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

the la **COLLAB⬤RATIVE**

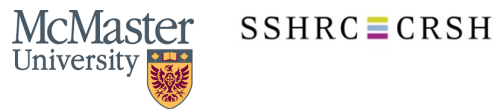METHODOLOGY.

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

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.

Research for **FOUNDATIONAL SKILLS NEEDS AND WHAT SOCIAL SCIENCES AND HUMANITIES NEED TO KNOW** was also supported by:

DEVELOPING AN ANALYTICAL FRAMEWORK

The main challenge in conducting our initial research was to produce a cohesive overview we could use as heuristics, while at the same time dealing with broad ranging types of research outputs, driven by a diversity of objectives and of approaches in determining principles for the selection of participants, as well as data interpretation. Redundancies and ambiguities pervade descriptions of skills, and the literature often leaves the skills and competencies under discussion improperly defined and/or with competing definitions – an artefact that points to an otherwise intractable feature which our analyses seek to accommodate. We wanted to be in a position to bypass the linguistic jam to take a closer look at the conceptual machinery, while at the same time offering a high-level analysis of the substantial claims that are made about talent. Our approach is designed to mitigate these difficulties, and offer the means to formulate interesting empirical hypothesis that can be tested where relevant.

In building upon the previous versions of this Discussion Paper, as well as on a series of panels and consultations and a preliminary literature review, we have selected reports and analyses that draw directly on surveys and/or on direct input from employers and universities. The purpose is to chart a landscape of what industry, private and public sector stakeholders understand to be foundational skills and why they think they need to hire individuals who have them. We endeavour to offer a framework within which the competencies, skills, capacities and other aspects of talent described as essential and most desirable by employers are discussed and connected reciprocally, or with distinct organisational-level behaviours perceived as driving productivity, in the hope that their nature and value can be better understood down the line.

We focused first and foremost on Canadian stakeholders, and endeavoured to prioritise research from Canadian sources. Canada-focused studies are however scarce. Furthermore, the ever-expanding context of employment in a post-globalisation world makes it difficult to assume that the only data of value to Canadians concerns Canadian employment or issues of concern to Canadian employers. For all these reasons, while we have attempted to prioritise, wherever possible, Canadian studies on Canadian stakeholders, we have not excluded non-Canadian sources.

As part of a first round of analysis, we mined the literature for the specific purpose of identifying the larger trends, values and motivations that are epitomised in the claims that concern the role of foundational skills. We looked for outcomes or factors to which desirable skills were believed to contribute. We also sought to identify patterns in the way in which foundational skills were grouped together, and in the contexts these groupings were presented. This strategy led us to the observation, for instance, that innovation and adaptability are not in fact typically discussed and understood to be individual skills. Instead, innovation and adaptability are more often described as organisational features or behaviours that drive achievement. Innovation is desirable as an organisational capacity because depending on the context it can contribute, for instance, to increased productivity and translate into higher incomes through growth.[1] This observation and others similar to it is what underpins out analytical framework.

SEMANTIC CLUSTERS AND THE RELATEDNESS MATRIX

Our proposal of an analytical framework for skills talk is supported by a qualitative and quantitative analysis of a broad segment of the recent grey literature, to which we proceeded with as little conceptual imposition as possible. We combed through 46 reports directly relevant to discussions of the future of talent in industry, searching for statements in which private and public stakeholders sought to define or describe the skills they believe employees need. We included both direct and indirect speech, when relevant. We compiled these statements into a list, each time tagging the skills being described. For example, The World Economic Forum's *The Future of Jobs* (2018) identifies "creativity" as an important skill. They define creativity as:

> *The ability to come up with unusual or clever ideas about a given topic or situation, or to develop creative ways to solve a problem*".[2]

