



**FOUNDATIONAL SKILLS NEEDS
AND WHAT SOCIAL SCIENCES
AND HUMANITIES NEED TO
KNOW.**

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COLLABORATIVE

IMPACT RESEARCH. DISCUSSION PAPER.

FOUNDATIONAL SKILLS NEEDS AND WHAT SOCIAL SCIENCES AND HUMANITIES NEED TO KNOW.

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The/La Collaborative is a network of researchers based at McMaster University dedicated to creating new models of knowledge mobilisation and talent-building that put Social Sciences and Humanities knowledge at the heart of the community. It offers social sciences and humanities researchers opportunities to leverage their know-how to engage, create, and demonstrate the value of their disciplines while meeting their community's needs meaningfully and with relevance.

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TABLE OF CONTENTS

SUMMARY.....	5
FOUNDATIONAL SKILLS NEEDS. TAXONOMICAL CONSIDERATIONS.....	7
A NOTE ON TAXONOMIES.....	10
REAL WORLD-READY SSH GRADUATES.....	11
A FRAMEWORK TO ASSESS PERCEPTIONS OF NEEDS.....	13
QUALITATIVE AND QUANTITATIVE ANALYSIS OF SKILLS-TALK.....	16
UNDERSTANDING, ARTICULATING AND COMMUNICATING THE VALUE OF TALENT.....	22
WHAT SOCIAL SCIENCES AND HUMANITIES NEED TO KNOW	24
MISSED OPPORTUNITIES.....	30
NOTES	33

SUMMARY. FOUNDATIONAL SKILLS NEEDS AND WHAT SOCIAL SCIENCES AND HUMANITIES NEED TO KNOW.

NEEDS VS PROPOSITION.

We draw a picture of employers' claims about skills needs and of the looked-for organisational-level behaviours they perceive these skills as serving. We then apply the same framework to draw a picture of social sciences and humanities attempts to articulate how these skills and know-how are fostered in their programs, and we assess the alignment between perceptions of "needs" and "proposition".

In this report, we compare what we know about stakeholders' perceptions of the foundational skills employees need, and the perceptions of university-based social sciences and humanities (SSH) programs regarding their own capacity when it comes to building these competencies in SSH graduates. The conclusion we draw is that SSH's understanding of what employers need is not aligned with what employers say they need. This misalignment however may not reflect a deficit on the part of social sciences and humanities, but rather a missed opportunity for them to articulate their value.

We break down the research question into three problems:

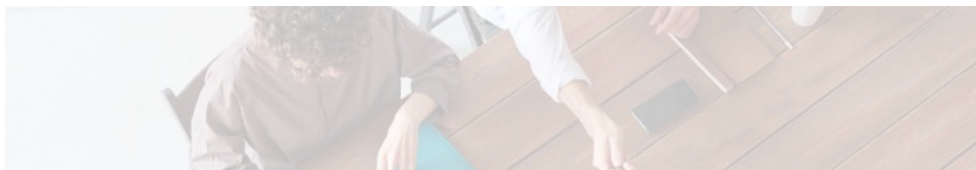
1. **NEEDS:** How do employers understand and value foundational skills and what are the assumptions they make about what these skills are and how they are connected?

2. **PROPOSITION:** What are the skills and capabilities university-based SSH programs generally advertise their programs to foster? Are the skills they advertise the only ones they effectively foster?

3. **ALIGNMENT:** Do SSH programs generally understand what skills employers want and the extent to which they can contribute these skills to students' education?

The objective, while modest, required substantial new research. The conclusions we draw from the data we gathered provide insights indispensable to meaningfully engage postsecondary education stakeholders who seek effective ways to address the concerns of public and private sector employers regarding talent-building. While the research was produced to answer questions that concern SSH-relevant academic policy more specifically, it draws conclusions and makes proposals which implications extend to all areas of academic knowledge.

One significant conclusion we draw, and one that should be at the focus of any attempt to understand how to build talent in PSE, is that foundational skills tend to be perceived to cluster and play reciprocal roles – they create more value working together than they would individually – around different types of organisational-level behaviours that are presumably as desirable in research contexts as they are in industry contexts. These organisational-level behaviours predominantly revolve around outcomes such as innovation and adaptability, and ethical, social and emotional intelligence. By making explicit the connections between skills we find in the literature, and by pointing to the way they are seen to create capacity within organisations to increase achievement and growth, we aim to offer deeper insights into industry trends, talent development in the academic context, and what these skills are and how they work.



FOUNDATIONAL SKILLS NEEDS. TAXONOMICAL CONSIDERATIONS.

A number of recent reports and news articles cite prominent industry leaders who associate foundational skills – those also referred to as “soft,” “social,” “human” and/or “transferable” or “global” competencies – with SSH, where they see these skills being best cultivated.^{1 2 3} They generally concur to make a number of assumptions, including the following two:

1. foundational skills are what makes possible what has been referred to as “lateral” and “design” thinking.
2. when complemented by the acquisition of “technical” or “specialised” knowledge, foundational skills augment an individual’s or a team’s capacity in fields associated with technological innovation, especially those addressing today’s main global challenges such as AI, genomics, and the climate crisis.

Whether or not these claims amount to more than educated guesses, this is good news for SSH graduates who may, in the meantime, benefit from the hype. This is all the more relevant in that, over the last few years, the notion that we face an imminent skills shortage and that more needs to be done to develop talent has become ubiquitous in the grey literature. Indeed, the private, not-for-profit, and governmental sectors often express needs for talent whose fulfilment they expect to be the responsibility of the postsecondary (PSE) sector. In Canada, the diagnosis of a putative “skills shortage” or “skills gap” is one of the motivations behind large-scale government initiatives such as ESDC’s Future Skills Centre, whose impact on PSE has yet to be measured.⁴

In these contexts, a “skill” is generally understood broadly as the capacity to carry out definite tasks with a high level of aptitude. Hence, almost any aspect of the way we navigate education, citizenship, and employment can be described as a “skill,” whether it mobilises psycho-motor or physical capacities and command, or requires specific cognitive toolkits and abilities, and thus extensive task-specific training.

Indeed, given the broad and somewhat flexible range of application of terms such as 'skill' and 'competency,' terminology is often seen as a concern and attempts have been made to distinguish "skills" from other factors underpinning practical capability.⁵ In what follows, we put little weight on these nuances and use 'skills' interchangeably with other cognates: talent, competencies, know-how, capabilities, abilities. In our opinion, terminology is not the problem. The real challenge is not to find the right word, or the right definition for any specific skill, but to understand the generalisable assumptions people make about skills when they talk about them, assumptions that concern the way skills are believed to co-exist and to be mobilised in organisations to achieve determinate aims.

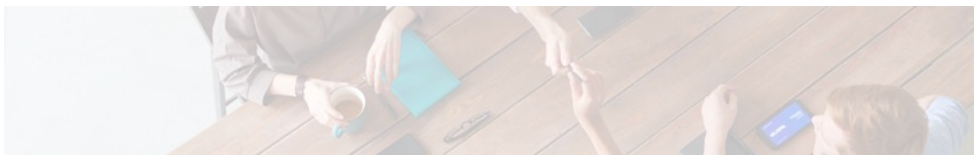
TO EXERCISE A SKILL, AN INDIVIDUAL NEEDS the right environment. The ability to fulfil a specific task can be affected by psychological or physical attributes, interests and values as well as the context (social, institutional, cultural) in which talent is expected to be deployed. There is no adequate treatment of skills-building or talent needs without consideration to environmental factors, which also extend to access, inclusion, and equity.

