

Research report to support the launch of *Skills for Success:* Structure, evidence, and recommendations

Final report



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PROJECT BACKGROUND

INTRODUCTION

The Canadian workplace, labour market, and economy continue to evolve as a result of automation, artificial intelligence, and other technological advancements. Particularly, automation decreases the need for routine work and physical and manual skills, while intensifying the need for social-emotional skills that are not easily replaced by computers (Urban & Johal, 2020; McKinsey Global Institute, 2018). Workers also need resilience, adaptability, planning and organization, stress management, and openness to learning to successfully navigate and advance in the labour market (McKinsey Global Institute, 2018; RBC, 2018; Urban & Johal, 2020; World Economic Forum, 2018). In addition to these social-emotional skills, math and numeracy continue to play a key role in an estimated 70 per cent of job openings, especially with the growth of data-driven processes and analytics (RBC, 2018). With these rapidly evolving skill requirements, employers face challenges finding workers with the right combination of social-emotional, digital, and literacy skills. Meanwhile, jobseekers and workers struggle to keep up with the changing skill demands of the modern labour market (Braham & Tobin, 2020). Therefore, there is **a pressing need for a modernized skills framework that is responsive to a changing world and provides consistent language and a common understanding of skills constructs.**

PROJECT OVERVIEW

In light of the evolving Canadian labour market and the modernization of workplaces, the Office of Literacy and Essential Skills (OLES) has updated its Essential Skills Framework. Rebranded as Skills for Success, this new framework reflects changing skill needs and is designed to be more sustainable over time.

The key objective of this project is to support the launch and roll-out of *Skills for Success* by providing the necessary structure, evidence, and recommendations that could help inform the development of measures and learning materials aligned with the framework in the longer-run. *Skills for Success* includes two new skills and revised versions of others, as follows:

- Document Use is now embedded in **Reading, Writing** and **Numeracy**;
- The scope of Computer Use has been expanded to **Digital Skills**, which include different types of digital devices and platforms;

- Oral Communication has been changed to **Communication** to include broader concepts, such as non-verbal communication;
- The scope of Working with Others has been expanded to **Collaboration**, which includes inclusivity and respect for diversity;
- Thinking has been changed to **Problem Solving**, with components of Finding Information, Critical Thinking, and Decision Making added to the original narrower Problem Solving, as this resonated more with users and is more focused; and
- **Adaptability** and **Creativity and Innovation** have been added as two new skills, with Continuous Learning embedded in Adaptability.

In collaboration with Canadian and international academic researchers, assessment development experts, as well as training practitioners, SRDC built on existing work and supplemented with primary quantitative analysis to fulfill the project objective. We structured the project activities around the following four areas:

1. **Definitions:** Review, refine, validate and modernize the definitions and descriptions of each skill in the *Skills for Success* framework;
2. **Constructs:** Review, revise and confirm skill constructs, ensuring they are work-focused and transferrable, durable or enduring, measurable, teachable or learnable, and broadly recognized;
3. **Validation:** Conduct qualitative and quantitative analyses to validate the links between each skill and labour market outcomes, further strengthening the practicality of the framework as a useful guide to inform measurement and learning materials development; and
4. **Proficiency levels:** Provide a structured, evidence-based process to rigorously develop proficiency levels and associated descriptors. Provisional descriptors based on preliminary, high-level gradations of the definitions and constructs are provided.

PROJECT ACTIVITIES

Definitions and constructs

To structure consultations, SRDC developed a guiding document that was distributed to a core group of collaborators (see Collaborators section below). This document provided background information and a recommended approach for conceptualizing skills to build a common foundation for collaborator discussions and feedback.

Document review: To inform the guiding document, SRDC first reviewed OLES documents that summarized the culminating work from the *Skills for Success* Advisory Group and Working Group, as well as documents related to the Skills Taxonomy. SRDC also conducted a targeted review to understand how soft or social-emotional skills have been conceptualized as part of other frameworks and in the literature. This resulted in a preliminary mapping of *Skills for Success* to other prominent frameworks, including the [UK Skills Builder](#), [CMEC Global Competences](#), [World Bank's PRACTICE model](#), [21st Century Skills](#), [OECD's Social and Emotional Skills framework](#), and [US's OCTAE Employability Framework](#).

Guiding conceptual structure and questions: SRDC synthesized the findings of this document review to develop a guiding approach, structure, and questions for collaborators. This led to a guiding document that outlined the key goals and objectives of the work related to the core literacy skills, the challenges of defining soft and social-emotional skills, and a proposed conceptual approach. The proposed conceptualization involved understanding all skills – especially the soft or social-emotional skills – as *repeatable processes* or behaviours rather than as personality traits or pre-dispositions, iterating toward a skill-based language that is helpful for curriculum and assessment development.

In this document, SRDC shared the most recent OLES definitions of skills, an SRDC-suggested definition, and preliminary constructs developed by SRDC based on our document review findings. Collaborators answered a series of questions to frame their review and revisions which promoted feedback in a targeted and efficient way.

Feedback process: Collaborators reviewed the guiding document and provided their feedback and comments structured by the guiding questions. SRDC conducted follow-up conversations with some collaborators through email and phone. After the first round of feedback, SRDC synthesized comments and updated the definitions and constructs to reflect collaborator input. A second version of the document was circulated with updated definitions and constructs, including anonymized collaborator feedback, and additional follow-up guiding questions. A second round of feedback was integrated into another revised version of the definitions and constructs, submitted to OLES for feedback and approval.

Validation

Validation included two parallel streams of activity. The first focused on quantitative validation of the links between the skills and labour market outcomes while the second focused on qualitative validation of the preliminary definitions and constructs as acceptable, practical, and usable for diverse practitioners.

Quantitative validation: Two collaborators. Dr. Ross Finnie and Dr. Ashley Pullman conducted primary analysis utilizing Canadian data from the Longitudinal and International Study of Adults

(LISA) data. As part of the analysis, Drs. Finnie and Pullman examined the extent to which social-emotional skills, captured through the Big Five measures in LISA can validly predict labour market success. Capitalizing on the fact that the LISA dataset can be linked with the PIAAC dataset, they also investigated the interaction between core literacy and numeracy skills and social-emotional skills in predicting labour market outcomes. The Big Five measures can be mapped, albeit indirectly, onto some of the newly added or substantially updated skills in *Skills for Success* (more details are provided in Table 4 of this report). The findings from this analysis enhance our understanding of how social-emotional skills predict labour market outcomes broadly in the Canadian population. They also help identify gaps and areas of further research needed as we move forward to establish how *Skills for Success* as defined and constructed are predictive of key labour market outcomes. A brief summary of the high-level findings is presented in this report as a case study in a later section.¹

Qualitative validation: SRDC conducted a series of 10 virtual focus groups with diverse practitioners across Canada with the help of our partners and collaborators. Two groups of collaborators – Maureen Souply and Cindy Messaros from the Alberta Workforce Essential Skills Society (AWES) as well as Pam Tetarenko from Douglas College – leveraged their professional networks to recruit volunteer practitioner participants from across the country. They organized several small online sessions to facilitate open and meaningful conversations and ensured participation from diverse practitioners working in different roles, at different institutions, and serving different populations. In addition, Jean-Pierre Giroux and Lisa Steudle at Excellence in Manufacturing Consortium (EMC) organized an additional session with several industry trainers. This resulted in a total of 10 one-hour virtual sessions with about 75 participants. For more information on the aggregate profile of these practitioners, please see the Practitioners section below.

Prior to the virtual sessions, participants were provided a confidential summary document of the preliminary definitions and constructs. The sessions were conducted in a semi-structured format using a protocol to guide key discussion questions. During the sessions, participants were encouraged to openly provide both positive and negative feedback, reflect on changes made to the framework, how it aligned with both learner and employer needs, and implications for teaching and assessment.

The qualitative data from these sessions (i.e., session notes, audio recordings) were reviewed by three researchers to identify emergent themes, specific opportunities to improve the constructs, and considerations and recommendations moving forward. The researchers discussed findings, resolved any discrepancies, and integrated the findings which are presented in a later section of

¹ The Finnie and Pullman abstract and report, with more details on methodology used, quantitative results, and conclusions and recommendations, can be found [here](#).

the report. We also made some minor edits to the constructs based on practitioner feedback, which are reflected in the definitions and constructs presented below.

Proficiency levels

During the first two rounds of feedback on the definitions and constructs, many collaborators had already shared comments related to assessment and proficiency levels. Some collaborators also shared helpful documents and resources from existing assessments and provided useful references from the literature. Adopting a similar approach used to elicit feedback on the definition and constructs, SRDC synthesized this initial feedback from collaborators to develop another more targeted guiding document with key questions for collaborators. These questions guided collaborators to consider how we assess these skills, how assessment methods inform proficiency levels, how we can use documentations of proficiency levels of related skills in other frameworks, and what process should be followed to update or create proficiency levels for *Skills for Success*.

Collaborators provided a broad range of valuable input and feedback on how to assess each of the nine skills in *Skills for Success*. SRDC summarized and contextualized this information to provide recommendations informing the next steps of the *Skills for Success* roll-out. These include an overview of the current state of assessment development of each skill, as well as further considerations to select, customize, and enhance assessments to tighten the alignment with *Skills for Success*, especially for the newer skills such as Adaptability and Creativity and Innovation.

Regarding recommendations on proficiency level descriptors, there was a strong consensus among collaborators that these need to be developed through an iterative, evidence-based process, with both assessment development and curriculum design experts working in tandem. Proficiency levels and associated descriptors play an important role in the training and skills development field. At the core of this process is both an expectation of how skills acquisition and development happen from a pedagogical standpoint, and a consensus as to what serves as evidence of that proficiency development from an assessment standpoint. SRDC summarized these recommendations, supplemented with a targeted review of the literature, to provide more details on this parallel process to develop proficiency levels and descriptors going forward.

COLLABORATORS

This project involved the input and expertise of a team of collaborators that included Canadian and international academic researchers, assessment development experts, and training practitioners. The collaborators listed below (in alphabetical order of last name) were directly

involved in the most recent activities, consulting on and developing the skill definitions, constructs, and process to develop proficiency levels and descriptors within this report. They also provided valuable perspectives, feedback, and recommendations on the overall framework and the development process.

- **Lew Bayer** and **Kara Finney**, Workplace Education Manitoba (WEM)
- **Paul Brinkhurst**, Futureworx
- **Kyle Downie**, SkillPlan
- **Ross Finnie** and **Ashley Pullman**, Education Policy Research Initiative (EPRI)
- **Alisa Foreman**, **Melissa Gardner**, **Trevor McIvor**, **Wendy Magahay**, and consultants, Bow Valley College (BVC)
- **Michael Herzog**, The Essential Skills Groups (ESG)
- **Janet Lane**, Canada West Foundation
- **Angela McAllister** and colleagues, Canadian Centre for Cyber Security
- **Cindy Messaros** and **Maureen Souply**, Alberta Workforce Essential Skills Society (AWES)
- **Scott Murray**, DataAngel Policy Research, Inc.
- **Richard D. Roberts**, Research and Assessment Design: Science Solutions (RAD Science)
- **Pam Tetarenko**, Douglas College

PRACTITIONERS

About 75 practitioners participated in 10 focus group sessions. Their training programs reflected the diversity of contexts in which *Skills for Success* will be implemented and the diversity of people in Canada who will benefit from this renewed framework. All regions of Canada were represented within these focus group sessions from east to west and including the Northern territories (see Figure 6 in Appendix A). However, there were several gaps at the provincial or territorial level as noted by our collaborators from WEM, such as the Prairie provinces outside of Alberta. There was also little representation from the Atlantic provinces outside of New Brunswick, and other gaps including Quebec, the Yukon, and Nunavut. It will be important in future work to continue engaging diverse practitioners across Canada to ensure the *Skills for Success* meets the needs of all provinces, territories, and different communities in Canada.

Practitioners worked in a wide variety of roles, including Essential Skills trainers and facilitators; language, ESL, or LINC instructors; employment and career counsellors; job developers; curriculum developers; and managers and directors. Over 17 per cent specifically mentioned being currently or previously involved in programming that is sector-specific or industry-oriented. Many were based in community organizations or college settings, but some also worked in government, industry organizations, and other educational institutions. Practitioners served a wide range of clientele, with over 20 per cent reporting serving newcomers specifically, 15 per cent working with Indigenous communities and populations (urban, rural, and remote), and almost 10 per cent in youth programming. Practitioners also reported serving rural clients, older adults, and adults with disabilities. While many practitioners brought years of experience working with the old Essential Skills framework, the focus group sessions also included some practitioners who were newer to Essential Skills or had less experience directly facilitating Essential Skills. A description of the composition and profile of each focus group is available in Table 5 of Appendix A.

THE CURRENT REPORT

The current report is organized as follows. The next section summarizes the criteria and principles that informed the conceptualization of *Skills for Success*. The current definitions and constructs of all nine skills are presented next. Feedback from practitioners to validate these definitions and constructs is then highlighted, with a summary of opportunities for future work to support the implementation, roll-out, and adoption of *Skills for Success* from a training perspective. The discussion on proficiency is presented next, which includes a broad overview of the opportunities to update, enhance, and leverage existing assessments. The report concludes with the description of the iterative, evidence-based process to develop proficiency levels and descriptors of *Skills for Success*.

CONCEPTUALIZATION

OVERARCHING CRITERIA

SRDC and collaborators used the following overarching criteria, defined by OLES, to guide our work on definitions and constructs:

- **Work-focused and transferrable:** All skills in the framework should be applicable to the majority of occupations in the Canadian labour market. While the emphasis is on employment contexts, we also made sure all skills are transferrable to other non-work contexts, so that Canadians recognize the importance and relevance of these skills in other life contexts.
- **Durable or enduring:** The definitions and constructs of all skills should be responsive to evolving labour market needs. This also emphasizes the need to better reflect trends of technological advancement and application in the modern labour market.
- **Assessable:** All skills in the framework should be defined and constructed in a way that can inform and facilitate the development of assessments. Ideally, skills should be conceptualized to be demonstrable, assessable, and comparable in both quantitative and qualitative methods.
- **Teachable/Learnable:** All skills in the framework should align with the learning objectives and contexts of employment training. Based on the definitions and constructs provided in the framework, training delivery practitioners should be able to develop and implement training materials to address learners' skill gaps. The skills in the framework should be malleable with a potential for learners to show some skill improvement commensurate with the appropriateness, type, and intensity of training. Note that effective training models and strategies may vary for different skills (e.g., literacy versus social-emotional skills).
- **Broadly recognized:** The revisions and finalization of the *Skills for Success* framework must be informed by Canadian and international adult skills frameworks, reflecting recent developments in the field.
- **Flexible and inclusive:** Finally, all skills in the framework should reflect the diversity of lived experiences of Canadians, emphasizing inclusivity.

In addition, because OLES' original intent was to conceptualize a framework made up of nine distinct skills, our goal was to minimize redundancy or overlap in definitions and constructs

across skills. We recognize that skills interact and interconnect when applied in real-world situations, and that (as pointed out by the team from Bow Valley College) the majority of workplace tasks, particularly those at higher levels of complexity, require the application of multiple skills simultaneously. For example, problem solving in the workplace is likely to be enhanced if embedded within a collaborative process that requires each team member to understand and adhere to respectful and constructive communication expectations.