This statement became a single entry in our database. Our database contains a total of 14 such statements about creativity. To avoid terminological redundancy and/or proliferation, and to allow the reader to concentrate on what employers meant, we concurrently developed a glossary that tracks systematically semantic equivalences.[3] For instance, in the relevant contexts, we determined that reference to "creative thinking" and "innovative thinking" are used roughly in the same sense to mean "creativity". It is an upshot of the current state of discourse on skills, which presents little terminological cohesion and even less consensus, that the best we can do is to approximate.[4]
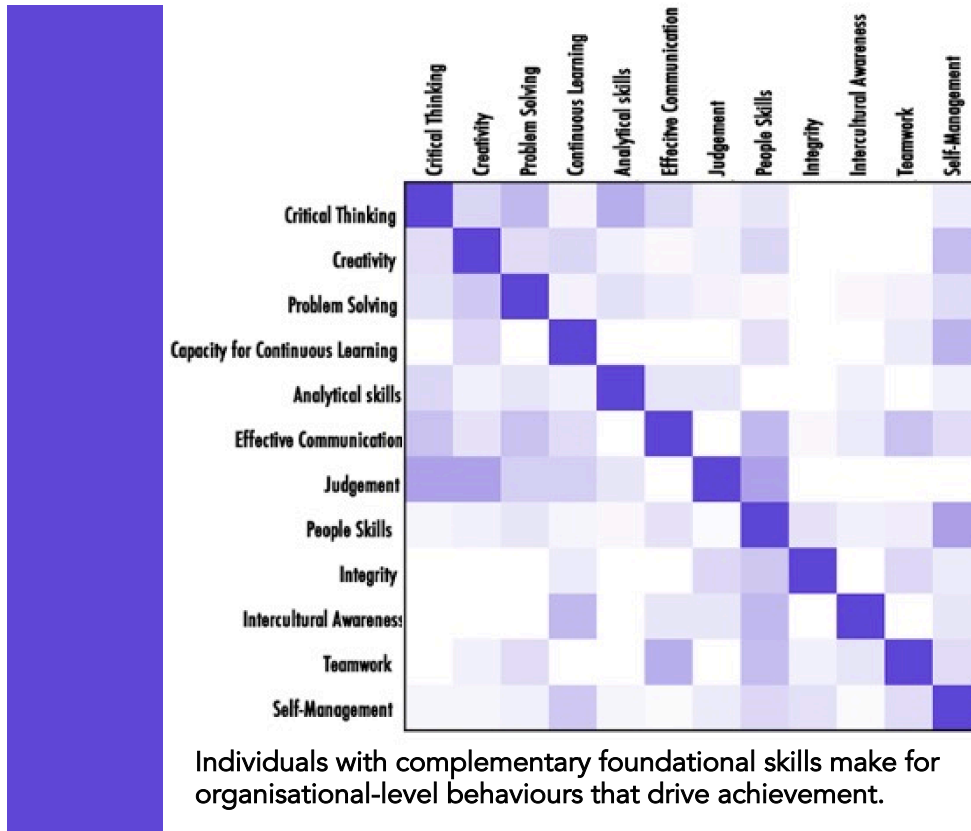
To identify patterns and tacit theories in stakeholders' perceptions, we measured the "reciprocity" of skills to each other. Specifically, for each statement about specific skill, say critical thinking, we determined whether that statement also established a relationship between the skill described and some other skill(s). For instance, our database contains 16 statements about critical thinking:

- 4 of these statements describe critical thinking as "very related" to problem-solving, either because it is used to define it or because some other type of dependence is established (score = 1)
- 4 of these statement as "somewhat related" to problem solving (score = .5). Typically, this score was given when a skill was co-listed with others for some meaningful purpose
- 8 of these statement say nothing of a relation between the two skills (score = 0).

We calculated the relatedness score of critical thinking to problem solving as: (4 x 1) + (4 x 0.5) = 6/16, i.e., 0.375.

We analyzed each of the 166 statements we included in our workbook (excel database) using these principles and created a complete relatedness matrix, i.e. a heatmap that depicts the semantic proximity between skills. The reciprocity coefficient is illustrated on a scale using different shades of the same colour (See figure 1).

Figure 1

Individuals with complementary foundational skills make for organisational-level behaviours that drive achievement.