The definitional attempts and descriptions of skills compiled in our database are those that reflect positioning on talent in the grey literature. Whether or not the claims made in the literature are always informed by expert knowledge and research on the topic is not immediately clear. The situation is complicated by the fact that while the skills identified as foundational are the subject of a vast academic literature, this literature is rarely cited. There's a case to be made that uses and definitions seem to converge. But current research in education and/or cognition is creating growing awareness of the fact that what skills like "critical thinking" amount

to is not self-contained: it is likely to be a set of reciprocal dispositions, cognitive abilities and cognitive toolkits whose effectiveness depends itself largely on environmental factors that include organisational structures and cultures.⁶

There is widespread agreement that some skills are “essential” or “foundational,” as opposed to technical and occupation-specific. Here again, classificatory and taxonomical details vary in more or less significant ways. Literacy and numeracy, critical thinking, problem solving, causal reasoning, and intercultural awareness often make the lists, especially in educational policy contexts.⁷ And the literature is pervaded by attempts to draw other types of distinctions, e.g. between skills and toolkits⁸ or between skills and competencies. Here we oppose “foundational skills” to occupation-based technical skills and knowledge acquired around professional training such as business, law, engineering, and nursing/medicine. Likewise, while they might be required for success, foundational skills are irreducible to domain-specific cognitive toolkits often acquired as part of professional development, including, for instance, agile project management, relationship-building or leadership. Foundational skills are the ones the possession of which recent literature increasingly and indeed almost unfailingly depicts as indispensable not only for success in the workforce, but for effective citizenship.

Foundational skills are generally understood to be distinctively “human,” “machine- or AI-resistant,” “social,” “transferable” and “essential.”⁹ And while they are at times called “soft skills”, it has been argued that they are among the hardest to cultivate.¹⁰ The consensus is that foundational skills are difficult to teach, or at the very least that it’s difficult to know exactly how to successfully teach them: they initially develop in early childhood education and are honed and specialised over time throughout an individual’s educational pathway and beyond.



A NOTE ON TAXONOMIES

What we propose is not a new taxonomy. We propose an analytical framework for understanding stakeholders' perceptions of their needs, strengths, and their implicit theories as to which skills drive productivity. We proceed in full awareness of the existence of a number of taxonomic efforts in connection to skills and competencies. Our research has its foundation in a preliminary review of such taxonomies.

O*NET provides for the most sophisticated taxonomical example: a database developed by the U.S. Department of Labour with the mission of defining metrics and gathering data for the measurements of labour needs and individual ability and aptitude for specific occupations. Beginning in pilot form in the late 1990s, early O*NET iterations were derived from aptitude testing in industrial and organisational psychology. Today, O*NET uses a taxonomy of 35 competency factors, under 7 rubrics. It distinguishes "skills" (defined as developed capacities) from a number of other competency factors, including:

1. abilities (enduring cognitive, physical, psychomotor and sensory attributes)
2. knowledge (sets of facts and principles)
3. interests or preferences
4. context
5. values

O*NET is a muster for taxonomical methodologies and classificatory work in the context of database ontologies: it is comprehensive, and many subsequent studies and reports have drawn directly on its rubrics and classificatory methods. To the extent that our objective is to assess the nature of employers' understanding and perception of these skills with as little conceptual imposition as possible, we reference O*NET only insofar as it is in turn referenced by employers.¹¹

REAL WORLD-READY SSH GRADUATES

Testimonies to the value of foundational skills in the workplace, in everyday life, and for the future of citizenship and economic productivity abound.^{12 13} University-based professional development programming's contribution to foundational skills-building is the subject of a growing literature, whether it aims to describe what exists, or to prescribe what should be.¹⁴ What makes foundational skills and know-how attractive to employers is the belief that skills like critical thinking, creativity, empathy and the like are in essence perennial, transferable and cross-disciplinary, rather than tailored specifically for one specialised or technical task. Employers value these skills because increasingly frequent market disruptions require organisations to be nimble: an organisation may suddenly need to adapt, and this is only possible if their employees have a foundation on which to build new skills as they transition and the organisation pivots.

Interestingly, almost all recent publications on the future of work, and arising recommendations regarding the comparative desirability of undergraduate majors by eminent business people and industry trend-setters, have shifted from STEM to SSH. While SSH education enrollment is almost everywhere in decline and STEM education enrollment is steadily increasing, 92% of employers report that soft skills “matter as much or more than hard skills.”¹⁵ The implication seems to be that there is an incongruity here that would be resolved by an increased number of SSH graduates.¹⁶

Recent statistics regarding earnings of SSH and STEM graduates that build on longitudinal studies have contributed to debunk the belief that STEM undergraduate programs lead to largely more advantageous career-options than those in the SSH.¹⁷ This turn of events is of course interesting for prospective and current SSH students. But comparative earnings data

is evidently not helpful to them when they are asked to articulate the value of their SSH degrees to employers.

For graduates and post-graduate students alike, and for those within PSE whose job it is to advocate for SSH and document the value of their SSH programming, what is needed are nimble conceptual tools they can use to articulate and communicate the value of the skills acquired over the course of a given degree.¹⁸ And this presupposes that they understand the foundational skills employers value, and how they connect these skills to success and growth in their organisation, so that graduates can articulate how they can meet needs that are often unique, and that are likely to shift over time.

WHAT ARE FOUNDATIONAL SKILLS?

And what are employers' understandings of the way in which they contribute to organisational success? We draw our answer from a survey of employers' perceived needs in the grey literature: foundational skills are those required for individuals to foster organisational-level behaviours associated with increased productivity.

Because we are talking about *perceived* needs and values, definitional adequacy is not the primary concern. The question that matters is not which definition is the correct one, but why skills like problem solving are seen as essential. There are a number of assumptions employers make about the value of skills like critical thinking. These assumptions are very often tacit: on the one hand critical thinking is typically seen to work together with other skills, and on the other hand, these clusters of skills are implicitly associated with organisational-level behaviours that are seen to

promote organisational goals – e.g. critical thinking and problem solving are typically seen to be catalysts for innovation.

Answers to questions such as: What does critical thinking involve? What are the other skills with which it clusters? And what are the coveted organisational-level behaviours and outcomes to which it contributes? tend to vary slightly from one source to another. The concerns for these issues also may be tacit - or nonexistent. Some publications, like the British Academy's *The Right Skills* (2017) emphasise the role of connected aptitudes (e.g. creativity) and psychological disposition (i.e. attitude) while others leave those out. This example suffices to show that there are different levels of granularity at play, as well as different motivations and goals when talking about talent, skills and competencies. As a result, depending on the sources they draw on, university stakeholders eager to cater to demands may base program development and strategic initiatives on representations that are partial and/or ignore more or less sophisticated pictures of talent.

A FRAMEWORK TO ASSESS PERCEPTIONS OF NEEDS.

