student in the Toronto School District that combines:

• Instruction at Northview Heights, George Brown and many union training centers.
• Job shadowing and other activities at construction worksites.
• Students remain registered at their home school and earn 5 high school credits and one college credit known as a Dual Credit.
• Provide students direction and support to establish essential skills and success.

Through a full-day cooperative education semester, STEP to Construction participants:

• Rotate through Management and multiple skilled construction trades throughout the semester, spending approximately 1 to 2 weeks with each trade.
• Complete college credit at George Brown College in Construction Health and Safety by taking a weekly class.
• Students:
  – Receive certifications in Traffic Control, First Aid / CPR, Trenching, Confined Space, Basic Supervision.
  – Complete pre-placement safety and skills training, receiving certification in Working at Heights and WHMIS, On Line 4 STEP Awareness, Young Worker Awareness.
  – Participate in skill development opportunities through workplace simulations at union training center visits in carpentry, plumbing, electrical, construction craft worker, sheet metal, hydro line worker.

STEP to Construction allows students to experience multiple trades before choosing and continuing education in one trade.

• Each Student is placed at a specific site with a reputable Builder/General Contractor and reports to the site supervisor.
  – Students often complete their semester at one work site, shadowing and assisting each different trades for 2 weeks at a time.
• Upon completion of the program:
  – 50%-60% of students change their minds from the original trade they were thinking of to another trade they experienced during the program and see as better suited now;
  – Many students pursue apprenticeship through the Ontario Youth Apprenticeship Program or head directly into the construction workforce through connections made on-site; and
  – Many students gain opportunities for part time and/or full time employment as well as better equipped to be considered for full time work or union positions.
Notes

Executive Summary


Chapter 1

12 See the definition and listing of the seven sectors of the construction industry set out in Ontario’s statute 95|01, section 126 (1). https://www.ontario.ca/laws/statute/95l01
14 Ibid.
15 Through 2018, skilled trades are viewed as the hardest positions to fill in North America, according to the surveys of the ManpowerGroup. This is the 11th year running that these occupations have had this assessment. (Cited in Jon Callegher and Benjamin Millard, “Trading Up: Why the Future of Education in Canada must be Skilled” (Ottawa: Social Sciences and Humanities Research Council-Community and College Social Innovation Fund Full Report, 2018) p, 6; and CivicAction, Now Hiring: The Skills Companies Want that Young Canadians Need, p. 18. https://www.civicaction.ca/wp-content/uploads/2018/12/SkillsConnect_NowHiring_Dec_2018_DIGITAL.pdf. 18. While technical aptitude is cited as the leading reason for this challenge, it is clear that “not enough people are signing up to be adequately trained for work in the Trades.” Cited in JobTalks, Trading Up, p. 6.
16 See the annual salary ranges for 45 different construction trades from starting levels to the much higher levels attainable after years of experience in the presentations of the Ontario Construction Careers Alliance (OCCA) to young people. See also the salary ranges available on each career profile on OCCA’s website, www.constructu.ca
17 Tradespeople report feeling 2.5 times more positive emotions than the rest of working Canadians, and self-report over 3.5 times as many positive personality traits than negative ones. Workers in the Skilled Trades also have very positive attitudes toward work and a strong desire to advocate for their own trade. See JobTalks, Trading Up, p. 18.
For example, BEworks, a leading consulting firm in BE advice and research, is a longstanding practitioner of BE hiring approaches for its own staff and as a product/service in advising other organizations.


Musset & Mytna Kurekova, Working it Out.


Ibid.


ideas42 has applied BE to various non-profit activities, especially fundraising. In particular, see https://www.ideas42.org/wp-content/uploads/2016/06/Behavior-and-Charitable-Giving_ideas42.pdf

Commonly known as the Nobel Prize in Economics, the official name for this award is the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel.

Chapter 2


See for example, Institute for Competitiveness & Prosperity, Teaching for Tomorrow: Building the necessary skills today, p. 5.

New apprenticeship registrations have dropped in recent years, falling back to 2003 levels in recent Statistics Canada data. Cited in Ibid, p. 36.


Nearly 100% of Canadian youth aged 15 to 24 use the Internet daily or own their own smartphone, with this use and ownership broadly similar across all provinces and all household income groups. “Nearly half of 16 to 24 year olds participate in real-time discussions on the Internet, compared with less than 10% of “older Canadians”. Reported in Statistics Canada, “A Portrait of Canadian Youth”, February 7, 2018 https://www150.statcan.gc.ca/n1/pub/11-631-x/11-631-x2018001-eng.htm


Benartzi, The Smarter Screen: Surprising Ways to Influence and Improve Online Behavior, pp. 72-73.