SKILLS TALK IN CANADIAN SSH

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 the departments consider their various programs to foster in students. Program information was organised by department. Only B.A. and/or M.A. programs were included. When examining data for departments in which B.Sc. and/or M.Sc. were also offered (e.g. geography, psychology, anthropology, etc.), data was only recorded from the B.A. and M.A. specific program webpages. Data from certificate programs was included when departments did not otherwise offer full degrees in the discipline. This concerns an exceptionally small portion of the data, however.
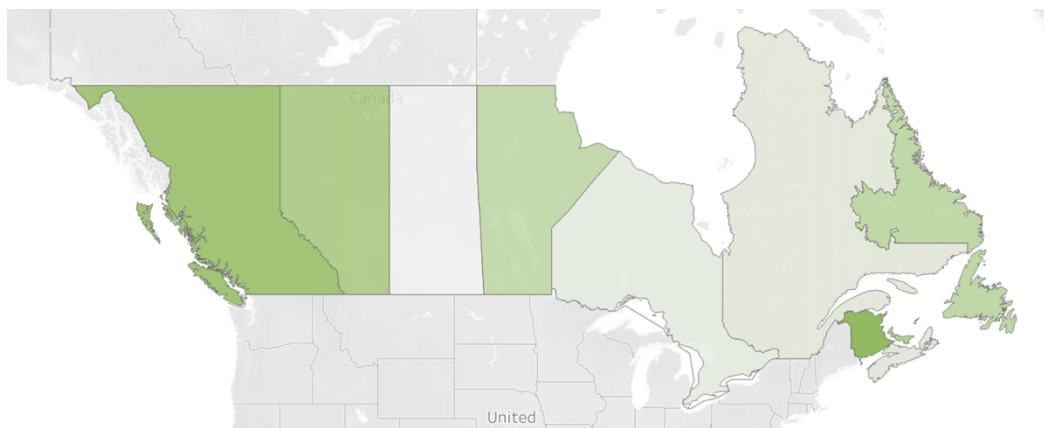
For every SSH program webpage, the province, university, department, broad skill outcomes, specific skill outcomes, and evidence cited were recorded. Additionally, we recorded whether or not a list of program-specific careers, work integrated learning, and/or co-curricular skill development were mentioned. The webpage text referencing the broad talent outcomes and specific skills was also recorded for future reference.[5]

Figure 4

Department

Skill	Anthropology	Business/Economics	Classics	Communications and Media Studies	English/Literature	Geography	History	Interdisciplinary Studies	Law	Linguistics and Languages	Philosophy	Political Sciences/ International Studies	Psychology	Sociology

Critical Thi..
Creativity
Problem Sol..
Capacity fo..
Analytical S..
Communica..
Judgement
People Skills
Integrity
Intercultur..
Teamwork
Self Manag..

Which Foundational Skills Are Claimed to be Fostered in Which SSH Departments and Programs?

Figure 5

Where in Canada are SSH Promoting their Capacity to Foster Foundational Skills?

CONNECTED TOPICS

Our research ought to be considered in tandem with other reports whose objectives are complementary, such as The Conference Board of Canada's report *Getting to Work*[6] and the Future Skills Centre's *The Future is Social and Emotional*.[7] Both projects are concerned, broadly speaking, with issues around the employability of SSH graduates. *Getting to Work* looks at available data to evaluate the short and long-term outcomes of SSH (undergraduate) degree holders. It seeks to identify the causes of difficulties that SSH graduates face when trying to find meaningful employment. *Getting to Work* surveys SSH graduates, career services personnel, as well as faculty regarding employment outcomes, preparing students for career transitions, and training opportunities for SSH students for career transitions. The Public Policy Forum's Leveraging the Skills of Social Sciences and Humanities Graduates briefly reviews existing research on emerging employer needs and employment prospects for university graduates (particularly in social sciences and humanities), before mapping out approaches that aim to support graduates' transition into employment.[8]

NOTES

[1] M. Oschinski, & R. Wyonch. (2017). *Future Shock? The Impact of Automation on Canada's Labor Market*. CD Howe, p. 2.

[2] World Economic Forum. (2018). *The Future of Jobs Report. Centre for New Economy and Society*, p. 29.

[3] The appended Analytical Glossary illustrates this point, and makes explicit the semantic equivalences that guide our study.

[4] This can at times create confusion. For instance, a recent report of the Conference Board of Canada uses the acronym 'SES' to refer to 'social and emotional skills', but education researchers talk of social and emotional learning (SEL) and reserve the acronym 'SES' to speak of so-called socio-economic status.

[5] The workbooks and data sets are available upon request: info@yourcollaborative.org

[6] J. Edge, E. Martin, & M. McKean. (2020) *Getting to Work*, The Conference Board of Canada.

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

[8] S. Lapointe & J. Turener (2020) *Leveraging the Skills of Social Sciences and Humanities Graduates*.