What we propose is an analytic framework: we provide conceptual tools to understand employers' priorities, and to articulate the value of university-based programs' learning objectives (whether they are part of curriculum, or co-curricular and focused on professionalization) when it comes to talent. This analytic framework is designed to go beyond a widespread practice of drawing more or less expansive lists of *desiderata*. Our approach reflects the fact that skills don't evolve in a vacuum: stakeholders perceive them as connected and serving different types of organisational purposes. The reason why skills are seen as valuable is that they are seen as a means to an end. In an industry setting, they are seen to contribute to organisation-level behaviours that drive achievement. They are also

understood to play complementary, organically evolving roles, although how this happens is rarely explained or indeed explicitly tackled.

THE FRAMEWORK WE INTRODUCE COULD BE EXPANDED and used as a meta-cognitive toolkit to help articulate know-how, a device especially useful in a context where workforce disruptions are increasingly frequent. An individual equipped to understand how the skills they have honed contribute to advancing organisational goals, would presumably have the literacy necessary to articulate how those skills can be transferred to another context.

An adequate representation of employers' self-perceived skills needs requires that the analysis go beyond any one singular study and/or taxonomical proposal and instead focus on convergences that emanate from skills-talk when it comes to stakeholders' understanding of connections and purposes in general. Mere definitions of, for instance, "critical thinking" or "creativity" have limited import or usefulness on their own. Basic economic theory dictates that what is needed in order to make decisions about policy or investment in a context where PSE seeks to accommodate the new "skills-economy," is an understanding of what employers think they need, but also of why they think they need it.

To achieve this aim, we needed a clearer picture of what lies behind the data, terminology, definitions, and claims associated with stakeholders' needs and interests when it comes to claims about skills like critical thinking or creativity. A cursory survey of the literature had allowed us to observe that skills are rarely seen as desirable on their own – they are typically discussed in clusters – and with this in mind, we wanted to make explicit the more or less sophisticated assumptions stakeholders make when they talk about foundational skills, and in particular their more or less tacit beliefs about their interconnections and purposes.

Two observations drive our analysis. First, in the literature, individual skills are generally *described in clusters or connected to reflect reciprocities*. Second, these skills or clusters of skills are valued because *employees who have the desired foundational skills are generally perceived to participate in organisational-level behaviours* that are seen to drive achievement. This idea, which is sometimes evoked in the literature, needs to be at the heart of discussion around skills:

Employers also tell us they need workers with foundational skills such as communication, teamwork, critical thinking, creativity and problem solving in occupations across all sectors of the economy. They see these skills as integral for productivity and well-functioning workplaces.¹⁹

Our data illustrates the significance of this idea: we draw on a synthesis of the literature to describe the way in which foundational skills, their relationships and their purpose/value are conceived by private and public sector stakeholders. We offer visual models of the way in which, in the literature, skills are connected to each other, and connected to organisational-level effectiveness drivers.

By an “organisational-level behaviour” we mean a feature of organisational processes and infrastructures. The level at which an organisation is capable of realising a specific behaviour depends on the level of engagement of the relevant participants, which can be seen in part as a function of whether they have or realise certain skills as individuals. Foundational skills such as effective communication, teamwork, critical thinking, creativity, and problem solving are necessarily involved, not only to streamline organisational processes, including productivity, but to make them possible in the first place. Organisational-level behaviours are “greater than the sum” of participants’ individual skills. For instance, all other things being equal, when team-members communicate effectively, have a high capacity for self-management and are aware of cultural differences, the team is less likely to experience breakdowns that can impede innovation or other aspects of organisational flow. But an individual cannot be “capable of innovation” in the same sense, all on their own.

Current discussions would benefit tremendously from an evidence-based, qualitative analysis of the way in which the individual skills of members

contribute to fostering desirable organisational-level behaviours. This in turn requires that we do away with some basic confusions. For instance, while adaptability is described in the literature as a desirable quality of both individuals and in organisations, what this means is different in each case: even when it is put forward as an individual skill, adaptability tends to be analysed in terms of other, more basic skills.²⁰ Moreover, whether an organisation is capable of adapting to change is not a function of its employees' capacity to adapt to new situations. These are admittedly fine conceptual distinctions, but they are crucial to making sense of the relevant data down the line.

WHY SHOULD WE CARE ABOUT WHAT EMPLOYERS *BELIEVE*
they need? Should we instead focus on what they in fact need? People make decisions on the basis of what they believe, even when it's wrong. In order to modify their beliefs, people need compelling evidence for their error. But in that case too: we need to know what they believe. We're aiming for a representation of those perceptions which, while they may further require both empirical research and conceptual engineering to reflect what is in fact needed, can help us to formulate empirical hypotheses that can be tested.

QUALITATIVE AND QUANTITATIVE ANALYSIS OF SKILLS-TALK

What we propose as a first step is an understanding of the implicit theory of skills that emerges from the literature on current and future talent-needs. We decided to analyse the literature, as opposed to use interviews and surveys, so we could also ponder previous more or less successful

skills taxonomies and definitional schema that have served the description of such needs. The analytical framework we developed is meant to capture and represent actual skills-talk: it is drawn from actual discourse practices with as little conceptual imposition as possible.²¹

What often remains tacit in the literature is the fact that organisational capacities such as innovation only materialise when the relevant team-members have certain sets or subsets of skills, including foundational skills, in ways that are complementary and reciprocal. An organisation that succeeds in being adaptable and achieving innovation – an organisation that exemplifies this behaviour – is seen positively. This distinction between, on the one hand, the skills an *individual* must have and, on the other hand, the sort of *organisational-level behaviours* to which the combined, overlapping skills of individuals contribute to a given context is particularly crucial and illuminating.

Our working hypothesis is that this two-level model – individuals' skills vs organisational behaviours – is essential to understand skills-needs. Arguably, different employers have different conceptions of the skills individuals must have to contribute to an organisation's outcomes, or they may not see the same organisational-level behaviours as the primary driver of achievement in their industry. However, an employer who lacked any understanding of the kinds of organisational-level behaviours that drive achievement, or of the kinds of skills employees must have to foster these behaviours, would not have a principled way of hiring, or indeed to predict their labour needs.²²

All in all, we identified 12 competencies stakeholders understand to be foundational, and whose importance seemed to be emphasised most forcefully and consistently. They include the usual suspects (for instance: critical thinking, creativity, complex problem solving, analytical skills, people skills, teamwork) and some others which were also referenced frequently, which are somewhat less expected but all the more informative (such as self-management, judgement, and integrity). In our ontology, we include the following foundational skills (alphabetically):

1. analytical skills
2. capacity for continuous learning
3. critical thinking
4. creativity
5. cultural and intercultural awareness
6. effective communication
7. integrity
8. judgement
9. people skills
10. problem solving
11. self-management
12. teamwork



When stakeholders talk of these competencies, they typically group them in various ways. They sometimes use a collection of skills to define another one, and what they say generally suggests that they have at least tacit views and theories about the way in which these foundational skills generally cluster – we only paid attention to foundational skills, but they obviously do not evolve separately from technical skills in the relevant contexts – and how individuals who have these skills can contribute to organisational outcomes.²³

To identify patterns and tacit theories in stakeholders' perceptions, we measured the "relatedness" of skills to each other. We analysed each of the 166 statements we included in our database using these principles and created a complete relatedness matrix, i.e. a heatmap that depicts the degree of relatedness between every skill. The relatedness coefficient is illustrated on a scale using different shades of the same colour (See figure 1).