While skills are likely to interact in multiple ways, it is not immediately clear what specific connections between sets of skills will be important in different contexts. Thus, other collaborators affirm the importance of defining skills independently, at least initially, to facilitate the development of skill-specific learning materials and assessment tools that can be used to understand unique learner profiles. For example, when Creativity and Innovation are assessed in ways that are different and independent of Problem Solving, it is possible to discuss with a learner who scores high on the former but low on the latter the specific areas they can work on to address their skill gaps.

As patterns of interconnection between skills become more clearly understood, learning and assessment materials can be adapted accordingly. For example, practitioners can combine materials designed for Problem Solving, Collaboration, and Communication to design a training program targeting tasks that require the simultaneous application of all three skills.

UPDATING CORE LITERACY SKILLS

Reading, Writing, and Numeracy

Reading, Writing, and Numeracy are three of the core literacy skills in the Essential Skills framework. Document Use is another core literacy skill in the original framework that has been widely validated and shown to be well-aligned with the job performance requirements of multiple sectors. However, Document Use as a *skill label* is not broadly recognized. In more recent international skill frameworks, it is also not included as a discrete skill – for example, the 2012 PIAAC framework grouped constructs of Document Use and Reading together under the label of “literacy skills.” The opportunities to update and modernize these literacy skills were as follows:

- **Embed relevant constructs of Document Use** within each of the three skills, to ensure we preserve the key constructs that are predictive of labour market success.
- **Update their definitions and constructs to better reflect the evolving labour market**, considering new contexts and applications for Reading and Numeracy, as well as areas

where Writing needs modernization, including investigating ways to mitigate some of challenges around its assessment development.

Digital

In this connected economy of the 21st century, Digital skills have moved from being optional to being critical for successful labour market participation (UNESCO, 2018). The vast majority of jobs today require people to have at least the foundational digital skills – e.g., using a computer, using a mobile app, or operating other handheld devices (Lane, 2019). The overarching goals and objectives in updating the definitions and constructs of Digital skills were as follows:

- Integrate new contexts and applications in the labour market.
- **Ensure inclusivity**, reflecting a wide range of basic and advanced digital skill needs in today's world of work.

THE CHALLENGE OF DEFINING SOFT AND SOCIAL-EMOTIONAL SKILLS

The new *Skills for Success* framework includes soft skills that align with the original Essential Skills framework (i.e., Problem Solving, Communication, and Collaboration, aligning with Thinking, Oral Communication, and Working with Others, respectively), as well as new social-emotional skills (i.e., Adaptability and Creativity). Unlike the core literacy ones, these are commonly seen as *complex abilities or personal attributes*, rather than *independent, learnable, or teachable skills* that can be influenced through targeted interventions. Even in the ESDC Skills and Competencies Taxonomy, Adaptability and Creativity are currently conceptualized as personal qualities. While Problem Solving, Communication, and Collaboration are conceptualized as skills, there are important processes related to these skills that are captured under personal qualities – e.g., concern for others, cooperation, judgement, initiative, attention to detail (see Table 1 for a brief comparison between personal attributes and skills).

This conceptualization of soft skills as personal attributes is not particularly helpful for the broad range of training contexts in which we situate *Skills for Success*. If social-emotional skills are viewed as largely inborn, it may discourage a growth mindset among both learners and practitioners, and instead foster beliefs that those who currently lack certain traits would not benefit from further training. Similarly, if the belief is that such skills cannot be trained informally or formally on the job it would encourage employers to only hire or advance those who already possess the required levels of skill. We see more opportunities to develop and enhance soft and social-emotional skills among adult learners if these skills are recognized as

independent, learnable, and teachable through targeted interventions. Indeed, there is a growing body of evidence suggesting that what have nominally been considered personality traits are in fact malleable throughout the life course (Roberts et al., 2013) and responsive to intervention (Roberts et al., 2017).

In the employment training context, for example, practitioners targeting social-emotional skills can help learners understand the purpose and format of work-related tasks, expectations, and/or workplace culture. Learners can practice applying and repeating a series of techniques and strategies to successfully complete work-contextualized tasks. Over the course of the training, the process of repeatable, contextualized application helps learners form and strengthen useful work habits, leading to the development and enhancement of skills which can then be transferred to the actual workplace. They also build self-awareness and learn to manage their emotions and behaviours in ways that support their work. Informed by these concepts, we aim to ensure the soft and social-emotional skills are defined and constructed truly as skills when conceptualizing *Skills for Success*, moving away from the language of personal attributes.²

Table 1 Comparing and contrasting personal attributes and skills

Personal attributes	Skills
The inherent and developed aptitude that facilitates the acquisition of skills and knowledge.	The ability to successfully enact a repeatable process.
Develop early in life through the interaction of both genetics and environmental factors.	Continue to be developed and enhanced throughout life.
Take longer to change in adulthood via extensive interventions such as post-secondary education.	Are amenable to change via targeted interventions that help individuals apply techniques, strategies, or steps to successfully complete a contextualized task.

Sources: SRDC integration of the conceptualization of skills and personal attributes from ESDC Skills and Competencies Taxonomy, the UK Skills Builder framework (2020), and work done by Heckman and Krautz (2012).

² In the K-12 educational context, social-emotional learning has shown to yield positive benefits for learners. The collaborator team Scott Murray, Richard Roberts, and Janet Lane highlighted a study that used impact evaluations of six prominent social-emotional interventions for K-12 students to calculate returns on investment (Belfield et al., 2015). The study found that on average, for every dollar invested equally across the six interventions, there is a return of eleven dollars in terms of benefits to the participants during the interventions, immediately after the interventions, as well as in the longer-term well into participants' adulthood.

More work is needed to conduct such rigorous cost-benefit analysis for the social-emotional learning of adults. This is a new area that offers exciting opportunities for future research, ideally utilizing longitudinal data from impact studies to further investigate the effectiveness of social-emotional learning transfer and application to the workplace and other life contexts for adults.

TOWARD SYMMETRY AND CONSISTENCY

A key characteristic of skills, as we conceptualize them in this report, is that they are amenable to growth via targeted interventions of the range of lengths and formats that employment training programs typically follow. Therefore, **to ensure that *Skills for Success* are conceptualized in ways that are helpful for the employment training context, we define them in terms of learnable, demonstrable, and repeatable processes.** The focus of skills development in the employment training context is on producing an observable process in a consistent manner, regardless of the resources and strategies that are recruited and utilized to enable that act. This places the emphasis on concrete behaviours but acknowledges that different individuals may apply different resources and strategies to produce a process or skill. This also allows us to articulate both core literacy skills and soft and social-emotional skills in the same way. Both can be discussed at the level of observable repeatable processes, even though different techniques, knowledge, and personal qualities can be applied to varying degrees. Defining skills as repeatable processes also ensures the conceptualization of both core literacy skills and soft, social-emotional skills are symmetrical.

In addition to defining each skill in terms of repeatable processes, we also aimed to conceptualize the constructs within each skill – i.e., important sub-processes or behaviours that make up each skill – in the same way. Breaking down broadly defined skills to the more granular level of constructs ensures that for each skill a fuller scope of components is reflected in the framework to better inform curriculum, assessment, and proficiency level development. **However, the range of actions, processes, and descriptors built into the constructs at this stage represent a provisional, not definitive, structure for each skill.** As cautioned by the collaborator team from WEM, building multiple actions and processes into a single definition or construct may make assessment difficult, if for example the constructs underlying a skill (or sub-components underlying a given construct) are in fact unconnected. Indeed, as measures are developed for each set of constructs, psychometric testing will show to what extent the resulting test items or tasks can actually be scored and interpreted together, and thus to what extent the provisional structure proposed below for each skill needs to be adjusted (see section on Building Valid Assessments for Proficiency for more information).

The skills constructs as presented below were developed based on the early work of the *Skills for Success* Advisory Group and Working Group, followed by the targeted application of concepts from several existing Canadian and international skills frameworks, and finally fleshed out in detail by leveraging the broad range of expertise provided by each of our project collaborators. Nonetheless, **there will be opportunities to further refine the processes and facets within individual constructs as our understanding evolves with the significant work that still lies ahead in curriculum and assessment development, further engagement and testing with practitioners, and the inclusion of diverse voices.** This will include opportunities to ensure the constructs are clearly and consistently defined and differentiated from one another, include

all the key processes required to enact the skill construct, are relevant for training and work contexts, and reflect the experiences of diverse people in Canada.

To recap, the scope and structure for collaborator review, feedback, and updates on definitions and constructs were guided by the following:

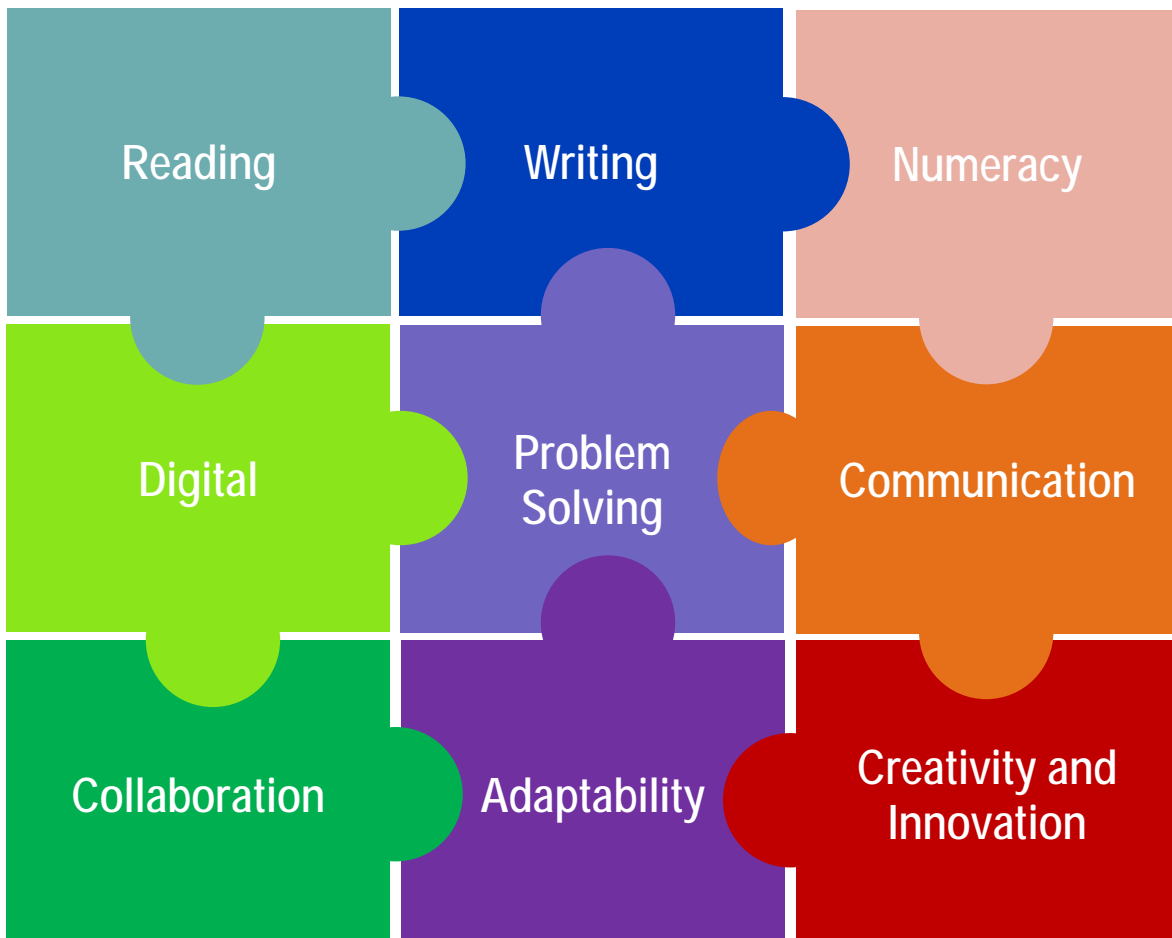
- **A standardized process for defining skills and constructs:** Conceptualize all skills as the ability to enact a repeatable process to bring symmetry and consistency to the definitions and constructs of both literacy skills and soft, social-emotional skills.
- **Tighter alignment with OLES overarching criteria:** To ensure that the definitions and constructs align more tightly with the overarching criteria set by OLES, i.e., that skills be work-focused and transferrable, durable or enduring, assessable, teachable/learnable, broadly recognized, flexible and inclusive.
- **Further modernization based on recently developed skills frameworks:** Incorporate recent developments in the field of adult literacy and skills development to align with frameworks from other jurisdictions and be responsive to the evolving skill demands of the global economy.

DEFINITIONS AND COMPONENTS

Skills for Success are the skills needed to participate and thrive in learning, work and life.

Skills for Success include skills that are foundational for building new skills and knowledge and important for effective social interaction. These skills overlap and interact with each other, and with other technical and life skills. They are inclusive and can be adapted to different contexts.

Skills for Success are for everyone – employers, workers, training providers, governments, and communities.



READING

Definition

Reading is your ability to find, understand, and use information presented through words, symbols, and images.

Reading components

1. Identify the task that requires you to read

- Recognize why reading will help you achieve a goal
- Identify the goals and purposes of the reading activity

2. Identify the information contained in the document(s)

- Locate key information in various types of documents (e.g., tables, charts, maps, articles, magazines, and books) (Note: this includes some Document Use elements from former Essential Skills model)
- Use methods such as scanning, skimming to identify key information (Note: this includes some Document Use elements from former Essential Skills model)
- Look through multiple pieces of information contained in documents (Note: this includes some Document Use elements from former Essential Skills model)
- Pull out relevant information from documents (Note: this includes some Document Use elements from former Essential Skills model)

3. Make connections between different parts of the document(s)

- Connect different parts of the document(s), including continuous and non-continuous texts (Note: this includes some Document Use elements from former Essential Skills model)
- Identify relationships in the document such as cause-effect, problem-solution, category-example, compare-contrast, and whole-part relationships

4. Understand and apply the information

- Understand the information in the context of the whole document(s) (Note: this includes some Document Use elements from former Essential Skills model)
- Make inferences to obtain the correct information (Note: this includes some Document Use elements from former Essential Skills model)
- Compare and contrast information (Note: this includes some Document Use elements from former Essential Skills model)
- Sort information (Note: this includes some Document Use elements from former Essential Skills model)
- Understand the purpose of the document(s) (Note: this includes some Document Use elements from former Essential Skills model)
- Comprehend the main theme of the document(s)
- Paraphrase or summarize information to show understanding
- Apply the information to complete tasks

5. Evaluate the document(s)

- Evaluate the purpose, tone, and structure of the document
- Assess the relevance, credibility, and truthfulness of the information or arguments presented, especially from online sources

6. Reflect on the document(s)

- Determine the intended audience of the document
 - Where relevant, reflect on how the author is using evidence and/or language to achieve a particular purpose
-

Why is this skill important?