Halpern, Inside the Nudge Unit: How Small Changes can make a big difference, pp. 74-75.


58 Ibid.

59 See World Bank, Mind, Society and Behaviour, p. 115.

60 Ibid.


64 World Bank, Mind, Society and Behaviour, pp. 11, 62-63.

65 Soman, The Last Mile: Creating Social and Economic Value from Behavioural Insights, pp. 7-12.


68 Thaler & Sunstein, Nudge, pp. 3-11.


70 World Bank, Mind, Society and Behaviour, p. 28.

71 Thaler & Sunstein, Nudge, p. 6.

72 Ibid.

73 One study found that once other determinants of organ donation are accounted for, cadaveric donation rates are 25% to 30% higher in presumed consent countries with this default nudge. See A. Abadie & S. Gay, The impact of presumed consent legislation on cadaveric organ donation: A cross-country study, Journal of Health Economics 25 (2006) 599–620

74 Halpern, Inside the Nudge Unit, pp. 70-71.


77 Hertwig, “When to Consider Boosting”, p. 158.

78 Ibid.

79 Halpern, Inside the Nudge Unit, pp. 60-61.

80 Ibid, pp. 62-149.


83 Mukherjee, The Internet Trap, p 9.
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Chapter 3


RBC, Humans wanted, p. 34.


RBC. Humans wanted, pp. 1-44.


Eby et al., Predictors of success in the era of boundaryless career, pp. 689-708; and Taber & Blankenmeyer, Future work self and career adaptability in the prediction of proactive career behaviors, pp. 20-27.


Ibid.


While most non-college training delivery agents (TDAs) are union centres, there are also other non-college TDAs such as Durham District School Board, University of Guelph, and Toronto Hydro. See [https://www.eo-geohub.com/datasets/5f7567c5eb544254b03f1c519beaa7e_0](https://www.eo-geohub.com/datasets/5f7567c5eb544254b03f1c519beaa7e_0)

Musset & Mytna Kurekova, *Working it out: Career guidance and employer engagement*, p. 47 and 58; and Dietsche, Career planning in Ontario grade 10 students: Counsellor perspectives.

Although secondary school course choices include choosing elective courses for credit, most relevant for later career paths is whether they pursue academic or applied level for required courses such as math. These decisions begin in Grade 9, which some have argued are too early. See, for example, D. Hamlin & D. Cameron, *Applied or Academic: High Impact Decisions for Ontario Students*, (Toronto: People for Education, 2015)


Ibid, p. 58.

Ibid, p. 15.

Ibid, p. 47.

Ibid, p. 30; and Chong, Evaluating engineering career resources available within the Ontario high school system.

Lucas, Socializing messages in blue-collar families: Communicative pathways to social mobility and reproduction.

See preliminary results from survey of construction tradesworkers on the importance of friends in choosing construction trades in Job Talks. “Retaining Employees in the Skilled Trades” Check-in Presentation, November 28, 2018.


Ibid, pp. 37, 44.

Chong, Evaluating engineering career resources available within the Ontario high school system.

Ibid; and Dietsche, Career planning in Ontario grade 10 students: Counsellor perspectives.

Dietsche, Career planning in Ontario grade 10 students: Counsellor perspectives.


Musset & Mytna Kurekova, *Working it out: Career guidance and employer engagement*, pp. 69, 74, 77; and Dietsche, Career planning in Ontario grade 10 students: Counsellor perspectives.


135 Institute for Competitiveness and Prosperity, *Teaching for Tomorrow*, pp. 35-37


137 Chong, Evaluating engineering career resources available within the Ontario high school system; See also Job Talks and Q.i. Value Systems Inc, “Report on Retaining Employees in the Skilled Trades”, (Vaughan, ON: Residential Construction Council of Ontario (RESCON), 2019).


141 Benartzi, *The Smarter Screen*, pp. 40, 73.


147 See also the tradesworker survey results and findings in Job Talks and Q.i. Value Systems Inc, “Report on Retaining Employees in the Skilled Trades”.

148 H. Inanc, K. Needels & J. Berk. Gender segregation in training programs and the wage gap. *Mathematica Policy Research*, 2017; and various interviews by the authors


151 Lehmann et al, Youth apprenticeships in Canada, pp. 572-589.


154 Lehmann et al., Youth apprenticeships in Canada, pp. 572-589

155 Not only did the number of new apprenticeship registrations drop since 2012, but the vast majority of new applicants for apprenticeships are age 24 and older. See Institute for Competitiveness and Prosperity, *Teaching for Tomorrow*, p. 36.

156 Taylor, The contradictory location of high school apprenticeship in Canada.


Ibid.


Ibid, pp. 49, 51.

Ibid, pp. 33-41, 53.