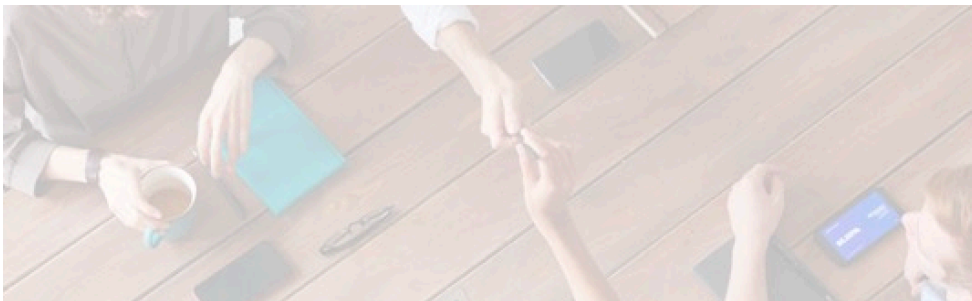
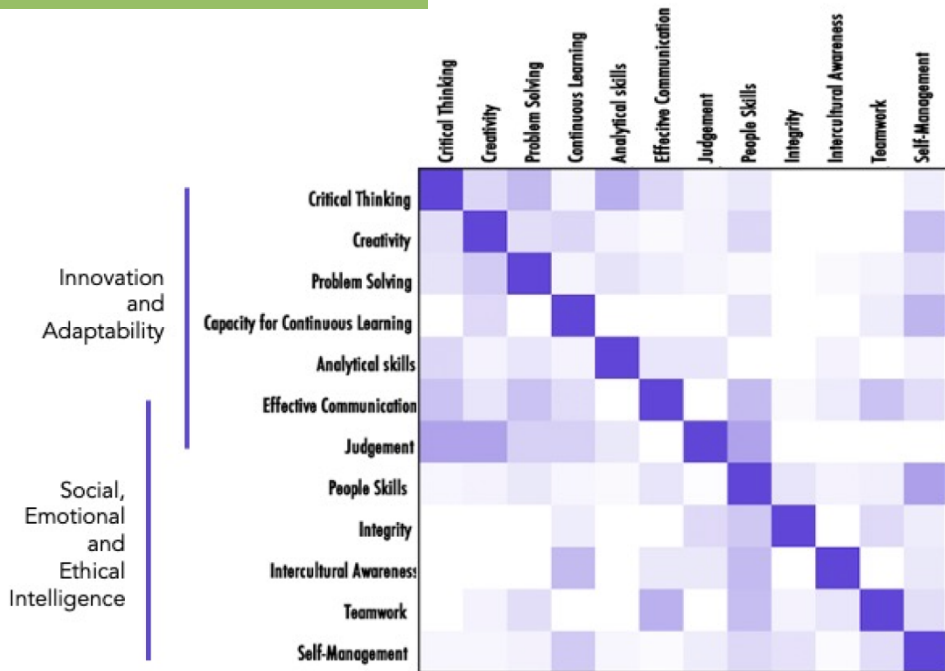


Figure 1. Relatedness Matrix



Stakeholders' implicit theories about the way skills are connected

Figure 1 shows that semantic clusters permeate skills-talk. In the literature, skills are not grouped together randomly but intentionally. More specifically, they are seen to be connected in regard to certain purposes, outcomes or results: groups or clusters of skills are associated with organisational-level behaviours or outcomes that are seen to drive organisational achievement. What employers want is for their organisation to realise the conditions that drive organisational achievement and they generally have beliefs about (among other things) the skills individuals must have to contribute to creating these conditions. However, different stakeholders tend to see different skills as expedient of the same organisational-level behaviours.

Given our desire to refrain from conceptual imposition, and in order to give readers enough flexibility to refine the framework for their varied purposes,

it made sense to keep the proposal simple. We used a qualitative analysis to formulate a hypothesis: there are two very broad organisational-level behaviours employers seem to associate most frequently with specific skills-clusters:

1. innovation & adaptability,
2. ethical, social & emotional intelligence.

But this does not exclude that the identification of other more specific overlapping organisational-behaviours can be useful in a different context. The purpose is not to provide a description that applies uniquely and exclusively, but to articulate an analytical framework that allows a better understanding of the roles and connections between skills in work environments.

Readers might want or need to adapt. For instance, because “effective communication” includes a broad range of specific skills (e.g. active listening, oral expression, effective writing) and plays such an important role in organisational contexts, we considered including it as a third organisational-level element in our scheme. But it ultimately seemed closer to the spirit of the claims made about it to understand it as a “skills-complex” individuals can develop with adequate training. Some readers might find it more useful to proceed otherwise.

In the literature, foundational skills-clusters are not always explicitly associated to an organisational-level behaviour or outcome, but they are often discussed in connection with them. For instance, critical thinking is almost invariably discussed in connection with the imperative for innovation and/or as a catalyst for adaptability and resilience. It is also rarely discussed separately from some other skills such as problem solving and analytical skills. The same holds for the capacity to work in teams, which is often cited with a range of other skills which are understood to foster strong managerial leadership in a socially and emotionally intelligent workplace: effective communication and people skills.

In the literature, claims about innovation and adaptability just like claims about social, emotional and ethical intelligence make it clear they are seen to be key to organisational well-functioning. Our mapping of skills-clusters offers a meta-cognitive framework that has the advantage of being based

on an empirical model of stakeholders' tacit theory of foundational skills. What is interesting about the relatedness matrix is that it reflects the way in which skills are effectively grouped, framed and discussed, and associates them with organisational-level behaviours perceived to drive achievement. That individual skills cluster, that they are connected to organisational drivers, and that these drivers seem to converge around a few universal concerns, i.e. innovation/adaptability and social, emotional and ethical intelligence, is information that is indispensable to thinking about the value of individual skills, especially in the context of talent development.

Noteworthy is the tendency to view, for example, analytical skills and critical thinking, as a key component of innovation, and to understand the ingredients of innovation as being otherwise quite broad ranging, to include aspects of social and emotional intelligence as well. We observed that skills associated with "leadership" (not subject to classification in our framework, but we discuss the notion in the Analytic Glossary appended to this report) are often the same as those connected to social, emotional and ethical intelligence, which confirms recent research on what makes for managerial health. Finally, one noteworthy observation is that the skills associated with a basic capacity for ethical deliberation and deontological compliance are also perceived to be important, and are often also connected in the literature with social and emotional intelligence.

One last remark, and one that would deserve full separate treatment: as is the case with many other aspects of "capabilities," it's important to stress that whatever is needed for an organisation to realise the conditions associated with success, skilled individuals are not enough and it also needs to include the availability of certain types of organisational infrastructures, including favourable managerial and organisational cultures.²⁴

UNDERSTANDING, ARTICULATING AND COMMUNICATING THE VALUE OF TALENT

PSE stakeholders need to understand what lies beneath skills talk so they can make decisions about programming and funding that address the appropriate issues. But graduates also need a good understanding of how their future employers understand what they need, so they can learn to articulate and communicate how their education has equipped them to contribute. This is the sense in which we can say that an additional advantage exists for those who, in addition to having the foundational skills they need, also have high levels of metacognitive literacy or “self-knowledge.”²⁵

EMPLOYERS PERCEIVE INDIVIDUAL SKILLS TO BE valuable *relatively*, that is, to the extent that they are seen to contribute to organisational behaviours that drive success and efficiency. In contrast, academics often emphasise that learning should be valued for its own sake because excellence is its own reward. Despite the differences in perception of values, employers and academics agree that individuals should seek to develop foundational skills.