The changing labour market and advances in technology require reading skills for learning and work. Strong reading skills allow you to do your job and to work safely, and efficiently. You use reading skills to learn other skills, for example, by reading online learning resources. Reading is also important in day-to-day activities, for example, to understand road signs or to follow the instructions on a medicine bottle.

WRITING

Definition

Writing is your ability to share information using written words, symbols, and images.

Writing components

1. Identify the task that requires you to write

- Identify the goals and purposes of the writing task (e.g., to narrate, to persuade)
- Identify the topic
- Identify the audience

2. Plan the writing task

- Identify the information to include in the writing task (Note: this includes some Document Use elements from former Essential Skills model)
- Determine how much you need to write and the level of details to include (Note: this includes some Document Use elements from former Essential Skills model)
- Gather information (Note: this includes some Document Use elements from former Essential Skills model)
- Generate ideas
- Draft outline

3. Use written words and phrases so you can achieve the purpose of the writing task

- Use correct spelling
- Use punctuation so that your meaning is clear
- Use correct grammar (e.g., appropriate verb tense, subject-verb agreement)
- Produce legible handwritten text when needed (Note: handwritten text may become obsolete over time) (Note: this includes some Document Use elements from former Essential Skills model)

4. Choose the appropriate language and style for the writing task

- Use formal and informal tone and language appropriate for audience and context
- Use different styles for different purposes (e.g., persuasive techniques, supporting evidence, technical vocabulary)

5. Choose the appropriate format for the writing task

- To organize information or ideas, use paragraphs, bullet points, numbered list, sub-headings, etc.
- To enhance the presentation of information or ideas use charts, tables, graphs, etc. (Note: this includes some Document Use elements from former Essential Skills model)
- Use pre-determined or pre-formatted workplace documents (e.g., accident report forms, timesheets, memo boards) (Note: this includes some Document Use elements from former Essential Skills model)

6. Review and revise your writing

- Proofread and correct your writing for grammar and spelling
- Proofread and revise your writing for accuracy, meaning, and tone

Why is this skill important?

The changing labour market and advances in technology require writing skills that are suitable for different situations and digital platforms. At work, we use writing skills to write memos, emails, or reports. Writing skills are also needed in daily life to fill out a credit card or job application. Knowing what to write, how much to write, and in which style to write is important. Writing skills ensure your writing is suitable for your purpose, the intended reader, and the context.

NUMERACY

Definition

Numeracy is your ability to find, understand, use, and report mathematical information presented through words, numbers, symbols, and graphics.

Numeracy components

1. Identify the task that will require you to use numeracy

- Recognize mathematics as the suitable tool for the task
- Identify the question you will need to be answered
- Identify the form of the response expected

2. Identify the mathematical information

- Locate key details, concepts, and other mathematical information (Note: this includes some Document Use elements from former Essential Skills model)
- Use methods such as scanning and skimming to identify relevant information (Note: this includes some Document Use elements from former Essential Skills model)

3. Make connections between related pieces of mathematical information

- Make connections between known and unknown in the mathematical problem (Note: this includes some Document Use elements from former Essential Skills model)
- Make connections between different parts of the information presented (Note: this includes some Document Use elements from former Essential Skills model)

4. Apply mathematical operations and tools you will need to answer the question

- Calculate
- Order or sort (Note: this includes some Document Use elements from former Essential Skills model)
- Measure
- Estimate
- Apply a combination of operations and tools to complete a complex task

5. Interpret and evaluate the information

- Assess the purpose of the task, the validity of the data presented, and the meaning and implications of the results
- Evaluate the information or results within the context and whether they make sense (e.g., check if the answer is of the expected magnitude or precision)

6. Share the mathematical information, results, and implications

- Use different means and methods to share the information, its results, and implications, such as in a presentation, in writing, through a diagram, map or graph. (Note: this includes some Document Use elements from former Essential Skills model)

Why is this skill important?

The modern economy requires numeracy skills that go beyond basic arithmetic, and understanding numbers remains critical to functioning in today's society. Many jobs require the ability to work with numbers and math. For example, we use numeracy skills to measure materials or count inventory at work. Numeracy skills are also needed in a wide variety of daily contexts. For example, you use numeracy skills to manage your finances or to make sense of statistics in the news.

DIGITAL

Definition

Digital is your ability to use digital technology and tools to find, manage, apply, create and share information and content.

Digital components

1. Use digital devices including computers, tablets, smart phones, and other handheld devices

- Identify the goals and purposes of the digital task
- Identify and use the basic functions common to most devices
- Know the basic terminology common to most digital devices

2. Use common digital tools to complete tasks

- Use software, mobile applications, and other digital tools for a purpose (e.g., Word, Excel, PowerPoint, data analysis software)
- Select appropriate digital tools based on your goals and purposes of tasks
- Keep digital tools up to date (e.g., download updates)
- Use digital tools to enhance accessibility for yourself and others when needed (e.g., screen magnifier and other assistive technologies)

3. Use digital information

- Navigate digital content (e.g., know which part of the website to click, know when to click the “Back” and “Next” buttons, know how to scroll through documents)
- Carry out digital searches to find information and content (e.g., know how to use the ‘Search’ function in a PDF document, know how to use search engines such as Google)
- Evaluate the relevance and reliability of digital information (e.g., recognize which websites are credible from a list of Google search results)
- Store and organize digital information in a logical order (e.g., download online files in a local folder on a computer using files, folders, tags, etc.)

4. Use online tools and platforms

- Use online communication and social media platforms (e.g., Zoom, Twitter, emails)
- Use online information-sharing platforms (e.g., Dropbox)
- Use online forms (e.g., for purchases, opening accounts, job applications)

5. Apply safe and responsible practices online

- Understand best practices in data storage and sharing (e.g., know how to create a password to protect data)
- Protect personal information and privacy of yourself and others (e.g., know what personal information can and cannot be shared online)
- Protect data and devices from online risks and threats (e.g., use virus protection software, know how to avoid phishing emails)
- Make secure online transactions (e.g., know how to encrypt a data file with a password before making an online transfer, know where and how to enter payment details to safely make online purchases)
- Use appropriate language and behaviour online
- Recognize and minimize the effect of physical and mental stresses of being online

6. Update and upgrade digital skills

- Use your existing digital skills and knowledge to learn and apply new and advanced digital skills as needed (e.g., learning basic coding, learning about block chain, virtual reality, specialized electronic equipment at work)

Why is this skill important?

Digital technology has changed the way you find and share information, solve problems, and communicate with others. Most jobs now use digital skills, and you need them when you apply other skills such as reading, writing or numeracy. Digital skills help you keep up with changing demands in the modern workplace. In daily life, you need digital skills to connect safely socially and to make use of online resources and services.

PROBLEM SOLVING

Definition

Problem solving is your ability to identify, analyze, propose solutions, and make decisions. Problem solving helps you to address issues, monitor success, and learn from the experience.

Problem solving components

1. Identify the issue to be addressed

- Identify the nature of the issue (e.g., is it familiar or new, simple or complex?)
- Identify if you need to make a decision.
- Identify the goals and objectives you need to achieve

2. Gather information to help you address the issue

- Conduct research and collect relevant information (e.g., identify existing procedures to address similar issues in the past)
- Recognize and manage biases, pre-conceptions, and habits
- Differentiate fact from opinion
- Seek help from others if needed

3. Analyze the issue

- Think critically about the issue using the information gathered
- Break down the issue into smaller parts
- Seek patterns, make connections across information
- Identify possible cause-and-effect linkages

4. Develop multiple routes of action

- Create multiple options for action (i.e., based on information you have gathered, end goals, what has been successful in the past, etc.)
- Consider the short- and long-term implications of different options

5. Address the issue

- Use thinking strategies to choose the best course of action (e.g., logical thinking, if-then thinking)
- Apply the best course of action to make a decision or solve a problem
- Monitor and adjust the decision-making or problem-solving process to achieve the best results

6. Evaluate the effectiveness of the solution or decision

- Reflect on the success of the process and the end result
- Provide opportunities for feedback from others
- Identify best practices and lessons learned from the experience

Why is this skill important?

Every day you use information to make decisions, solve problems, and take actions. This can include thinking about different ways to complete a task and choosing the best solution, or deciding what to do first when several activities are competing for your attention. The ability to think, make decisions, and solve problems effectively improves the way you carry out activities, and meet goals and deadlines at work or in other daily life situations. Strong problem-solving skills will help you gather the right information, identify, and solve problems, and make better decisions. As you learn from these experiences, you will strengthen your problem-solving skills and more quickly and effectively adapt to change.

COMMUNICATION

Definition

Communication is your ability to receive, understand, consider, and share information and ideas through speaking, listening, and interacting with others.

Communication components

1. Listen with intention (e.g., pay attention)

- Interpret other people’s meaning while considering language, gesture, emphasis, other verbal and non-verbal cues
- Consider your own and others’ personal bias and judgment (e.g., unconscious and conscious)
- Use appropriate body language to show that you are paying attention (e.g., do not fidget, maintain focus on the speaker), show support, or convey emotion
- Ask questions to confirm your understanding
- Be able to summarize and paraphrase key points when needed

2. Listen to understand

- Detect the speaker’s purpose and intention
- Understand the information within the given communication context (e.g., speaker’s intent, actions expected of listener)
- Assess reliability and validity (e.g., fact check)
- Analyze other people’s arguments and positions
- Interpret and reconcile different perspectives
- Prepare a response that you can make when appropriate

3. Speak with clarity

- When speaking as appropriate to the situation, use grammar, pronunciation (even with accent), cadence or rhythm

4. Speak with purpose

- Use appropriate examples, facts, content, and structure depending on your goals and purposes (e.g., to convey or summarize information, to explain, or to persuade)
- Convey a message such that the listener understands the purpose

5. Adapt to your audience and contexts

- Identify and understand the needs, preferences, and interests of your audience, including differences in communication and interaction styles (e.g., culture, abilities)
- Identify and understand contexts
- Choose content, tone, language, gesture, and approach depending on your audience and contexts
- Understand and manage risks or consequences (e.g., to relationship or reputation, sharing confidential information)

6. Adapt to other people's different communication modes and tools

- To make the best use of different communication modes and tools, choose the appropriate content, structure, and approach

Why is this skill important?

Strong communication skills help you share information in a way that others can clearly understand. You also need strong communication skills to listen to, pay attention to, and understand others. In all jobs, communication skills are important for developing good working relationships with co-workers and clients, including those from different backgrounds and cultures. You also need these skills to work effectively in a team, and to gather and share information while problem solving.

COLLABORATION

Definition

Collaboration is your ability to contribute and support others to achieve a common goal.

Collaboration components

1. Work well with other people

- Engage in trust building behaviours
- Adhere to social and organizational rules (e.g., be on time)
- Encourage supportive and cooperative behaviours, language, attitudes, and approaches
- Assess strengths and weaknesses of yourself and others

2. Value diversity and inclusivity of others

- Understand that people from different cultures, backgrounds, and abilities can have different customs, values, and ways of thinking and acting
- Acknowledge and accept differences among people (e.g., characteristics, abilities, cultures, religions, values)
- Respond without judging people for their different opinions, ideas, and views
- Adapt to people's different styles of interaction when possible and appropriate

3. Manage difficult interactions with other people

- Engage in productive discussions
- Anticipate and address interpersonal barriers
- Discuss, negotiate, and resolve difficult interactions in a sensitive and helpful manner

4. Facilitate an environment where you can collaborate with others

- Acknowledge roles of yourself and others
- Understand and adapt to needs, strengths, and weaknesses of others
- Support others through coaching, mentoring, and motivating

5. Achieve a common goal with others

- Take responsibility to make contributions and complete tasks
- Consult and share with others when needed and appropriate
- Ensure opportunities for others to contribute
- Assess and mitigate risks and manage resources (e.g., via systems thinking)

6. Reflect and improve on how well the team works together

- Reflect on team performance
- Make constructive suggestions for improvement
- Use feedback constructively

Why is this skill important?

Today people are more connected within communities, across the country, and around the world. Modern workplaces are more diverse, and many jobs require you to work with others from different backgrounds and cultures to complete tasks and solve problems. It is important to be able to work respectfully with people who have different professions, experiences, cultures, and backgrounds. Collaboration skills help you perform better in a team by understanding how to support and value others, manage difficult interactions, and contribute to the team's work. Strong collaboration skills help you build and maintain positive relationships with others at work, in school, and in other parts of your life.

ADAPTABILITY

Definition

Adaptability is your ability to achieve or adjust goals and behaviours when expected or unexpected change occurs. Adaptability is shown by planning, staying focused, persisting, and overcoming setbacks.

Adaptability components

1. Demonstrate responsibility

- Focus your attention on the current task
- Minimize distractions
- Manage your time to demonstrate your understanding of limited resources (e.g., punctuality, not wasting time)
- Fulfill assigned tasks to demonstrate dependability

2. Persist and persevere

- Anticipate changes
- Reflect and evaluate what changes have happened and what is coming
- Identify when to keep trying and when to adapt your approach and mindset
- If appropriate, keep trying when something does not go according to plans
- If appropriate, modify your plans and approaches to reflect changing circumstances

3. Regulate your emotions when appropriate

- Be positive and optimistic
- Stay calm when you are facing setbacks
- Recover when you are not able to stay calm
- Encourage others to stay calm

4. Set or adjust your goals and expectations

- Set goals and expectations based on your skill sets, available resources and supports
- Define expectations and standards for reaching goals

5. Plan and prioritize

- Define tasks, milestones, and longer-term strategies to achieve goals
- Prioritize and choose an order of tasks according to your circumstances

6. Seek self-improvement

- Reflect on your own skill sets and resources
- Find opportunities for improving yourself
- Learn from setbacks and mistakes

Why is this skill important?

Major changes in society are affecting how you work, live, and learn and requiring you to constantly adapt to change. Strong adaptability skills will help you deal effectively with change and to learn new skills and behaviours when needed, stay focused on your responsibilities and goals, and not give up when situations are difficult. They will help you stay positive and manage the stress that can come from change in the workplace, community, and your life at home.

CREATIVITY AND INNOVATION

Definition

Creativity and innovation is your ability to imagine, develop, express, encourage, and apply ideas in ways that are novel, unexpected, or challenge existing methods and norms.

Creativity and innovation components

1. Use your imagination and curiosity

- Imagine different situations and possibilities
- Show interest in learning and applying new things
- Seek a wide range of stimuli and experiences
- Be open to new ideas without judging and setting limitations

2. Identify opportunities for you to innovate

- Challenge norms, habits, and preconceptions where appropriate
- Identify artificial constraints

3. Generate ideas that are novel to yourself or others

- Deviate from existing processes, thinking, and approaches
- Use an inquisitive approach (e.g., ask questions even when there is no obvious answer)
- Seek patterns where patterns may not be readily apparent (e.g., combine unrelated attributes)
- Acknowledge and work with uncertainty and unpredictability

4. Develop your ideas

- Reverse ideas and approaches to see if the opposite is true
- Expand on ideas and approaches

5. Apply your ideas

- Act on the creative ideas and approaches to make tangible and useful contributions
- Expect failures
- Learn from failures to improve

6. Facilitate a creative and innovative environment for yourself and others

- Encourage habits and behaviours that facilitate creativity and innovation in yourself and others (e.g., lightheartedness, playful approach, healthy competition)
- Support and motivate others to be creative by coaching and sharing tools, information, and ideas

Why is this skill important?