Confidential interviews


OECD, 2002, cited in Nadon et al., 2016


Chong, Evaluating engineering career resources available within the Ontario high school system

Ibid.

RBC, *Humans Wanted*, p. 34

Chong, Evaluating engineering career resources available within the Ontario high school system

RBC, *Humans Wanted*, p. 34.


S “Whether these skills are used to order supplies, take measurements, make calculations, manage money, or compare data, math is an essential skill in the workplace…” from http://www.red-seal.ca/newsletter/2014j.5ly_m.1th-eng.html

Musset & Mytna Kurekova, *Working it out: Career guidance and employer engagement*, p. 44

Dietsche, Career planning in Ontario grade 10 students: Counsellor perspectives.

Taylor, The contradictory location of high school apprenticeship in Canada; Musset & Mytna Kurekova, *Working it out: Career guidance and employer engagement*, p. 31; and G. Harild & L. Sharratt “From good to great: Recalculating the route to career readiness through a pathway lens”, *Principal Leadership*, 15, (2015, March), pp. 54-57, p. 56

Harild & Sharrat, “From good to great: Recalculating the route to career readiness through a pathway lens”, p. 56.

Lucas, Socializing messages in blue-collar families: Communicative pathways to social mobility and reproduction.

Chong, Evaluating engineering career resources available within the Ontario high school system; and Musset & Mytna Kurekova, *Working it out: Career guidance and employer engagement*, p. 30

Various primary interviews

Musset & Mytna Kurekova, *Working it out: Career guidance and employer engagement*, p. 69

Ibid, p. 53

Ibid, p. 54

See various studies cited in *Ibid*, p. 54

The success of Earth Rangers’ website in attracting, engaging and motivating children, especially those aged 6-11 years, to help protect the environment and preserve wildlife is instructive. See https://www.earthrangers.com/
Chapter 4

191 Institute for Competitiveness & Prosperity, Teaching for Tomorrow: Building the necessary skills today, p. 5.

192 Musset & Mytna Kurekova, Working it out: Career guidance and employer engagement, pp. 9-12 and 68-69.

193 For example, see the extensive information about construction trades’ compensation in HIEC’s Career Centre and OCCA’s classroom and school presentations in this regard.

194 Musset & Mytna Kurekova, Working it out, p. 59.

195 See http://www.scwi.ca/

196 See http://www.edu.gov.on.ca/morestudentsuccess/shsm.html

197 See the preliminary survey results of construction tradesworkers on the importance of friends in choosing construction trades in Job Talks. “Retaining Employees in the Skilled Trades” Presentation, November 28, 2018.

198 Musset & Mytna Kurekova, Working it out, p. 41.

199 In the late 1990s and early 2000s, Statistics Canada and its partners were reportedly moving to undertake a variety of important longitudinal surveys, including youth in transition from school to work. Unfortunately, several factors combined to stop this critical data collection and other important survey initiatives. See Wayne Smith, “We deserve to know ourselves better”, The Globe and Mail, January 28 2019, p. A13.

200 For example, 76% of youth aged 18-24 searched about job information online, while 51% of those aged 15-17 did so. See Canadian Federation of Independent Business, Hire Education: Connecting Youth and Small Business for the Jobs of Today (Canadian Federation of Independent Business, 2018), p. 6.

201 Benartzi, The Smarter Screen, pp. 39-44; and Mukherjee, The Internet Trap, pp. xiv, 6-35.


203 See https://www.youtube.com/channel/UCsIWDqEMDKOYm4BO30Edq6g

204 Musset & Mytna Kurekova, Working it out, pp. 48, 56.

205 RBC, Humans wanted: How Canadian youth can thrive in the age of disruption (Toronto: RBC, 2018), p. 34.

206 In 2016-17, 46% of students had some previous post-secondary education, 29% of whom previously completed a college and/or university credential (16.5% university graduates). See Colleges Ontario, Student and Graduate Profiles 18: Environmental Scan 2018, p. 17, https://www.collegesontario.org/research/2018_Environmental_Scan/CO_EnvScan_2018_PROFILES_WEB.pdf

207 Mukherjee, The Internet Trap, p. 9.

208 See https://www.youtube.com/channel/UCsIWDqEMDKOYm4BO30Edq6g

209 Harild & Sharratt “From good to great: Recalculating the route to career readiness through a pathway lens”, pp. 54-57.

Chapter 5


211 CivicAction, Now Hiring: The Skills Companies Want that Young Canadians Need, p. 19.

212 One analysis of future job demand estimated that only 26% of projected non-management job openings will require university education while 37% will require college or apprenticeship. It stated that “More students need to consider college and apprenticeships as viable career pathways”. See Institute for Competitiveness & Prosperity, Teaching for Tomorrow, p. 34.
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