Graduates who understand how skills serve organisational efficiency and achievement are in a better position to understand and explain how the individual skills they have acquired can actually contribute to innovation as well as social, emotional and ethical intelligence - or possibly other more or less granularly defined organisational-level behaviours that can be seen to drive success. Such individuals have an increased capacity to articulate and

communicate the value of their know-how, and the way this know-how can be adapted to offer flexibility across a wide variety of occupations, in industry and not-for-profits sectors as well as in academia.²⁶ Given that the foundational skills are perceived to cluster in different ways, and since they can be leveraged toward different purposes, such knowledge is by itself a skill that allows for greater nimbleness and flexibility.

At the governmental level, both provincial and federal, one general strategic priority is to encourage widespread access to PSE at large, irrespective of the major, though STEM continue to be preferentially promoted. What comes out of the literature is a sense of urgency regarding PSE's capacity to develop talent and competencies that private and public sector employers seek and which they believe promote an innovative and adaptable workplace, where ethical, social and emotional intelligence shape human interactions.

Discussions around talent in the post-secondary sector however call for balance. Universities' mission is not to prepare graduates for work. Universities' societal role and civic responsibilities are complex and multifaceted, and this is especially true with regard to SSH. PSE education policies need research that can support (or debunk) the claims industry leaders are making about the value of SSH degrees. But in universities, program development and curriculum planning also need answers to questions such as: How can foundational skills-building be accommodated without compromising vetted curricula and disciplinary research ecosystems in a context where the mechanisms that underpin SSH research impact are not well understood?

The conclusions we draw can be used as a starting point when addressing these questions. We underscore the fact that skills do not exist in a vacuum: an individual's skills are valued, not for themselves but because they can be leveraged in organisational contexts to foster organisational-level behaviours that drive success. Organisations in which foundational skills are adequately distributed are expected to be more innovative and adaptable and to display more intelligence, for example in decision making, HR policies, and strategic direction. These behaviours, when also supported by adequate infrastructure and managerial cultures, are believed to boost organisational productivity.

Hence the next steps in this discussion seem to revolve around establishing in each case the facts as regards which organisational-level behaviours lead to the desired outcomes, what skills individuals need to realise the latter and, perhaps more importantly, how these skills are best fostered as part of a university education. Whatever answer we find, it will need to make clear that skills don't evolve in a vacuum. Not only are skills deeply connected, but they require adequate infrastructure (e.g. team management software like Slack or Trello) and managerial cultures (e.g. inclusive, agile approaches). The availability of these environmental factors is not very frequently considered, however, and this points to another important gap in our understanding of the nature of foundational skills: the fact that skills are used in environments, organisational structures and cultures that can be more or less amenable to their deployment.

WHAT SOCIAL SCIENCES AND HUMANITIES NEED TO KNOW

Universities increasingly make decisions about programs and the distribution of funding in an effort to meet private and public sector demands. Universities are also increasingly aware of the fact that students are looking for an education that will lead to employment. Students juggle a number of needs and interests as they transition from secondary to PSE, and this is especially true of SSH students who generally ascribe value to aspects of education beyond the promise of a secure career or financial gain. Nonetheless, students are also increasingly aware of the fact that securing employment requires a range of skills that are not content-based and academic. It is no surprise that SSH departments in Canadian universities use their online portals in an attempt to articulate and communicate the way in which their programs' curricula and learning objectives support foundational skills-building.

We wanted to examine the way in which SSH departments and faculties promote their course offerings and program to prospective undergraduates. Our working hypothesis was that this would, at the very least, tell us something regarding the way in which SSH perceive their own relevance when it comes to addressing students' concerns for employment outcomes, and thus indirectly, perceived employers' needs.

IT WOULD BE A MISTAKE TO ASSUME THAT THE INTERESTS of universities – and indeed of SSH disciplines and research – and those of industry compete when it comes to foundational know-how. On the contrary, what makes foundational skills desirable in industry settings is also what makes them increasingly indispensable in academic, research settings.

Using the same 12 inventory categories for foundational skills, we skimmed the webpages of all SSH departments in every public Canadian university to record which of these skills these departments consider their various programs to foster in students. Our research shows that concern for skills is unequal across the provinces, with SSH department in New Brunswick and British Columbia deploying the most efforts in trying to connect programming to foundational skills, and Quebec and Ontario lagging behind only Manitoba.²⁷ But more importantly, when it comes to promoting the value of their programs to future graduates, social sciences and humanities programs, when they happen to mention marketable skills students can expect to acquire, almost always leave out a range of competencies which their disciplines are in fact uniquely positioned to foster, including the sort of metacognitive skills that allow individuals to articulate and communicate the value of their know-how in different contexts.

Figure 2

Skill	Interdisciplinary	H	SS
Active Listening	.	.	.
Analytical Skills	■	■	■
Capacity for Continued Learning	.	.	.
Complex Problem Solving	■	■	■
Creativity	■	■	■
Critical Thinking	■	■	■
Deliberation and Judgement	.	.	.
Integrity	.	.	.
Intercultural and cross-cultural knowledge and sensitivity	■	■	■
Intercultural or cross-cultural competency	■	■	■
People Skills / Relationship Building	.	.	■
Self-management / Organization	.	.	■
Teamwork	.	.	■
Writing	■	■	■

Which Foundational Skills SSH Department/ Programs Claim to be Fostering?

Here are some highlights²⁸:

1. SSH clearly consider that it falls within their purview to help build the skills employers identify as central to innovation and adaptability.²⁹
2. SSH disciplines do not seem concerned to explain how their programs can help students hone skills associated to social and emotional intelligence, which suggests that they mistakenly believe that they are not valuable and/or sought-after.
3. SSH disciplines rightly stress the value of communication skills, and perhaps more so than what's the case in the literature. But it is not clear that PSE's conception of what effective communication amounts to is aligned with employers' needs.

It's no surprise that SSH disciplines should understand their programs to contribute to the acquisition and/or refinement of competencies such as

critical thinking, analytical skills, problem solving, and creativity. Some disciplines presumably have a more direct role to play in fostering these foundational skills than others. For instance, almost every philosophy department offers courses with the label “Critical Thinking.” Likewise, anthropology and language programs seem uniquely inclined to claim being in a position to foster intercultural awareness, and this seems intuitive enough. However, it’s not the case that critical thinking skills are only developed in philosophy programs. And it’s certainly not the case that a critical thinking course is sufficient to develop the latter.

Various aspects of curriculum in the humanities and social sciences can presumably be understood to aim at equipping students with know-how and meta-cognitive conceptual toolkits to enhance their foundational abilities. It is becoming increasingly urgent, especially as a matter of mere disciplinary hygiene, to understand how they can be made to flourish as part of SSH education. The problem is that when it comes to defining the actual capacity of SSH disciplines for fostering in students these sought-after foundational skills, we face an utter lack of research. At the very least, it seems safe to assume that it’s a bad idea to tailor the division of labor to disciplinary boundaries when it comes to skills-building, and it needs to be clear that we have no evidence to encourage such a practice.