Creativity and innovation skills help you come up with new, unique, or “outside the box” ideas or to approach something completely differently than in the past. A curious mindset that finds inspiration from a broad range of experiences and perspectives helps develop creativity and innovation skills. Employers are increasingly seeking people who can apply creativity and innovation skills to their work in our increasingly diverse settings, and to come up with new solutions or approaches to tackling challenges. With strong creativity and innovation skills, you can also support and inspire others to develop their own creativity and innovation.

VALIDATION – FEEDBACK FROM PRACTITIONERS

This section discusses the themes emerging from the practitioner focus groups, with an overarching summary of selected themes in Figure 1. Key opportunities for future work to address gaps and competency needs identified by practitioners are also presented in this section.

MAJOR THEMES

Practitioners were delighted to see the renewed emphasis on soft and social-emotional skills. Practitioners saw Problem Solving, Communication, Collaboration, and especially Adaptability as key for success in the labour market, in learning, and in life. In the

“Especially in this COVID time, you just have to be constantly adaptable.”

employment context, these skills are crucial not only for entry but also retention and advancement on the job. As one practitioner stated, “there is a really huge place for these social-emotional skills...education and learning and training is an emotional business.”

Practitioners highlighted the timeliness of the updated framework – skills such as Adaptability and Creativity and Innovation are essential for the pandemic and beyond. For example, many stressed the importance of being able to adapt to change, especially transitioning to virtual learning and work environments. Practitioners also applauded the inclusion of emotion regulation as a construct of Adaptability. This has been an area of focus and concern for many mentors, service providers, and employers, and is vital for Collaboration. Some practitioners also suggested Creativity and Innovation could raise awareness and increase respect and valuing of the traditional knowledge and creative skills of Indigenous learners, which are not always formally recognized. This can create “an openness of context and openness of perspective.”

“Sometimes our creativity comes out in various ways and especially in the Indigenous communities. They have so much creativity but often don’t see it as a skill set.”

“Soft skills facilitate the acquisition and development of technical skills.”

Soft and social-emotional skills were seen as foundational to technical and literacy skills development. Instructors working with specific industries commented that soft skills facilitate the learning and development of technical competencies on the job. Similarly, in the employability training context, instructors often observed that learners need to strengthen their abilities to

communicate and collaborate with others in group work before they can fully and successfully engage in structured programs focusing on literacy skills (e.g., Reading, Writing, or Numeracy). As well, learners need a strong ability to adapt, persist, and regulate emotions when facing challenges to make the most out of classroom training (e.g., Computer Use class). In particular, Adaptability is viewed as foundational for the development of Digital skills. As one practitioner said, “the adaptability and the digital skills tie hand in hand.” Overall, practitioners not only welcomed but celebrated the inclusion of soft and social-emotional skills in the framework.

Skills for Success align well with learner needs. Instructors felt that key revisions and additions to the framework better reflect learner needs. For example, they liked how

“Embedding Document Use contextualizes it very usefully.”

Communication is broadened from Oral Communication to include both verbal and non-verbal elements, with an emphasis on active listening. As one practitioner described, “there are two sides of communication – outward and inward.” Listening and observation skills are considered as important as speaking skills. While some

said they would miss seeing Document Use as a standalone skill, others saw its integration into other literacy skills as a helpful teaching tool.

Some shared that they have been blending the instruction of Document Use with other literacy skills in their practice for years. Others thought it would make communication with learners easier – they would not have to explain the nuanced and rather technical differences between Reading and Document Use, for example.

“If you are not paying attention to listening skills as well as speaking skills, you are losing half the picture right there. Not only what they display, but how they observe other people as well.”

Most importantly, practitioners thought learners could be empowered by learning soft and social-emotional skills (e.g., emotion regulation, collaboration with people, self-improvement), which enables them to deal with workplace issues in a constructive manner rather than giving up easily. Specifically, practitioners working with newcomers thought the newly added skills (i.e., Creativity and Innovation, Adaptability) help newcomer learners challenge their self-perceived limitations and “expand their boundaries.” Also, broadening Digital skills beyond

“Moving ahead in the labour market, I think you have to have new fresh ideas and always think outside of the box.”

computer use will help learners keep up with the rapid technological advancements in digital communication. Finally, almost all practitioners saw the inclusion of Adaptability as useful and timely. They agreed that the ability to plan, persist, adapt plans, and regulate emotions is fundamental to success in multiple work, learning, and life contexts.

Figure 1 Major themes from practitioner focus groups

Themes	Overarching comments	Selected comments on specific skills*
Properly emphasizes soft skills	Soft skills are foundational in facilitating the acquisition of literacy and technical skills.	Learners often need strong Communication & Collaboration skills before they can fully engage in classroom training on Reading, Writing, Numeracy . They need to learn not to give up - an Adaptability skill - before they can take full advantage of Digital training.
Aligns with learner needs	The framework provides the necessary language and scope for practitioners to discuss what learners need to succeed at work, in learning, and in life.	Communication was properly broadened to include verbal & non-verbal elements. Embedding Document Use in Reading, Writing, Numeracy makes it easier to teach. Adaptability - e.g., persist, regulate emotions when facing changes - is key to success.
Aligns with employer needs	Skills in the framework align with what employers value in their current and prospective employees.	Problem Solving was concretely described to facilitate customization to align with different sectors, industries, workplace preferences and practices. Communication & Collaboration with diverse people are crucial in the workplace. The broadened definition and constructs of Digital skills reflect labour market needs.
Resonates with Indigenous learning approach	The framework provides the foundation to develop materials to help learners connect their past experiences with their dream jobs and aspirations in life.	Creativity and Innovation align with a traditional learning approach that provides a safe space for creative ideas to emerge. Adaptability resonates with an approach where learners adapt past experiences and assets to build new skills and work toward future goals and aspirations.
Can facilitate youth empowerment	The emphasis on soft skills and the conceptualization of skills as repeatable processes inspire a strengths-based approach in youth programming.	Multi-barriered youth who have had negative experiences with the education system tend to thrive in a training model that involves coaching, self-reflection, & encouragement. Adaptability - persisting despite expected & unexpected challenge - is foundational. Creativity & Innovation can be applied to self: creative self-reflection of career path.
Can integrate with newcomer programming	The framework offers the necessary building blocks for practitioners to customize their programs to different language levels.	It is important to embed considerations of cultural diversity in Communication, Collaboration , & to a certain extent, Problem Solving, Creativity & Innovation . The framework provides a good starting point for practitioners to customize to align with diverse language abilities.

*Comments are selected to highlight major themes. For full comments please refer to the main text of the report.

Skills for Success align well with employer needs. Instructors delivering programs for specific industries were delighted to recognize the alignment between Problem Solving, Communication, Collaboration, and Adaptability with the skill needs articulated by employers. They believed the framework would be a good reference tool to share with employers. Particularly, practitioners approved of the way Problem Solving is described – the behaviour-based constructs resonate well with their lesson plans. They liked how it was comprehensive enough as well, allowing them to customize it to align with the preferred processes, methods, or terminology unique in specific workplaces.

In addition, most practitioners emphasized the importance of strong Communication and Collaboration skills, especially in the context of diversity and inclusion in the workplace. Updates to Digital skills were also well-received – the expansion to include digital tools, devices, and platforms other than computers was seen as timely, as practitioners felt this helps tighten the alignment with modern labour market needs. Finally, all the skill components included under Adaptability were recognized as key to success in the workplace. For example, one practitioner highlighted that being positive and optimistic is what employers expect from their employees. Another emphasized that self-improvement leads to better outcomes for employers. Again, they have been teaching these skills for years and were pleased to see them formally described and highlighted in the framework.

Skills for Success resonate with the traditional approach to learning in Indigenous cultures. Several practitioners working with Indigenous communities highlighted the alignment between *Skills for Success* and the learning traditions of Indigenous cultures. The most notable example was Creativity and Innovation, whose constructs include the ability to foster a safe environment for new and novel ideas to emerge. Specifically, a practitioner working with Indigenous communities quoted his late mentor that creativity is like “unclogging the dream machine” – in an Indigenous learning context, the individuals are often provided with

One practitioner quoted his late mentor that Creativity is like ‘unclogging the dream machine.’

a safe space to articulate, develop, and build on new and novel ideas, while supporting and encouraging others to do the same. Based on his teaching experience and observations, “creativity often begets creativity,” and he liked that the definition and constructs acknowledge the importance of a creative environment.

In addition, one instructor saw the opportunity to use Adaptability to support another traditional learning approach. This approach encourages skills development through repetition and context transfer. More specifically, the instructor would guide learners through exercises that ask them to connect their past experiences – the volunteer, community, or family-related work they have done – with future goals and aspirations – the career they want to have, for example. The instructor would then help learners see how they can apply their skill assets from one context to

another, continuing to adapt and build on what they have to get to where they want to be in their employment, learning, or life journeys.

With these examples, practitioners illustrated the variety of opportunities to use different combinations of skills as articulated in the framework to facilitate encouraging and introspective exercises. They saw ways to develop materials linking the traditional skills from Indigenous cultures with skills that could help an individual participate more fully not only in the labour market, but in life.

Articulating skills as repeatable processes and behaviours allows for a strengths-based approach to learning.

Practitioners commended the standardization of skills as repeatable processes, as it facilitates more positive, strengths-based discussions with learners. Those with experience teaching soft and social-emotional skills found it especially useful. They liked how it moves away from judging personal qualities, going beyond the language of deficits and gaps, and moves toward discussions of processes and strategies that learners can apply in multiple transferrable contexts. The framework turns seemingly fixed personality traits or pre-dispositions into teachable skills. The repeatable aspect of these processes was also one of practitioners' favourite features. As one practitioner succinctly put it, "repetition fosters skills development." Another practitioner suggested that conceptualizing soft and social-emotional skills as repeatable behaviours could motivate learners to learn because they are assured mastery through repetition. More importantly, according to practitioners, repeatable, effective behaviours are the fundamental building blocks of many transferrable skills that are key to workplace success. They felt that conceptualizing skills as repeatable processes ensures this teaching practice is properly underscored in the framework.

"Repetition fosters skills development."

This strengths-based approach to learning can be particularly useful for youth programming.

According to employment training instructors, multi-barriered youth who have had negative experiences with the formal education system often thrive better in a training model that involves coaching, self-reflection, and encouragement. For example, one practitioner described that she would often start a class by asking learners to reflect on their soft skill strengths – Problem Solving and Creativity and Innovation, for example. She would then introduce exercises that encourage learners to use their strengths as a foundation to expand their skill sets, build self-confidence, and develop a positive outlook on life.

"It's an empowerment training model."

Adaptability was raised as another fundamental competency in training models for youth. Practitioners emphasized the need for youth learners to accept that things can go wrong, learn how to develop a plan to respond to expected and unexpected changes, stay calm while planning

and choosing appropriate next steps, and remain on track to achieve their goals. Practitioners recognized the challenges in developing materials to effectively teach these skills; however, they looked forward to future opportunities to pilot test innovative training models and share best practices with the training community.

Conceptualizing skills as repeatable process provides the necessary language to generate buy-in from employers.

Another notable theme that emerged from the discussion on the conceptualization of skills as repeatable processes was how to generate employer buy-in, support, and endorsement

for *Skills for Success*. In general, practitioners agreed that employers prioritize business needs such as productivity, revenues, and client relations. Employers value training programs that can address these business needs by enhancing employee job

“The repeatable process makes a lot of sense to me when I think about marketing a training program to employers.”

performance. One practitioner said these soft and social-emotional skills (e.g., Creativity and Innovation, online and in-person Collaboration) “sound a lot more palatable” to employers because they can directly see the close relationship between the acquisition of soft skills and employee performance improvement. Practitioners saw the definitions and constructs as providing useful language to convey to employers how *Skills for Success* training programs would meet their training needs. As an example, one instructor said he would describe to employers that such programs would provide the repeatable processes that employees can use to

“We will take the content here, turn it into our own recipe, and brand it as “Skills for Success Certified” for our industry.”

consistently find information faster (Reading and/or Digital skills), communicate better (Communication), collaborate more effectively (Collaboration), and innovate to improve productivity (Creativity and Innovation). Another expert illustrated the applicability of the framework by summarizing that he can see ways to use the content of *Skills for Success*, customize it with authentic workplace

materials to develop industry-contextualized training programs, and brand these programs as ‘*Skills for Success Certified*’ for the industry.

Practitioners recognized opportunities to integrate *Skills for Success* into programs and services for newcomers.

While some practitioners worried that newcomers with lower language levels may not see themselves in the framework, others saw this as an opportunity for instructors to further adapt and customize both the framework and resulting training materials to address newcomers’ unique learning needs, which include but go beyond language needs. A practitioner working with newcomers thought Adaptability is essential for newcomers, helping them identify existing transferrable skills that can be adapted and used in the Canadian workplace. They saw the constructs as useful guides to help design activities and

learning tasks around these skills to help newcomers become more successful in the workplace and in life. All practitioners saw Communication as a core skill for newcomers as well. In addition, they also saw possibilities to incorporate an introduction of Canadian workplace cultures into programs teaching Collaboration. While most liked Problem Solving and Creativity and Innovation, they expressed the need for clearer documentation showing how these skills are inclusive of diverse cultures, more concretely acknowledging culture-based differences in approaches to Problem Solving or appreciation of Creativity and Innovation.

OTHER NOTABLE THEMES

Besides the themes described above, other themes also emerged as practitioners took a closer look at some specific skills. Looking ahead, practitioners also specified that they would like to explore several key opportunities for future work. Particularly, some practitioners expressed concerns that **Creativity and Innovation** may not be applicable to as wide a range of occupations as other skills in the framework. In fact, some instructors thought that Creativity and Innovation may actually be *undesirable* in some occupations. For example, line production workers should strictly follow workplace protocols and procedures instead of trying to be creative and innovative on the job. At the same time, others disagreed and saw the application of Creativity and Innovation to be quite broad – for example, it can be thought of as a tool to foster an open-minded and creative approach to self-improvement and self-reflection. Regardless of how they saw Creativity and Innovation, most practitioners agreed that more resources, guidelines, and examples are needed to help practitioners fully recognize the value of Creativity and Innovation as a skill for success and allow them to find ways to incorporate the skill into their instruction.

Quite a few practitioners wanted to see **Thinking** (as defined in the original Essential Skills framework) more explicitly shown in *Skills for Success*. They recognized key elements of Thinking interwoven into a variety of skills, including Problem Solving, Adaptability, Creativity and Innovation, and even Digital. However, they would like to see more detailed documentation showing how such elements have been preserved and updated in the new framework, ensuring continuity in the transition from Essential Skills to *Skills for Success*.

Related to the theme of **continuity in transition**, practitioners expressed the need for more tools and resources comparing Essential Skills with *Skills for Success* to highlight key similarities and differences. This was seen as crucial to not only facilitate a smooth transition in training design and implementation but also foster innovation in training. These resources could be in the form of a detailed manual for practitioners in the short-run, or venues for the community to share best practices in teaching the new and updated skills in the framework in the medium term.

There was a consensus that practitioners may need to upgrade their own **competencies to teach and assess the soft and social-emotional skills** effectively. The types of classroom exercises to develop skills such as Adaptability and Creativity and Innovation, as well as the methods to assess learners' progress in these skills, are different from the core literacy skills. Practitioners expressed a need for resources and training opportunities to ensure they are well-prepared to adapt their own practices to better align with *Skills for Success*. In the long run, there are opportunities to **formalize a *Skills for Success* professional development and certification process for practitioners**.

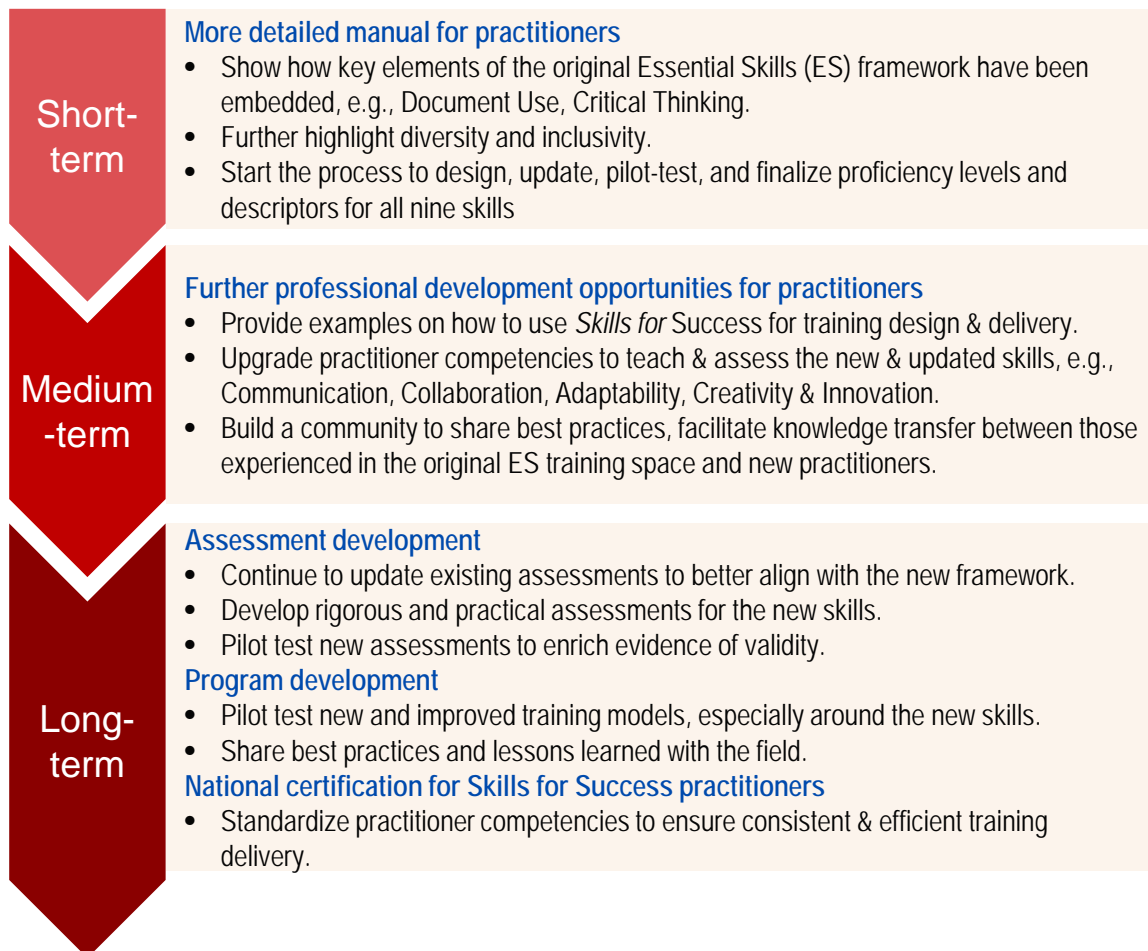
OPPORTUNITIES FOR FUTURE WORK

The discussions with practitioners on how to roll out *Skills for Success* in the field led to several opportunities for future work. Figure 2 provides a summary of key opportunities as well as a suggested timeline for development and implementation. As shown in Figure 2, **in the short term**, practitioners would like to see **a more detailed manual on how to appropriately and effectively transition from Essential Skills to *Skills for Success***. They would like more guidance on how Document Use has been embedded into Reading, Writing, and Numeracy; what implications it may have on the re-design of training materials; and what changes they should expect in the re-design of assessment tools. They also would like more details on where critical thinking skills were incorporated in the framework. They would appreciate guidance on how to preserve key instructional tools of Thinking, update them when necessary to better align with Problem Solving, and interweave the materials into other skills that require elements of Thinking. One of the project collaborators, Kyle Downie, agreed and elaborated that it would be beneficial to iterate toward a manual on how to implement *Skills for Success* in a variety of training settings.

Practitioners would also like **more details on how diversity and inclusivity were considered and integrated in the framework**. While they recognized that this was indeed one of the lenses through which the framework was conceptualized, further documentations annotating more specifically where and how it has been applied would be valuable. Importantly, they would find guidance and resources helpful to understand and navigate the implications on training design and delivery. For example, practitioners are interested in how they can balance the teaching of soft skills valued in the Canadian workplace while also accommodating cultural differences. To illustrate, in some cultures, it can be considered disrespectful to challenge existing methods and norms as part of a creative process. Practitioners would appreciate guidance on how to address such cultural nuances. They also highlighted that inclusivity should extend to resource availability for learning and development of these skills. They would like to see more support provided for Indigenous Peoples and other learners from rural and remote communities to ensure, for example, their access to digital hardware and the Internet, which is foundational to digital learning success. For those working with newcomers, practitioners would like guidance

on how to ensure newcomer learners with lower levels of English language proficiency can take full advantage of curriculum and instruction based on *Skills for Success*, and how they can eliminate or reduce the impact of language barriers on skills assessments (e.g., collaboration skills might be there, but the learner may not have the language to show it). To briefly summarize the short-term opportunities, one of our collaborators Kyle Downie succinctly put it that it would be beneficial for the field to work toward a suite of new curricula aligned with *Skills for Success*, targeting diverse populations of learners and customized to a wide variety of training infrastructure and contexts.

Figure 2 Opportunities for future work



In the medium term, practitioners would appreciate further professional development opportunities, not only to be better prepared to roll out *Skills for Success* in their programming, but also to facilitate innovations in training design and delivery. Some ideas

included a venue, platform, or tool to share examples on how to successfully incorporate *Skills for Success* in their training model and instructional practices. Others would like to see more training opportunities for practitioners to especially upgrade their competencies to teach and assess the new and revised skills, i.e., Problem Solving, Communication, Collaboration, Adaptability, and Creativity and Innovation. To foster continuous improvement in the field, practitioners would like to build a **community to share best practices and lessons learned** during the transition from Essential Skills to *Skills for Success*, and beyond. This was seen as particularly helpful for the knowledge transfer between experienced practitioners who had worked with Essential Skills materials and new practitioners entering the field after the launch of *Skills for Success*. This theme was echoed by one of the project collaborators, Kyle Downie, who saw values in having consistency in the professional development of *Skills for Success* practitioners across the country.

In the long term, practitioners understood that while work is underway to create and update assessment tools aligning with *Skills for Success*, **evidence of validity, rigour, and usability of skills assessments needs to be solidified in the future**. Ideally, assessment tools should be field-tested to show that the resulting scores are appropriately linked to further success along participants' training and employment pathways. Practitioners saw such evidence of predictive validity useful to help them properly communicate the purpose of assessments to learners, and to facilitate the discussion of incremental progress learners make along the pathways. Most importantly, practitioners indicated the need to achieve a balance between rigour and usability in assessments – they valued tools that can produce results predicting success in the labour market and other contexts, but at the same time emphasized the need to minimize response burden for learners and administration burden for instructors. Practitioners also expressed the need to **continue pilot testing new, improved, and innovative training models, especially for Adaptability and Creativity and Innovation**. The updates and refinements in *Skills for Success* have so far inspired innovative ideas on curriculum design and training innovations. Practitioners would like to see these ideas pilot tested to gather evidence on effectiveness, drawing best practices and lessons learned to support training delivery in the long run. Taking it a step further, one project collaborator, Kyle Downie, recommended a **national certification model for *Skills for Success* practitioners** to ensure consistent, efficient, and effective training practices in the field. This would help ensure the field moves forward with a consistent and enriched understanding of best practices and lessons learned to continue to support Canadians with critical skills to successfully participate in work, in learning, and in life.

PROFICIENCY

PRELIMINARY PROFICIENCY DESCRIPTORS

In this section, we present the preliminary proficiency descriptors resulting from our review of existing proficiency documents, understanding of *Skills for Success* definitions and constructs, and synthesis of collaborator feedback. It is important to note that **these proficiency descriptors are provisional and – especially for the newer skills – are based on applying preliminary, high-level gradations to the language developed for the skill definitions and constructs. To develop more detailed proficiency scales for all nine *Skills for Success*, a structured, iterative, and evidence-based approach is needed, with curriculum design and assessment development experts working in tandem.** This approach is described more fully in a later section – for now, the provisional proficiency descriptions in this section are simply intended to follow from the definitions and constructs and start the conversation on proficiency.

Specifically for the existing core literacy skills – Reading, Writing, and Numeracy – we summarized the current descriptions of proficiency from the Reader’s Guide to Occupational Essential Skills Profiles (henceforth Reader’s Guide for brevity). For these skills, there is a rich body of national and international research to support the development of assessments with established psychometric properties as well as learning materials to guide skill development, each of which have been applied in a broad range of settings. We however recognized that more rigorous work is needed to update the proficiency of these skills, not only to reflect their new definitions and constructs, but to preserve their alignment with existing and emerging international work, most notably PIAAC.

Particularly, more intensive research is needed to ensure the revised proficiency levels of Reading and Numeracy skills, as defined in *Skills for Success*, align with the literacy and numeracy proficiency levels in PIAAC. The integration of Document Use into Reading also needs special attention. As the group of collaborators Scott Murray, Richard Roberts, and Janet Lane cautioned, document literacy and prose literacy were combined to become literacy as a single skill domain in PIAAC simply to free up measurement time to assess other skills. More research is needed to ensure updated assessments of Reading – as defined in *Skills for Success*, which includes Document Use constructs – align well with PIAAC without losing the predictive validity strengths of existing Document Use measures. Notably, there was no formal assessment of Writing in PIAAC because of the practical difficulties of assessing Writing in the context of an international assessment. The proficiency details on Reading, Writing, and Numeracy included in this section serve solely as a reminder of the latest available information on these skills. These descriptors follow the original 1-to-5 level divisions. These descriptors are **not** aligned with the

updated definitions and constructs of *Skills for Success*. More work is needed to tighten the alignment.

For the newer skills with a less established history of assessment and curriculum development – Digital, Problem Solving, Communication, Collaboration, Adaptability, and Creativity and Innovation – our provisional proficiency descriptors are informed by skill dimensions defined in existing documents such as the latest version of the Reader’s Guide as well as technical guides and processes from other jurisdictions (including PIAAC, PISA and skills frameworks in the U.K., Australia, and other countries), and filtered through the lens of our skills definitions and constructs as well as specific collaborator feedback where possible.

As a starting point, we described three levels of proficiency: entry, intermediate, and advanced. The team of collaborators from Bow Valley College agreed that with the newer skills, this three-tiered approach provides a good starting point. Implicit in our draft is a pre-entry level that describes individuals who cannot successfully complete the tasks outlined in the entry levels. These include individuals who would typically need intensive wrap-around, life-stabilization supports before they can meaningfully engage in structured training for employment or further education purposes. It also includes individuals who are closer to the entry level, who can benefit from skills upgrading training to move their skills along the proficiency continuum.

We want to emphasize again that **these proficiency gradations are by no means definitive or restrictive. They aim to facilitate further discussion.** More design, pilot testing, and research work is needed to fully develop the proficiency scales of all *Skills for Success*. The process for this work is described in greater detail in a later section.

Reading proficiency levels

Proficiency levels are the level at which a person demonstrates a particular skill. These levels support organizations to build tools to assess people’s skills and help individuals understand their skill levels. Organizations can adapt the content as needed. The OLES will refine the proficiency levels over time.

Level 1: Read relatively short texts so you can locate a single piece of information; follow simple written directions.

Level 2: Read more complex texts so you can locate a single piece of information or read simpler texts to locate multiple pieces of information; make low-level inferences.

Level 3: Choose and integrate information from various sources or from several parts of a single text; make low-level inferences from multiple sources.

Level 4: Integrate and synthesize information from multiple sources or from complex and lengthy texts; make complex inferences and use general background knowledge; evaluate quality of text.

Level 5: Interpret dense and complex texts; make high-level inferences and use specialized knowledge.

Writing proficiency levels

Proficiency levels are the level at which a person demonstrates a particular skill. These levels support organizations to build tools to assess people's skills and help individuals understand their skill levels. Organizations can adapt the content as needed. The OLES will refine the proficiency levels over time.

Level 1: Write less than a paragraph to organize, remind, or inform.

Level 2: Write brief text that is a paragraph or longer, to serve a variety of purposes. Content of writing is routine, with little variation from one instance to the next.

Level 3: Write either longer or shorter pieces to inform, explain, request information, express opinions or give directions.

Level 4: Write longer pieces, which present considerable information and which may feature a comparison or analysis.

Level 5: Write pieces of any length which demand originality and effectiveness. This includes creative writing. Appropriate tone and mood may be as important as the content.

Numeracy proficiency levels

Proficiency levels are the level at which a person demonstrates a particular skill. These levels support organizations to build tools to assess people's skills and help individuals understand their skill levels. Organizations can adapt the content as needed. The OLES will refine the proficiency levels over time.

Level 1:

- *Operations Required:* Only the simplest operations are required and the operations to be used are clearly specified. Only one type of mathematical operation is used in a task.

- *Translation*: Only minimal translation is required to turn the task into a mathematical operation. All information required is provided.

Level 2:

- *Operation Required*: Only relatively simple operations are required. The specific operations to be performed may not be clearly specified. Tasks involve one or two types of mathematical operation. Few steps of calculations are required.
- *Translation*: Some translation may be required or the numbers needed for the solution may need to be collected from several sources. Simple formulae may be used.

Level 3:

- *Operation Required*: Tasks may require a combination of operations or multiple applications of a single operation. Several steps of calculation are required.
- *Translation*: Some translation is required but the problem is well defined. Combinations of formulae may be used.

Level 4:

- *Operation Required*: Tasks involved multiple steps of calculation.
- *Translation*: Considerable translation is required.

Level 5:

- *Operation Required*: Tasks involve multiple steps of calculation. Advanced mathematical techniques may be required.
- *Translation*: Numbers needed for calculations may need to be derived or estimated; approximations may need to be created in cases of uncertainty and ambiguity. Complex formulae, equations or functions may be used.