The most remarkable upshot of our research is the following. With the exception of anthropology and language programs, virtually no SSH departments in Canadian universities seem to think of their program as helping students develop skills associated with social, emotional and ethical intelligence [See Figure 3, above]. This is in sharp contrast with employers stated needs. But more significantly, this diverges from what would appear to most as a safe hypothesis, namely that SSH, and the Humanities in particular, are eminently well positioned to offer programming that is conducive to fostering these skills such as self-management, intercultural awareness, integrity, people skills, and good judgement.

Part of the problem is that decision-makers, management and indeed faculty often have only a rudimentary grasp of – and perhaps a mere perfunctory concern for – the nature or value of foundational skills, or of the specific ways in which they can be fostered through academic programming. This is reflected in the way SSH programs communicate with prospective students. Our research shows that self-promotion claims

about the capacity of SSH programs to foster foundational skills often amount to generic, blanket statements that are not supported by evidence. In some universities, all SSH departmental websites in a faculty even used the same boiler-plate statements. The claims SSH make about their own contribution to foundational skills-building on their websites may of course not tell us much about capacity and may reflect instead vague perceptions of managerial expectations. But, by the same token, this could mean that instructors themselves lack the literacy or indeed the willingness to justify these claims if they were asked to do so.

Although some ideas for research projects have been floated and might be in the works, we do not have sufficient data to draw conclusions regarding the specific foundational skills SSH disciplines can foster through their programs, let alone to develop an account of the sort of variability that might be introduced by differences in instructional approaches, if not by the academic freedom of individual instructors. While such variability is also highly desirable and indeed one of the most precious features of an academic instruction, it necessarily plays a role in the definition of learning objectives, as different instructors choose to focus on different didactic approaches, assessment methods or even class dynamics.

THE SKILLS SEEN AS DESIRABLE BY EMPLOYERS IN industry contexts, are the same skills that are needed to support SSH Research. The Social Sciences and Humanities Research Councils expect their talent building programs to foster competencies that converge with organisational-level behaviours that drive productivity. The Social Sciences and Humanities Research Council calls them: interdisciplinarity, global thinking, creativity, collaboration, adaptability, and transferability.

What kind of research would provide SSH meaningful ways to address these concerns without upsetting their academic mission or minimizing their overall societal role? The question is important. Meaningful research questions are defined by needs and interests of end-users. But the range of stakeholders when it comes to the role of SSH in foundational talent-building is quite broad and their interests and needs are complex:

1. Unlike industry and policy stakeholders who are generally focused on issues around economic development, **SSH FACULTY'S** values are often oriented toward the creation of societal change and building capacity for democratic citizenship.
2. **UNDERGRADUATE SSH STUDENTS'** interests and needs should be considered separately, and in a manner that does not subordinate the mission of universities to the needs of industry.
3. Universities must consider what is needed to foster the skills **EMERGING RESEARCHERS IN SSH** are expected to acquire and what post-graduate training should look like given that only a small fraction of graduate students will access an academic position.
4. **RESEARCH FUNDING AGENCIES'** priorities are to foster the skills needed for research and increasingly, for interdisciplinary research. This focus however needs to be understood with the background of increased efforts to channel research efforts toward partnership models, the need for which is presumably driven by factors linked to innovation in industry and the not-for-profit sector.

Answers to these questions have implications for the entire university-level SSH research eco-systems. Whether or not academic values incite SSH faculty to be cautious vis-à-vis things corporate, SSH faculty are justified to be wary of attempts to accommodate industry-needs by modifying undergraduate and postgraduate curriculum and emphasising professional development since such changes might have effects on research capacity and research training down the line, with the conceivable consequence of upsetting universities' capacity to attract further investment.

At the very least, part of the challenge for the next steps is to make sure stakeholders are equipped with the evidence and conceptual tools they

need to reflect on these questions as well as on their own practices, and to articulate perspectives and exchange ideas on these topics in ways that do justice to the multiplicity of perspectives. Research along those lines might not only lead to changes, it might also reassure those who are understandably cautious and distrust the idea of instrumentalising the values of SSH by associating learning objectives and research development with marketable skills.

MISSED OPPORTUNITIES

There is, however, very little ground to think that SSH values are a true barrier when it comes to foundational talent-building. SSH researchers are understandably wary of being perceived to be the instrument of corporate gain. But SSH researchers are all, in one way or another, engaged in transforming social institutions for the better. And this is the best argument to demonstrate the importance of better alignment around skills.

SSH educators value human and social flourishing, and they generally associate contributions to human and social flourishing with research and teaching that supports the creation of economic, legal, political and social institutions that reflect a commitment to fairness and inclusive citizenship. But in order for economic, social, legal and political institutions to evolve to create the conditions of a fair and inclusive society, it is not enough to draw on the research of SSH specialists: we must also count on the participation of individuals who have been trained for various roles where foundational skills are an ingredient of organisational efficiency.

SSH graduates and postgraduates overwhelmingly populate the public and not-for-profit employment sectors. Civil servants, not-for-profit managers, judges and policy-makers must themselves be equipped with the skills needed to ensure that the organisations and institutions in which they part-take fulfil their purposes and thrive. Just as is the case in private industry settings, public and not-for-profit sector employees need the skills to

innovate and adapt, as well as those required to work together with others in ways that show social, emotional and ethical intelligence. These organisational-level behaviours need to be sustained by adequate foundational skills in all sectors of human activity, and perhaps especially in those institutions SSH are designed to shape through their research.

With this in mind, it is important to emphasise the importance of “collaborative skills” which overlap substantially with those used to describe social and emotional intelligence: teamwork, effective communication, self-management, and intercultural awareness. Employers need employees who have these skills, whether they operate in the private, public or not-for-profit sector. But equally important for SSH research stakeholders is the fact that emerging researchers need these skills as well, in a context where partnered, interdisciplinary and collaborative research is encouraged and rewarded. Collaborative skills feature among the skills The Social Sciences and Humanities Research Council of Canada (SSHRC) considers to be essential to talent in research. Yet, these skills are effectively amongst the hardest to foster meaningfully. Efforts to create opportunities for SSH graduate students to develop these skills remain rare and hard to access given other constraints of SSH degrees. Few instructors and supervisors are familiar with best practices and approaches to structuring collaborative learning or group inquiry. For students at the post-graduate level, these deficiencies are eminently present especially where research training revolves solely around individual supervision.

Missed opportunities for universities around foundational talent building seem to be many. The cause might reside in the widespread and legitimate uneasiness with which university leadership tries to reconcile academic values and academic freedom with what is mistakenly perceived as opposed to it: the motivations and expectations of students and those of industry partners. If there is an argument to be made that foundational skills should be one of the targets of undergraduate SSH education, it gets initial traction in the pronouncements of prominent industry trailblazers who seem to agree.^{30 31 32} Even assuming that stakeholders’ beliefs about the nature and value of foundational skills are in fact correct, and keeping in mind that psychological and physical factors can play in social and emotional learning, a number of questions emerge³³:

1. Are PSE institutions making the most of their undergraduate SSH programming when it comes to building the future of work and citizenship?
2. What should be the role of professional development programs in the SSH education ecosystem, and what foundational skills should it target to amplify the value of SSH training?
3. Are current models of work-integrated learning, which are often seen as an expedient of foundational skills-building, adequate to students in SSH?
4. Given the needs of the innovation ecosystem, what foundational skills should be the focus of SSH postgraduate training?