Digital proficiency levels

Proficiency levels are the level at which a person demonstrates a particular skill. These levels support organizations to build tools to assess people's skills and help individuals understand their skill levels. Organizations can adapt the content as needed. The OLES will refine the proficiency levels over time.

Entry: You can use basic functions of familiar digital devices. You need guidance to find and evaluate the relevance and reliability of online information, and to engage in safe online practices.

Intermediate: You can use a wider range of functions of familiar and unfamiliar digital devices, including customizing devices for specific purposes (e.g., download and use an app, set up macros to automate tasks). You can find and use relevant and reliable online information and engage in safe online practices.

Advanced: You have in-depth knowledge of digital device operations and information technology systems. You can find and use relevant and reliable online information to improve digital processes, including enhancing your own online safety. You can assess future digital needs and keep your own digital skills up to date.

Problem Solving proficiency levels

Proficiency levels are the level at which a person demonstrates a particular skill. These levels support organizations to build tools to assess people's skills help individuals understand their skill levels. Organizations can adapt the content as needed. The OLES will refine the proficiency levels over time.

Entry: You can make decisions or solve problems when there are limited or familiar variables, all the information is provided, and the stakes are low with few consequences. You can use your general knowledge and skills to process information, do simple or routine troubleshooting if needed, identify the decision or solution, and confirm the issue is resolved.

Intermediate: You can make decisions or solve problems when there are multiple well-defined variables, information is not provided but easily identified, and the stakes are moderate with some consequences. You are able to identify useful information sources, analyze the information, select the best option from multiple choices, and evaluate the effectiveness of the solution or decision based on given or standard criteria.

Advanced: You can make decisions or solve problems when there are many complex unfamiliar variables that can be unpredictable or contradictory, little information is provided or certain, and the stakes are high with significant consequences. You can search for information using diverse unfamiliar sources or conduct their own research, synthesize and analyze complex information to determine multiple options, select the best option, and determine how to assess the effectiveness of the process and solution or decision.

Communication proficiency levels

Proficiency levels are the level at which a person demonstrates a particular skill. These levels support organizations to build tools to assess people's skills and help individuals understand their skill levels. Organizations can adapt the content as needed. The OLES will refine the proficiency levels over time.

Entry: You can speak and listen to a narrow range of subject matter, using factual and concrete language in predictable and familiar context, interacting one-on-one. You can use and interpret straightforward non-verbal cues (e.g., facial expression, eye contact).

Intermediate: You can speak and listen to a moderate range of subject matter, using both factual and abstract language. You can do this in less predictable contexts, interacting one-on-one or in small groups. You can interpret more complex non-verbal cues, including those with cultural implications, to better understand a speaker's intention and purpose.

Advanced: You can speak and listen to a wide range and depth of subject matter, using both factual and abstract or conceptual language. You can do this in a variety of contexts shifting from routine to unpredictable, and by interacting with familiar and unfamiliar audiences of various sizes. You can interpret complex and subtle non-verbal cues and use them to adapt their own communication styles.

Collaboration proficiency levels

Proficiency levels are the level at which a person demonstrates a particular skill. These levels support organizations to build tools to assess people's skills and help individuals understand their skill levels. Organizations can adapt the content as needed. The OLES will refine the proficiency levels over time.

Entry: You can interact with familiar people or a small number of diverse unfamiliar people to share information to complete routine independent tasks. You can maintain cooperative respectful behaviours toward others and minimize conflict.

Intermediate: You can work with familiar and diverse unfamiliar groups of people to coordinate tasks or work together to achieve simple or well-defined goals. You can support and adapt to others when appropriate and manage conflicts when needed.

Advanced: You can work in large teams of diverse people to achieve complex goals that might involve unpredictable situations. You can take on responsibility for integrating work, coaching and motivating others, managing conflicts, and evaluating and improving teamwork.

Adaptability proficiency levels

Proficiency levels are the level at which a person demonstrates a particular skill. These levels support organizations to build tools to assess people's skills and help individuals understand their skill levels. Organizations can adapt the content as needed. The OLES will refine the proficiency levels over time.

Entry: You can follow direction to adjust and complete plans, tasks, and goals. You can do this in response to expected and unexpected changes requiring minor adjustment or learning that is provided. You can stay positive, persist, and manage emotions in response to minor stress.

Intermediate: You can adjust and complete plans, tasks, and goals with some supervision. You can do this in response to expected and unexpected changes requiring moderate adjustment or learning with some resources provided. You can stay positive, persist, and manage emotions in response to moderate stress.

Advanced: You can adjust plans, tasks, and goals independently. You can do this in response to expected and unexpected complex changes requiring significant adjustment or learning that is self-directed using diverse resources. You can stay positive, persist, and manage emotions in response to high stress.

Creativity and Innovation proficiency levels

Proficiency levels are the level at which a person demonstrates a particular skill. These levels support organizations to build tools to assess people's skills and help individuals understand their skill levels. Organizations can adapt the content as needed. The OLES will refine the proficiency levels over time.

Entry: You can generate a limited number of novel ideas under guidance and support. You are open to applying new ideas, but are quick to revert to norms and habits when the new ideas fail or face uncertainties.

Intermediate: You can generate a larger number of novel ideas on your own. You acknowledge and work with uncertainties, accept failures, and learn from failures to improve your ideas. You are receptive to new ideas from others.

Advanced: You can generate a wider range of novel ideas, with diverse dimensions of originality. You evaluate limitations of novel ideas and find ways to improve them to minimize failures and uncertainties. You facilitate an environment for others to be creative and innovative.

Overview of the process to develop proficiency levels and descriptors

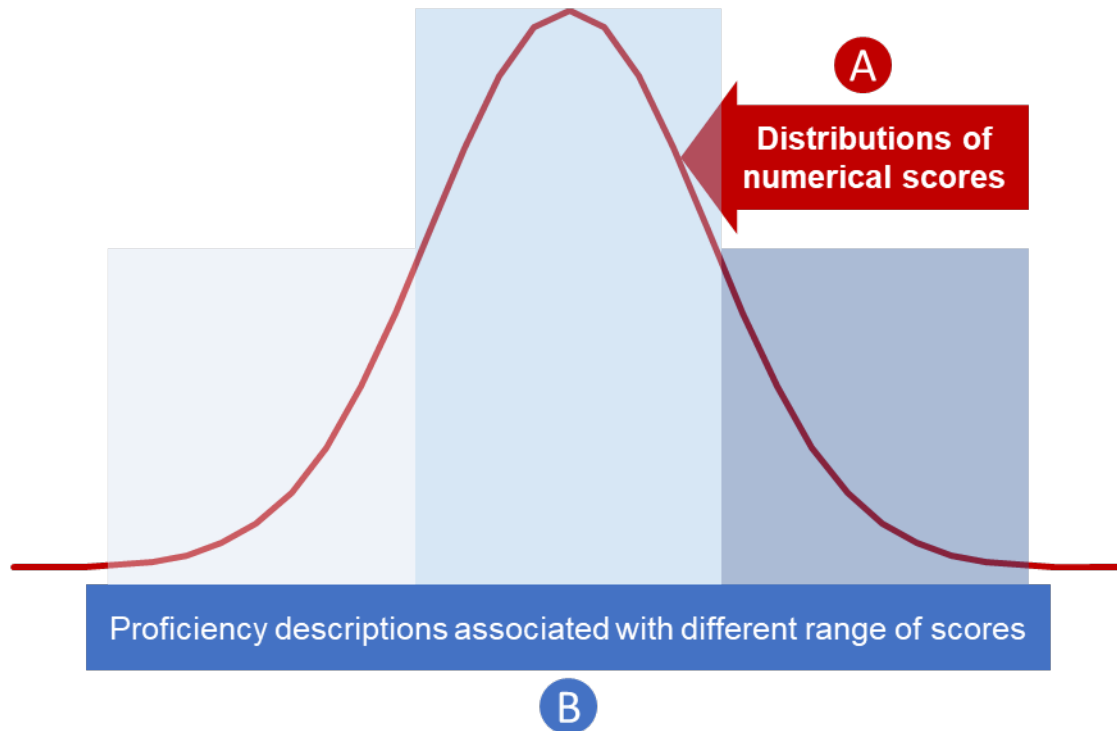
Proficiency scales and associated descriptors should be developed through an iterative, evidence-based, and collaborative process, with curriculum and assessment development experts working in tandem. Indeed, this was the process adopted by PIAAC in the adult literacy context, PISA in the K-12 context, and other international skills development initiatives, including in the United States and Australia (OECD, 2013; OECD, 2019; Perie, Hess, & Gong, 2008; Turner, 2014). This was also the recommendation of project collaborators, notably Michael Herzog and the team from Bow Valley College, who indicated that it should be a structured process led by practitioners with extensive experience in instructional design and training delivery, in collaboration with assessment development experts. The collaborator team Scott Murray, Richard Roberts, and Janet Lane also emphasized the need for a scientific and iterative approach to proficiency level development. As these collaborators highlighted, they should be developed through a process that cycles through multiple steps of design, pilot testing, alignment, and finalization.

The need to have curriculum designers and assessment developers working in parallel arises because the process involves both an expectation of how skill acquisition and development happen from a pedagogical standpoint, and a consensus as to what serves as evidence of that proficiency development from an assessment standpoint (OECD, 2019; Turner, 2014; Perie et al., 2008). As a best practice in the field, proficiency descriptors must provide a balance between being *specific* enough to allow instructors to envision the classroom learning behaviours associated with the skills described, yet *general* enough to apply to multiple forms and formats of assessments (Turner, 2014). In other words, they should not be restricted to be only applicable to a single test administration or training model. Figure 3 represents two key elements describing a proficiency scale:

- A) Distribution of numerical scores:** This is the quantitative distribution of assessment scores capturing a continuum of learner proficiency. Assessment items measuring key constructs and subconstructs of a skill domain need to be pilot tested with sufficiently large and diverse samples of learners to establish the distribution of scores, learner performance with respect to each assessment question, and how questions or groups of questions can differentiate learners along a continuum of proficiency (OECD, 2019; Turner, 2014).

- B) Proficiency descriptions associated with different ranges of scores:** These descriptions show the typical competencies of learners at particular points along the proficiency continuum (OECD, 2019; Turner, 2014; Perie et al., 2008). They make explicit what growth in an area of learning means. They support the interpretation of the numerical scores, in terms of the knowledge, skills, and understanding commonly associated with the scores (Turner, 2014). They are developed to be tightly aligned with the pedagogical theories of learner development.

Figure 3 Two key elements to describe a proficiency scale



To summarize, descriptions of proficiency levels should be developed based on a conceptual understanding of skill development in pedagogical settings, and refined and supported by evidence collected through the pilot testing of assessments that captures said skill development. This parallel process is described in greater detail in a later section.

Assessments that can validly and reliably capture evidence of skill acquisition and development are crucial for this process – a point echoed by the team of collaborators Scott Murray, Richard Roberts, and Janet Lane. As a quick overview, the state of development of assessment tools varies greatly across skills. For the new additions in *Skills for Success* – Adaptability and Creativity and Innovation – self-reported assessments capturing these domains as skills rather than as personality traits or pre-dispositions are only starting to emerge. More work is needed to map these assessment items onto *Skills for Success* constructs, pilot test them in the Canadian context, and validate their alignment with learning objectives and activities. Considerations of validity, reliability, usability, and other properties of these assessments need to be examined, and possibilities of leveraging more objective or performance-based assessments such as situational judgement tests need to be discussed before decisions on proficiency levels and descriptors can be made.

For other skills such as Writing, Communication, Collaboration, or Problem Solving, there is a range of assessment methods, formats, and content developed for a variety of purposes. It is important to again highlight the need to map these assessments onto the definitions and constructs as conceptualized in *Skills for Success*, pilot test with diverse groups of Canadian learners in different training contexts, as well as develop and refine detailed proficiency levels and descriptors. Even for the long-studied skills such as Reading and Numeracy, more intensive research is necessary to ensure their alignment with not only the updates in *Skills for Success* but findings, best practices, and lessons learned in the international field of adult literacy and Essential Skills. Ultimately, as the team of collaborators Scott Murray, Richard Roberts, and Janet Lane emphasized, assessments of proficiency must ensure all skills are measured in a reliable and valid manner, serving multiple purposes including allowing the fair judgment of the relative efficiency and effectiveness of training programs based on group averages. The next section reviews the state of assessment development in greater detail, setting the stage to discuss the process to develop more detailed, evidence-based proficiency levels and associated descriptors.

BUILDING VALID ASSESSMENTS TO INFORM PROFICIENCY

Overview of assessment methodologies

There is a range of assessment methodologies that can be used to assess the nine *Skills for Success*. The type of assessments used for different skills depends on the nature of the skill (e.g., literacy, social-emotional), the purpose of the assessments (e.g., to document learning progress, to evaluate training model, or to make high-stake, individual-based decisions), and the extent of research and development that has been advanced in the domain. More specifically, **Reading** and **Numeracy** benefit from years of assessment development and testing both nationally and internationally, resulting in objective rigorous assessments with demonstrated reliability and validity from large sets of data (a point highlighted by multiple collaborators including Michael Herzog, the team from Bow Valley College, Janet Lane, and Scott Murray). While these types of assessments can require more resources and time to complete, computerized administration and automatic scoring alleviates some of the burden. These types of assessments are quite conducive to the development of proficiency levels and descriptors required.

On the other hand, assessments of social-emotional skills such as **Creativity and Innovation** and **Adaptability** are still under development. These types of skills do not lend themselves as easily to the development of objective assessments as do literacy skills – a point echoed by another project collaborator Paul Brinkhurst. This does not mean it is not possible, and indeed some types of objectively scored assessments do exist for social-emotional skills, as suggested by our collaborator Richard Roberts. For example, under development for the 2021 PISA (although the administration of this cycle may be delayed due to COVID-19) is the Creative Thinking

assessment that includes a test and a background questionnaire. The test provides information on the extent to which students are able to apply their creative thinking cognitive processes when working on tasks requiring the generation, evaluation, and improvement of ideas. The background questionnaires complement this information with data on other enablers of students' creative thinking, including creative attitudes (openness, goal orientation, and beliefs), perceptions of their school environment, and activities they participate in both inside and outside the classroom (OECD, 2019; also mentioned by one of the project collaborators, Richard Roberts). Nonetheless, social-emotional skills are more often assessed using subjective ratings of confidence or use of skills (self-report or other-report) (as highlighted by Paul Brinkhurst and Michael Herzog, among other collaborators).

Subjective assessments have their own advantages, as they are easily shared, administered, and scored. They require little time and resources. Employers, community organizations, and other stakeholders involved in training can easily customize and adapt measures to align with their unique training needs. However, some considerations are needed to ensure the chosen assessments carry proper psychometric properties and valid predictive linkages with key labour market and life outcomes. Subjective assessment can widely vary in how they are developed, which can affect their intended use and interpretation. Subjective assessments developed by experts that have undergone testing and validation are more likely to show good psychometric properties and links with labour market and life outcomes. Other assessments that are developed based on face validity with little testing tend to lack evidence showing these properties (see section on how to improve self-report assessments).

The rest of the skills – **Collaboration, Communication, Problem Solving, Writing, and Digital** – fall somewhere in between, where a few examples of objectively scored or more rigorously developed and tested assessments exist, but in many cases, self-report is still heavily relied on. For example, PIAAC administered a Problem Solving in Technology-Rich Environments assessment that required participants to solve problems and complete tasks in a digital environment, directly demonstrating their skills and abilities. In the 2015 PISA, a Collaborative Problem-Solving assessment tested students in their ability to select the best response from a presented collaborative problem-solving scenario (i.e., situational judgement test, see below). While the PISA assessment contexts are not directly applicable to the adult learning contexts targeted by *Skills for Success*, these assessments provide evidence of feasibility, i.e., it is feasible to develop such objectively scored assessments for these skills.

Below we briefly highlight several key methodologies that are used across the range of all nine skills in the framework, including those shared by our collaborators, most notably Scott Murray, Janet Lane, Richard Roberts, Paul Brinkhurst, Michael Herzog, and the team from Bow Valley College. Table 2 also summarizes the state of assessment development of each skill, the pros and cons of different assessment methods, and the typical contexts for which each method is suitable.

Paper or computer-based assessments scored objectively: These represent the category of tools commonly used to assess literacy skills like **Reading** or **Numeracy**. They involve a direct demonstration of skills as participants are asked to complete a series of reading and numeracy tasks of varying difficulty and complexity. There are clear correct and incorrect answers. These assessments can often be scored automatically by computers and can be adaptive to participants' performance. Examples include reading and numeracy assessments from PIAAC, TOWES, and ESG. The development of these assessments and its scoring can be complex and systematically built (e.g., using Kirsch/Mosenthal taxonomy scoring models – as suggested by Scott Murray). In contrast, another project collaborator Michael Herzog did not believe that systematic processes such as the Kirsch/Mosenthal taxonomy scoring models should be used to predict the complexity of Reading or Numeracy assessment items. Instead, he suggested that the scientific field-testing of assessment items is the most accurate way to establish their psychometric properties.

To update and refine the alignment between these assessments and the definitions and constructs in *Skills for Success*, more field-testing, validation, and analysis are needed. Some preliminary development work is underway and should be prioritized as a starting point in this process – for example, our collaborator Michael Herzog has already collected data from over 1,300 assessments that incorporated dimensions of Document Use in Reading and Numeracy assessments. An analysis of this data could provide the necessary first step to help tighten the alignment of these assessments with *Skills for Success*. The team from Bow Valley College also emphasized the need to account for Document Use complexity in the assessments of Reading and Numeracy. However, regarding incorporating Reading and Document Use, the collaborator team Scott Murray, Janet Lane, and Richard Roberts raised caveats that the assessments of these skills should not be combined, as variables that underlie task difficulty of the two domains are different. Additionally, combining the two domains could potentially compromise the psychometric stability of the measures across populations over time, and dilute the predictive validity of Document Use in relation to labour market outcomes. Such points of disagreement among collaborators are important to consider in the next phase of the *Skills for Success* roll-out, and should be validated through pilot testing.

Written or audio recordings scored by trained assessors: These assessments involve the human scoring of a produced sample of a skill based on a well-defined rubric or evaluation criteria. For example, this can involve the scoring of a writing sample along various dimensions (e.g., wording, organization) by trained or expert assessors to measure **Writing** skills. Some examples suggested by our collaborators include Bow Valley College's *WriteForward* as well as *CAMERA* (suggested by Paul Brinkhurst), which have a focus on formative assessment. Other examples include English proficiency exams such as those offered by *IELTS* internationally, or *CELP/IP/CAEL* in Canada (mentioned by Richard Roberts and the Bow Valley College team, in separate written feedback documents).

Table 2 Existing assessments that can be updated to align with *Skills for Success*

Type of assessment	Pros and cons	Contexts	Potential S4S application
Paper or computer-based assessments scored objectively	<ul style="list-style-type: none"> ▪ Pros: Objective measure of skills, less susceptible to biases or faking, often developed, tested, and validated to demonstrate rigorous psychometric properties, automatically scored, standardized, easily administered in different settings ▪ Cons: Requires time and money to develop, fees to use, longer and more burdensome for participants 	<ul style="list-style-type: none"> ▪ Can be considered for medium to high stake assessments (e.g., as showing evidence of achievement along an individual's training pathway) ▪ Effective for research and evaluation projects requiring greater reliability and precision of measurement 	<ul style="list-style-type: none"> ▪ Reading, Numeracy
Written or audio recordings scored by trained assessors	<ul style="list-style-type: none"> ▪ Pros: Scoring rubrics developed by subject matter experts, based on detailed dimensions and criteria, trained or expert evaluators, standardized, less susceptible to biases or faking, requires minimal materials to administer ▪ Cons: Requires time and money to develop, fees to use, may take time for scoring to be completed, can be stressful for participants to produce writing or speaking samples when time-limited or required on-demand 	<ul style="list-style-type: none"> ▪ Can be considered for medium to high stake assessments (e.g., has been used to demonstrate English language proficiency and in other standardized academic tests) ▪ Effective for research and evaluation projects requiring greater reliability and precision of measurement ▪ Can be used as formative assessment, especially when participants can access recordings and rubrics 	<ul style="list-style-type: none"> ▪ Writing, Communication
Task-based assessments scored by trained assessors	<ul style="list-style-type: none"> ▪ Pros: Involves behavioural demonstration of skills, less susceptible to biases or faking, can replicate common workplace or real-life tasks and situations, can be developed according to industry-specific standards, possible to standardize ▪ Cons: Requires time and money to develop, might be difficult to develop generalized versus industry-specific tasks, may require fees to use, takes time to administer and score, can be difficult to administer in different settings if it involves test materials and other people, can require multiple observers/raters who need to be reliable, can be stressful for participants to be observed 	<ul style="list-style-type: none"> ▪ Can be considered for medium to high stake assessments (e.g., has been used in industry assessments such as <i>emerit</i> by the tourism industry) ▪ Can be useful in certain industry training and certification contexts ▪ Can be used as formative assessment, especially when participants can access a recording or detailed feedback ▪ May be too time consuming for many research or evaluation projects, as well as on-going regular program monitoring 	<ul style="list-style-type: none"> ▪ Digital skills, Problem Solving, Communication, Collaboration, Creativity and Innovation (some already exist, such as Creativity, while others need to be developed)

Type of assessment	Pros and cons	Contexts	Potential S4S application
Situational judgement tests (SJT)	<ul style="list-style-type: none"> ▪ Pros: Less time-consuming and burdensome compared to task-based assessments, can be easy to administer in different settings (i.e., paper or computer-based), less susceptible to biases or faking, easy to score, more objective than other- or self-report with less susceptibility to bias, can assess judgement processes, multimedia SJTs can assess use of more nuanced social and non-verbal cues, can be tailored to common workplace or other life tasks, lower costs ▪ Cons: Requires more expert input to develop scenarios than self-report, written scenarios are affected by individual reading level and comprehension of the scenarios, it can be difficult to create scenarios to measure isolated skills, does not measure behavioural responses directly 	<ul style="list-style-type: none"> ▪ Can be considered for medium to high stake assessments (e.g., has been used in admissions to medical school) ▪ Can be used as formative assessment when participants are given detailed feedback and explanation ▪ Easy to administer in research and program evaluation, provides some objective measure of learning 	<ul style="list-style-type: none"> ▪ Digital skills, Problem Solving, Communication, Collaboration, Adaptability, Creativity and Innovation
Subjective reports (Self-report and/or other-report)	<ul style="list-style-type: none"> ▪ Pros: Relatively easier to develop and test, can have strong psychometric properties if properly developed, tested, and validated, or optimized with forced-choice or other methods/techniques; similar items can be used for both self-report and other-report for validation or triangulation, low-cost and easy to administer, easy and quick for individual raters to complete, simple scoring ▪ Cons: Requires suitable rater who has observed the individual's skills, based on subjective judgements and hence susceptible to conscious or unconscious biases and memory errors, susceptible to faking and responding in socially desirable ways, does not measure behaviours directly, often less precise than objective assessments, can lack strong psychometric properties if not carefully developed, tested, and validated 	<ul style="list-style-type: none"> ▪ Can be considered for medium to low stake assessments depending on the psychometric properties ▪ Can be used in training and education as formative assessment and to guide curriculum adaptation and delivery, could be especially useful when triangulated and compared across self- and other-reports ▪ Easy to administer in research and program evaluation, would be strengthened by having additional measures 	<ul style="list-style-type: none"> ▪ Digital skills, Problem Solving, Communication, Collaboration, Adaptability, Creativity and Innovation

Sources: SRDC's environmental scan and synthesis of collaborator feedback.

This methodology has also been used to assess **Communication** – for examples, recorded speech samples are scored by trained assessors to evaluate speaking skills, such as in TOEFL and TOEIC tests and others that have been developed by collaborators. New developments in technology have also led to tests that can be scored by AI algorithms, such as the Versant speaking test (an example shared by the Scott Murray, Janet Lane, and Richard Roberts team). While these offer promising starting points, it is important to note that most of these assessments – e.g., IELTS, TOEFL – have often been used in the contexts of assessing non-native language users. There are opportunities to enhance these assessments to be more tightly aligned with the assessment and learning needs of both non-native and native language users in various contexts of the Canadian society, including the workplace. In the next phase of *Skills for Success* implementation, it is beneficial to prioritize design and pilot work that directly responds to these opportunities.

Task-based assessments scored by trained assessors: When we consider skills such as **Problem Solving** or **Collaboration**, the tasks required for participants to demonstrate their skills will likely be more involved and complex than writing a piece of text or recording a speech sample. These tasks will likely require some structured activities that can be either recorded or observed and scored by assessors. Some collaborators, most notably the team from Bow Valley College, saw opportunities to develop observation-based assessment banks for most of *Skills for Success*, with some caveats. They cautioned that these assessments may come with logistical, financial, and methodological challenges. For example, Michael Herzog reported difficulties such as creating activities that provided enough data to score performance, evaluator bias, and low inter-rater reliability. Bow Valley College also emphasized the need to minimize evaluator bias if this method is used. Additionally, Paul Brinkhurst cautioned that learners being assessed might feel stress in such assessments, affecting their performance.

With all these caveats in mind, however, this does not mean such assessments cannot be successfully developed or implemented. For example, some task-based performance tests exist that could align with **Creativity and Innovation** (e.g., 2021 PISA Creative Thinking assessment, Torrance Tests of Creativity in the wider literature). Another example comes from the individual differences literature referenced by Richard Roberts, most notably the book by Carroll (1993). This study examined individuals' performance on a series of cognitive tests and identified that tasks that require original and creative thinking beyond the most obvious ones, such as common objects, titles and captions of stories or cartoons, consequences of hypothetical events, grouping objects by various rules, and picture meaning and stories, can predict educational outcomes beyond what is predicted by standardized tests of verbal or quantitative reasoning or subject matter knowledge. In addition, the collaborator team from WEM recommended using outcome-focused criteria rather than behaviour-focused criteria to assess skills such as **Collaboration**. Based on their experience, WEM collaborators observed that different individuals might show their skills differently, making it more effective to observe the outcome of a task (e.g., whether the individuals got the information needed from others in a Collaboration exercise) rather than

the behaviours required to complete the task (e.g., how many questions the individual asked to get the information). These are important considerations for the development and enhancement of this type of assessments for *Skills for Success*, which can be applied to a wide range of skills including **Problem Solving, Collaboration, and Creativity and Innovation** as mentioned, and to a certain extent, **Communication** and **Digital** skills.

Situational judgement tests (SJT): These types of assessments present a series of hypothetical scenarios that one might encounter in the workplace or other domains of life. Scenarios can be described in words or presented through video vignettes or other multimedia. Individuals are then presented with several courses of action they can take in response to each scenario. Some tests ask individuals to select the best option, while others ask individuals to rank or rate the various options from most to least effective. Multimedia-based SJTs can have some advantages over written ones, including demanding less verbal ability, better reflecting real environments with richer cues (e.g., social, non-verbal), and have been shown to better predict interpersonal skills (Lipnevich et al., 2013; MacCann et al., 2015). One of our collaborators Richard Roberts has been involved in the development and use of such assessments for social-emotional skills such as teamwork – which can be mapped onto **Collaboration** (e.g., Wang et al., 2009). These assessments have been used in a wide variety of contexts from employability assessments to medical school admissions. The advantage of SJTs is that they are easier to develop, administer, and score compared to task-based assessments. If designed well, they can also assess more subtle and complex judgement processes than other types of tests (Lipnevich et al., 2013). However, they need to be carefully designed to ensure they are inclusive of diverse abilities and disabilities, cultural backgrounds, etc., to minimize potential test biases. In the context of *Skills for Success*, we see SJTs as a promising method to assess a variety of skills, including Communication, Collaboration, Adaptability, and Creativity and Innovation (*for further information, please refer to the section on “Leveraging Situational judgement test” in this report*).

Subjective reports: These assessments are often based on the personal, subjective judgement of one’s self on one’s own skill levels, but could also be supplemented by the subjective evaluation of others – typically instructors, employers, or mentors. These ratings usually use 5-point Likert scales. They are likely the most common and widely used type of assessments because they are easier and cheaper to develop and quick to administer. As noted above, many social-emotional skills are currently measured using self-report assessments. For some social-emotional skills that are rather more internal and not easily observed (e.g., valuing differences – a construct of **Collaboration**, or being able to imagine different situations – a construct of **Creativity and Innovation**), self-assessments may be most appropriate as individuals have privileged access to their inner lives. Furthermore, individuals are able to experience and observe their own behaviours and skills across a wide range of situations. While many organizations may choose to use their own measures, there exists an extensive history of assessment development in psychology, especially personality psychology. There are some freely available measures online that have been tested and validated with good psychometric properties (e.g., measures of grit,

self-esteem). One collaborator – Michael Herzog – also highlighted the International Personality Item Pool (<https://ipip.ori.org/>) which is a comprehensive open-source resource with existing measures and a bank of items to create one’s own measure.

Self-report can be accompanied by other-reports, which validate the self-ratings with the ratings of at least one other observer, typically instructors, employers, or mentors (it could also include parents of youth learners). They are considered subjective assessments because there are no clear correct or incorrect answers, there are no scoring rubrics (however, see section on how to improve self-reports below), and are based on the rater’s personal judgement of the individual’s skill level. Ideally, the rater will have had many opportunities to observe the individual over a period of time to provide more accurate responses. More easily observable outward behaviours may be rated more accurately, such as behaviours related to sociability and working with others, which could be mapped onto **Collaboration** (Kankaraš et al., 2019). An example is the ESAT assessment tool that involves measuring multiple social-emotional employability skills by both participants and staff members and the results are compared and discussed to facilitate learning (suggested by Paul Brinkhurst). Subjective assessments provide a cost-effective starting point to support the implementation and roll-out of the newer *Skills for Success*, including **Adaptability** and **Creativity and Innovation**. As previously discussed, it is important to use subjective assessments with proper psychometric properties, including predictive validity related to key labour market and life outcomes, to provide a strong statistical foundation for the assessment and measurement of *Skills for Success*.

Where does the field go from here?