Naturally, when making decisions about curriculum or funding priorities or the creation of new professional development programs, university stakeholders need to rely on more than perceptions. After we gauge stakeholders' understanding of foundational skills, and their beliefs in the way in which they are perceived to be connected to drive organisational achievement, these beliefs themselves ought to be tested against our current expert knowledge in the broader context – if only because industry is eminently bad at foresight.³⁴ Only then can we deliver an assessment framework capable of informing institutional strategies and provide pathways to employment that meaningfully leverage the skills students in fact need and which they effectively acquire or continue to hone as part of their university degree.



BIBLIOGRAPHY

- Accenture. (2018). *How to accelerate skills acquisition in the age of intelligent technologies*.
- Advisory Council on Economic Growth. (2017). *Learning Nation: Equipping Canada's Workforce with skills for the future*.
- Archer, W., and Davison, J. (2008) *Graduate Employability: What do employers think and want?* London: Council for Industry and Higher Education.
- Bakhshi, H., Downing, J., Osborne, M., and Schneider, P. (2017). *The Future of Skills: Employment in 2030*. London: Pearson and NESTA.
- Braham, E., and Tobin, S. (2020). *Solving the Skills Puzzle: The Missing Piece is Good Information*. Toronto: Future Skills Centre.
- British Council. (2014). 'Key Terminology', *Cultural Skills Unit, Research and Recommendations: Examining the cultural skills gaps and shortages in Singapore, Hong Kong, Indonesia & Burma, (East Asia Report)*
- Burning Glass (2015). *The Human Factor: The Hard Time Employers Have Finding Soft Skills*.
- Business Council of Canada and AON Hewitt. (2016). *Developing Canada's future workforce: a survey of large private-sector employers*. Ottawa: Business Council of Canada and Aon Hewitt.
- Business Council of Canada and Morneau Sephell. (2020). *Investing in a resilient Canadian workforce: 2020 Business Council of Canada Skills Survey*.
- Canadian Council of Chief Executives. (2014). *Preliminary survey report: the skill needs of major Canadian employers*.
- Cukier, W., Hodson, J., and Omar, A. (2015). *"Soft" Skills Are Hard: A Review of the Literature*. Diversity Institute.
- Cukier, W. (2020). *Return on investment: Industry leadership on upskilling and reskilling their workforce*. Future Skills Centre.

- Davies, A., Fidler, D., and Gorbis, M. (2011). *Future Work Skills 2020*. Institute for the Future for the University of Phoenix Research Institute, 540.
- Easton, E., and Djumalieva, J. (2018). *Creativity and the future of skills*. Creative Industries Policy and Evidence Centre.
- Edge, J., Martin, E., and McKean, M. (2018). *Getting to Work: Career Skills Development for Social Sciences and Humanities Graduates*. Ottawa: Conference Board of Canada.
- Finnie, R., Dubois, M., Pavlic, D., and Suleymanoglu, E. (2018). *Measuring Critical-thinking skills of Postsecondary Students*. Toronto: Higher Education Quality Council of Ontario.
- Finnie, R., Miyairi, M., Dubois, M., Bonen, T., and Amery, B. (2019). [How Much Do They Make? New evidence on the early career earnings of Canadian post-secondary education graduates by credential and field of study](#). Ottawa, ON: Education Policy Research Initiative and Labour Market Information Council. Retrieved from: <https://lmic-cimt.ca/projects/studentoutcomes/>
- Frenette, M., and Frank, K. (2017). *Do Postsecondary Graduates Land High-skilled Jobs?* Statistics Canada.
- Future Skills Centre. (2021). Retrieved from: <https://fsc-ccf.ca/>
- Future Skills Council (November 2020) *Canada - A Learning Nation: A Skilled, Agile Workforce Ready to Shape the Future*.
- Harrison, A. (2017). *Skills, Competencies and Credentials*. Toronto: Higher Education Quality Council of Ontario.
- Hart Research Associates. (2013). *It Takes More Than a Major: Employer Priorities for College Learning and Student Success*. Liberal Education, 99(2).
- Institute for Competitiveness & Prosperity. (2017). *The labour market shift: Training a highly skilled and resilient workforce in Ontario*. Working Paper 29.
- Institute for Competitiveness & Prosperity. (2018). *Teaching for Tomorrow: Building the Necessary Skills Today*. Working Paper 33.
- Irish Jobs (2019) *Critical Thinking Skills in the Workplace*. Retrieved from:

<https://www.irishjobs.ie/careeradvice/critical-thinking/>

- Kenyon, T., and Beaulac, G. (2014). "Critical Thinking Education and Debiasing," *Informal Logic*, Vol. 34 (4), 341-363.
- Lapointe, S. and Turner, J. (2020). *Leveraging the Skills of Social Sciences and Humanities Graduates*. Public Policy Forum, Skills Next Series. Retrieved from: <https://ppforum.ca/publications/leveraging-the-skills-of-graduates/>
- LeFebvre, M. (2013). *The Condition of Work Readiness in the United States*. ACT, Inc.
- Lowden, K., Hall, S., Elliot, D., and Lewin, J. (2011). *Employers' perceptions of the employability skills of new graduates*. London: Edge Foundation.
- Lyonette, C., Hunt, W., and Baldauf, B. (2017). *Occupations and Skills of Arts, Humanities and Social Sciences Graduates and Postgraduates*. Warwick Institute for Employment Research, The University of Warwick.
- National Association of Colleges and Employers. (2018). *Job Outlook 2019*. Bethlehem, PA.
- New Zealand Government. (2020). *Skills employers are looking for*. Retrieved from: <https://www.careers.govt.nz/plan-your-career/get-ideas-for-your-career/skills-employers-are-looking-for/>
- OECD (2015). "Skills for Social Progress: The Power of Social and Emotional Skills," *OECD Skills Studies*, OECD Publishing. Retrieved from: <http://dx.doi.org/10.1787/9789264226159-en>
- Oschinski, M., and Wyonch, R. (2017). *Future Shock? The Impact of Automation on Canada's Labor Market*. CD Howe.
- Phelps, E.S. (2014). *Why teaching humanities improves innovation*. World Economic Forum. Retrieved from: <https://www.weforum.org/agenda/2014/09/stem-education-humanities-creativity-innovation>
- Pizarro Milian, R., Seward, B., Zarifa, D., and Davies, S. (2019). *Skills, Signals and Labour Market Outcomes: An Analysis of the 2012 Longitudinal and International Study of Adults*. Toronto: Higher Education Quality Council of Ontario.

- Raybould, J., and Sheedy, V. (2005). "Are graduates equipped with the right skills in the employability stakes?" *Industrial and Commercial Training*, 37(5), 259-263.
- Royal Bank of Canada. (2018). *Humans Wanted: The future of work and how it's not what you think*.
- RBC Thought Leadership. (2019). *Bridging the Gap: What Canadians Told us about the Skills Revolution*.
- Society of Human Resource Management. (2014). *Workforce Readiness and Skills Shortages*.
- The British Academy. (2017). *The Right Skills: Celebrating Skills in the Arts, Humanities and Social Sciences*.
- The Conference Board of Canada. (2020). *The Future is Social and Emotional: Evolving Skills Needs in the 21st Century*. Impact Paper.
- The Conference Board of Canada. (2020). *Employability Skills*. Retrieved from: <https://www.conferenceboard.ca/edu/employability-skills.aspx>
- The Council of Canadian Academies. (2018). *Improving Innovation Through Better Management*.
- Urban, M., and Johal, S. (2020). *Understanding the future of skills: Trends and global policy responses*. Future Skills Centre.
- U.S. Department of Labor. (2010). *Soft Skills to Pay the Bills—Mastering Soft Skills for Workplace Success*. Retrieved from: <https://www.dol.gov/sites/dolgov/files/odep/topics/youth/softskills/softskills.pdf>
- Willingham, D. T. (2008). "Critical Thinking: Why Is It So Hard to Teach?" *Arts Education Policy Review*, 109(4), 21-32.
- Weingarten, H. P., Brumwell, S., Chatoor, K., and Hudak, L. (2018). *Measuring Essential Skills of Postsecondary Students: Final Report of the Essential Adult Skills Initiative*. Toronto: Higher Education Quality Council of Ontario.

- Weingarten, H. P., and Hicks, M. (2018). *On Test: Skills. Summary of Findings from HEQCO's Skills Assessment Pilot Studies*. Toronto: Higher Education Quality Council of Ontario.
- World Economic Forum. (2016). *New vision for education: Fostering social and emotional learning through technology*. World Economic Forum & The Boston Consulting Group.
- World Economic Forum. (2018). *The Future of Jobs Report. Centre for New Economy and Society*.
- World Economic Forum. (2020). *Jobs of tomorrow: Mapping opportunity in the new economy*.
- Young Entrepreneurs' Alliance. (2018). *It's Learning. Just Not as We Know It. How to Accelerate Skills Acquisition in the Age of Intelligent Technologies*. Accenture.
- Zhou, K. (2017). "Non-cognitive skills: Potential candidates for global measurement". *European Journal of Education*, 52(4), 487-497.

NOTES

¹ Business Council of Canada. (2016). *Developing Canada's future workforce: a survey of large private-sector employers*. Ottawa: Business Council of Canada and Aon Hewitt.

² Hart Research Associates. (2013). *It takes more than a major: Employer priorities for college learning and student success*. Liberal Education, 99(2).

³ K. Lowden, S. Hall, D. Elliot, & J. Lewin. (2011). *Employers' perceptions of the employability skills of new graduates*. London: Edge Foundation.

⁴ [Future Skills Centre • Centre des Compétences futures](#)

⁵ [Leveraging the Skills of Social Sciences and Humanities Graduates](#)

⁶ T. Kenyon & G. Beaulac. (2014). "Critical Thinking Education and Debiasing," *Informal Logic*, Vol. 34 (4), pp. 341-363.

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- ⁷ M. LeFebvre. (2013). The Condition of Work Readiness in the United States. *ACT, Inc.*
- ⁸ W. Cukier. (2020). *Return on investment: Industry leadership on upskilling and reskilling their workforce.* Future Skills Centre.
- ⁹ The government of Ontario itself offers a taxonomy of the skills it considers “essential” and this framework is set to define policy priorities for years to come. <http://www.skillszone.ca/>
- ¹⁰ W. Cukier, J. Hodson, & A. Omar. (2015). *‘Soft’ Skills are Hard: A Review of the Literature.* Toronto, Ontario, November 30, 27 pages.
- ¹¹ The database and search engine associated can be found here: <https://www.onetonline.org/search/>
- ¹² A. Davies, D Fidler, & M. Gorbis. (2011). *Future work skills 2020.* Institute for the Future for University of Phoenix Research Institute, p. 540.
- ¹³ “In the face of the many drivers of change, jobs evolve as workplaces innovate and adjust. And while post- secondary education remains a fundamental pillar of Canada’s workforce development, labour market information related to skills is essential to ensuring the country’s future success. Indeed, employers struggle to find workers with the right skills, and workers are asked to improve their skills on an ongoing basis” (Braham & Tobin, 2020, p. 18).
- ¹⁴ Advisory Council on Economic Growth. (2017). *Learning Nation: Equipping Canada’s Workforce with skills for the future,* The British Academy. (2017). *The Right Skills: Celebrating Skills in the Arts, in the Humanities and Social Sciences;* S. Lapointe & J.Turner. (2020). *Leveraging the Skills of Social Sciences and Humanities Graduates.* Public Policy Forum.
- ¹⁵ RBC Thought Leadership. (2019). *Bridging the Gap: What Canadians Told us about the Skills Revolution.*
- ¹⁶ J. Edge, E. Martin, & M. McKean. (2018). *Getting to Work: Career Skills Development for Social Sciences and Humanities Graduates.* Ottawa: Conference Board of Canada, p. 27. There are other reasons to see an increase in the number of SSH graduates to access leadership position in industry, such as the need to foster greater diversity.
- ¹⁷ R. Finnie, M. Miyairi, M. Dubois, T. Bonen, and B. Amery. (2019). [*How Much Do They Make? New evidence on the early career earnings of Canadian post-secondary education graduates by credential and field of study.*](#) Ottawa, ON: Education Policy Research Initiative and Labour Market Information Council;
- M. Frenette, & K. Frank. (2017). *Do Postsecondary Graduates Land High-skilled Jobs?* Statistics Canada.
- ¹⁸ Conference Board of Canada. (2020). *Employability Skills.*
- ¹⁹ Future Skills Council. (2020). *Canada - A Learning Nation: A Skilled, Agile Workforce Ready to Shape the Future,* p. 13.

²⁰ “These skills [creativity; critical thinking; people management; problem solving; applying expertise; communication; teamwork; digital literacy; entrepreneurial capacities] enable individuals to be resilient and adaptable through change, taking on new tasks or roles with less difficulty than individuals without them. This mix of transferable skills are what the Institute considers to be highly skilled” (ICP, 2017, pp. 18-19).

²¹ See Methodology, p.1

²² See Methodology, p.1-2

²³ See Methodology, p.2

²⁴ Kenyon & Beaulac, “Critical Thinking Education and Debiasing.”

²⁵ The Conference Board of Canada. (2020). *The Future is Social and Emotional: Evolving Skills Needs in the 21st Century*. Impact Paper.

²⁶ R. Finnie, M. Miyairi, M. Dubois, T. Bonen, and B. Amery. (2019). [*How Much Do They Make? New evidence on the early career earnings of Canadian post-secondary education graduates by credential and field of study*](#). Ottawa, ON: Education Policy Research Initiative and Labour Market Information Council.

²⁷ See Figure 5 in Methodology, p.4

²⁸ For a Representation of SSH Skills-Talk by Department, see Methodology, p.3

²⁹ “The assumption is that this is achieved through the traditional, existing SSH course offering. This is in line with specialist discourse that promote SSH degrees as an expedient of future skills building” (The British Academy 2017, p. 26).

³⁰ Business Council of Canada, *Developing Canada’s future workforce: a survey of large private-sector employers*.

³¹ Hart Research Associates, *It takes more than a major: Employer priorities for college learning and student success*.

³² K. Lowden et al., *Employers’ perceptions of the employability skills of new graduates*.

³³ Some of these questions are raised in *The Future is Social and Emotional: Evolving Skills Needs in the 21st Century*. Impact Paper. The Conference Board of Canada. (2020).

³⁴ [Getting ahead of disruption is key to our future: An introduction to Canada Next](#)