Our quick environmental scan supplemented by collaborator feedback and recommendations revealed plenty of opportunities to select, update, align, and pilot test assessments in support of *Skills for Success* pilot testing, implementation and roll-out. Particularly, for **Reading** and **Numeracy**, plenty of rigorous objective assessments conducive to proficiency development already exist, providing solid starting points to update and refine the alignment with *Skills for Success*. As the Bow Valley College team summarized, this process would still take considerable time, resources, and validation. Framework change of this nature may require large-scale pilot testing, validation, and analysis to ensure reliability and validity in the measurement of the skills and associated constructs. As previously mentioned, Michael Herzog has already collected data from over 1,300 assessments that incorporated dimensions of Document Use in **Reading** and **Numeracy** assessments. Analyzing this data could provide crucial insights to determine the validity of such updates in *Skills for Success*.

On the other hand, regarding incorporating Reading and Document Use, the collaborator team Scott Murray, Janet Lane, and Richard Roberts disagreed and thought that it should not be done, as it may compromise the psychometric properties and predictive validity of the assessments,

among other reasons (see previous section). Such points of disagreement among collaborators are important to consider in the next phase of the *Skills for Success* roll-out, and should be validated through pilot testing. Another potential line of exploration is to supplement the objective assessment of **Numeracy** with measures of math-related self-confidence, self-efficacy, attitudes, anxiety, and opportunity to learn, as these domains may be related to Numeracy outcomes beyond performance on the objective tests. This suggestion was raised by Paul Brinkhurst and echoed by the collaborator team Scott Murray, Janet Lane, and Richard Roberts, who cited a similar approach applied to the 2012 PISA Numeracy assessment.

For **Writing** and **Communication**, there are proficiency levels and descriptors associated with various assessments of these skills; however, they are mostly applicable to second language training and assessment contexts. More work is needed to enhance their alignment with *Skills for Success*, going beyond simply assessing spelling, grammar, and pronunciation and including further considerations of content, purpose, and audience. This would better reflect the writing and communication tasks typically required to participate in Canadian workplaces, schools, and other life contexts.

Assessments of **Digital** skills need further considerations due to the potential context-dependent nature of the skills, according to the Bow Valley College team of collaborators. The tasks that are deemed difficult and require a high level of proficiency of Digital skills vary depending on the context to which the skills are applied. As the Bow Valley College team elaborated, beyond the basic tasks common to most software and hardware (e.g., turning a device on and off), the skills required to complete more complex tasks vary, depending on the types of tasks that are prioritized in the workplace, in school, or in other life contexts. It may be possible to create context-specific assessments and training programs to target these skills, but whether it is feasible to generate a context-free assessment of transferrable Digital skills beyond the basic skills remains an open question, especially given the fast-changing nature of the modern Digital skill needs. Such questions provide exciting opportunities for future design, pilot testing, and validation work.

For the remaining skills – **Problem Solving, Collaboration, and especially Adaptability and Creativity and Innovation** – a wide range of assessments exists, with varying degrees of rigour, psychometric strength, and practicality and applicability. There are opportunities to update and tighten the alignment of these assessments, whose methodologies range from task-based assessments scored by trained assessors, situational judgement tests, and subjective reports including self-report and other-report. Given the nature of these skills, there are important issues to consider in this process. For example, the collaborator team from WEM emphasized the context-dependent nature of some of these skills which has implications for measurement. The specific behavioural standards against which individuals are judged can differ by context (e.g., workplace or other) and these may need to be specified. They also cautioned that specific desired goals or outcomes of tasks (e.g., of a collaborative or communication task) can vary, which can

affect assessment criteria used. Another important consideration underscored by many of the collaborators is that social-emotional skills often are inter-related with inter-dependencies. Understanding these relations will be important when developing and refining assessments.

For Adaptability in particular, one additional point to consider is its multi-dimensional nature in definition and constructs, which may require independent assessments or measurements to capture. This is a note of caution raised by a project collaborator Richard Roberts, who commented that Adaptability, as defined and constructed, could be seen as a broad umbrella that includes multiple skill facets. While these skills facets are important particularly in predicting key labour market, health and life outcomes, they may not be conducive to producing one single Adaptability assessment score. One potential way to address this is to design assessments that could give multiple sub-scores corresponding to different Adaptability facets. Again, these points need to be further explored and validated through pilot tests in the next stage of the *Skills for Success* roll-out. Other considerations related to where to start and what to prioritize for these skills are discussed in greater detail in the next section.

HOW TO PRIORITIZE ASSESSMENT TOOLS IN THE NEXT STAGE OF THE *SKILLS FOR SUCCESS* ROLL-OUT?

Balancing rigour with usability

As multiple collaborators including Scott Murray, Janet Lane, and Richard Roberts emphasized, identifying, developing, and enhancing assessment tools is one of the key processes supporting the development of proficiency levels and descriptors, especially for the newly added or substantially updated skills such as Adaptability, Creativity and Innovation, Digital, Problem Solving, and Collaboration. Assessment tools are critical to systematically capture variations in skill development and skill levels across diverse cross-sections of the population. These tools provide a quantitative distribution of scores that can be tested to determine how they can differentiate learners across different levels of proficiency, mapped onto a realistic learning progression from a pedagogical standpoint.

Importantly, to be used effectively in this manner, these tools need to demonstrate good psychometric and methodological properties, including various forms of reliability and validity. Based on their experience, Scott Murray, Richard Roberts, and Janet Lane emphasized considerations of **rigour** when developing, customizing, or selecting assessments of *Skills for Success*. At the same time, considerations of **usability** – e.g., administrative costs, response burden – should not be overlooked. According to the majority of collaborators, including Michael Herzog, Paul Brinkhurst, and the Bow Valley College team, many training contexts do not necessitate the use of extremely rigorous but burdensome assessments, as stakeholders often

do not have the resources or time to spend on these assessments, especially if they are not intended for high-stake, individual-based decision-making purposes such as hiring. Assessments that are most likely to be widely accepted and used tend to be those that can strike a balance between rigour and usability. For example, Michael Herzog's team has found a greater market for assessments such as situational judgement tests and self-report assessments based on IPIP, both of which achieve an acceptable balance between rigour and usability. Figure 4 depicts this rigour-usability continuum.

Figure 4 Assessment development – Balancing rigour with usability



When it comes to developing, refining, and choosing assessments, where we land on this continuum depends on assessment needs, stakes, and state of development of existing assessments aligned with the skills (Assessment Work Group, 2019). When stakes are high (e.g., used to determine certification, hiring and promotion), more weight tends to be given to rigour, i.e., the assessment carries a greater burden to demonstrate rigorous psychometric properties. There is greater risk and consequences associated with the assessment's ability to produce reliable and valid results, since it can directly determine an individual's training or job outcome. This is the point where the collaborator team Scott Murray, Janet Lane, and Richard Roberts recommended to start: focus on developing rigorous assessments that can be validly used in high-stake contexts. Their position was that once rigorous assessments have been developed, more compact or less burdensome measures that maintain the key validity properties can be more easily used in low-stake contexts.

However, it is important to acknowledge some key considerations or notes of caution associated with the implementation and use of such high-stake assessments. It has been found in the literature that these assessments often elicit concern and resistance from stakeholders, especially those who are being assessed (Assessment Work Group, 2019). It is possible to mitigate this type of risk if the assessment is only one of multiple criteria used to make decisions (e.g., if the assessment is used in conjunction with interviews, work samples, references, and other materials to support hiring decisions).

In addition, for such high-stake purposes, extra caution needs to be taken to minimize, if not eliminate, potential assessment bias – a point highlighted by the Bow Valley College team. Biased assessment items are identified as those where individuals with the same ability but from different sub-groups (e.g., gender, race, first language) have different probabilities of getting the items correct. Indeed, the collaborator team from WEM and the practitioners from the focus groups emphasized cultural, societal, and Canadian workplace aspects to skills such as Communication, Adaptability, and Creativity and Innovation. When integrated into assessments, this can put certain groups at a disadvantage. Tests of bias, such as differential item functioning (DIF), can be carried out – for example, such an assessment examining gender or language bias found little to no bias in the TOWES items (Kline, 2004). As the Bow Valley College team recommended, assessments developed in line with the new *Skills for Success*, especially for such high-stake use, should be evaluated for possible demographic bias. This point reinforces the third note of caution related to time and cost of development – given all the considerations needed, such high-stake assessments are costly to develop and pilot test, which may not be optimal in supporting the timely roll-out of *Skills for Success*. As further noted by our collaborator Paul Brinkhurst, early users of the framework are more likely to apply *Skills for Success* for formative (see below) or low-stake purposes rather than in high-stake contexts.

When stakes and risks are lower (e.g., when assessments are used as part of a strategy to engage learners), assessments that are higher in usability may be prioritized. Such low stake assessments may be broadly accepted by most stakeholders in the formative stages of program development and implementation. This distinction is clear when comparing *summative assessments* versus *formative assessments* in learning. Summative assessments focus on evaluating overall progress, for example how much an individual has learned over the course of a training program, and in such cases, having enough rigour to accurately determine whether an individual has met certain learning goals or criteria is important. Formative assessments, on the other hand, are used as tools to monitor ongoing learning and provide feedback to shape instruction. In such cases, our collaborator Paul Brinkhurst emphasizes that it is less critical to have measurement precision than for the assessment to be easily used by trainers as well as students, and indeed make assessment and resulting feedback a key part of the learning and teaching process. Others (such as Scott Murray) however emphasize that the best-case scenario is to have rigorous assessment tools embedded within instruction, to make learning criteria clearer for both learners and instructors and identify gaps more precisely.

Another factor that can affect the potential risk is the level of data aggregation (Assessment Work Group, 2019). When assessment scores are used to make decisions about individuals (e.g., certification), there is greater risk that lack of precision or reliability will affect the individual's opportunities or other outcomes. When assessment scores are aggregated at the class or cohort level and used to make decisions about the group or program (e.g., group progress, program outcomes), this risk is reduced. In some cases, assessments with psychometric properties that are less precise at the individual level but “good enough” to track aggregate outcomes and

impacts may be prioritized as reflecting an optimal trade-off between usability and rigour. However, less precise assessments may also mean that the instructor is less able to apply the results to tailor individual learning plans.

Ultimately when developing or selecting an assessment, we need to consider a) the stakes and risks of the decisions made based on the results (i.e., consequential validity – see table below), b) the evidence that the assessment is rigorous and psychometrically strong enough for high-stake contexts (i.e., reliability, validity), and c) how data will be aggregated for use and reporting (Assessment Work Group, 2019). As noted at the beginning of the section, in many cases, we will likely need to **strike a balance between rigour and usability**. For example, collaborators from Bow Valley College noted that employers need rigorous assessments on which they can base hiring and training and yet they want assessments that are short, easy to understand, and with non-ambiguous results. These preferences of employers highlight the need to achieve an optimal balance between rigour and usability.

Assessment development is a dynamic process, with incremental improvement always a goal – for example, when seeking evidence of psychometric rigour in the transition from formative to summative evaluation, or applying more user-friendly methods to ensure the assessment has a greater chance of being adopted and widely used. In the context of *Skills for Success*, skills such as **Reading** and **Numeracy** are more advanced in terms of assessment development and can start with more emphasis on rigour. However, this is not to say the process would be quick or easy. As the Bow Valley College team summarized, revising existing high-stake assessments would still take considerable time, resources, and validation. For **Writing** and **Communication**, although rigorous assessments exist, more work is needed to ensure they are applicable to diverse population of learners with wide-ranging learning needs, and tightly aligned with *Skills for Success* definitions and constructs. Again, the need for pilot testing, validation, and analysis is emphasized. For the remaining skills in the framework, we see opportunities to leverage existing subjective assessments (self-report or other-report) and to explore existing or develop new situational judgement tests. This will help the field move forward with usable and practical assessments that have strong reliability and validity. In a later section, we describe case studies and methods to improve subjective assessments, as well as ways to make the best use of situational judgement tests to support the roll-out of *Skills for Success*. Before turning to this discussion, the next section summarizes key criteria to consider when selecting, developing, and enhancing assessment in the context of *Skills for Success*.

Summary of key criteria for assessment selection

Messick's (1989) conceptualization of construct validity as a multi-faceted concept – recommended by Scott Murray – provides a useful framework (see Table 3). It adds an important focus on validity that extends beyond the assessment itself to its relevance and social

consequences (Shaw & Crisp, 2011). These aspects were also highlighted by the Bow Valley College team. As shown in Table 3, the list of assessment properties to consider also include usability and fairness as additional criteria.

Table 3 Properties of assessment instruments

Property	Description
Reliability: This refers to the consistency of an instrument.	
Test-retest reliability	The instrument should reliably and consistently measure a skill in the same way over time. If an individual is tested on the skill today, the same individual should have a similar result if tested again in two weeks, assuming no intervention or skill development has occurred during that time.
Internal consistency	The instrument should consistently measure an individual's skill across multiple items. All items of an instrument should reflect the same underlying construct and an individual's responses on one item should be correlated with the individual's responses on other items. If there is low correlation, this indicates that the items may not be measuring the same underlying construct. Some sets of items may be correlated more than others if they measure the same dimension of a multi-faceted construct.
Inter-rater reliability	If the instrument involves use of multiple raters (e.g., rating observable behaviours), the scores produced by each rater should be highly correlated. If not, this suggests the instrument is not reliable enough to be administered or scored consistently by different people.
Construct validity: This refers to whether an instrument is measuring the construct it claims to measure.	
Content	The content of the instrument (i.e., test items) is relevant and representative of the construct, such as reflecting all dimensions or facets of the construct. The content should be informed by experts including academic researchers, assessment developers, curriculum developers, training practitioners, and other workforce or industry experts. The content should reflect the <i>Skills for Success</i> conceptual framework, pedagogical theories used to develop these skills in learners, use of these skills in employment and other life contexts, and the broader skill and assessment literature.
Substantive	The instrument measures processes that are theoretically shown to be part of the underlying construct. There is evidence to show that individuals are indeed engaging in these processes when completing test items. For example, if paying attention is an important process theoretically linked to Communication, the instrument should be able to demonstrate that it elicits this process and individuals are tested in their ability to engage in this process.

Property	Description
Structural	<p>The scoring of the instrument should reflect what is known about the structure and dimensions of the construct. This is related to how different items might be combined together to create scores at the dimension or facet level. For example, if “identifying a problem” is shown to be a specific dimension of Problem-solving, then items related to this dimension should be scored together. Internal consistency (see above) can also be assessed for scores of specific dimensions or facets given enough items.</p>
External	<p>The instrument is shown to have expected external relations with other measures and outcomes based on our understanding of the construct. Test scores from the instrument should show moderate or high correlation with test scores from other instruments that measure the same construct (convergent validity). If the two measures are truly measuring the same construct, the results should be similar or converge. Test scores from the instrument should show low correlation with test scores from other instruments that measure a different construct (discriminant validity). If the two measures are measuring unrelated constructs, the results should not be related, but should diverge. Finally, test scores from the instrument should predict outcomes that we know are related to the construct (criterion validity). For example, based on what we know about the skill constructs, test scores should predict training or education success, job performance, labour market outcomes, and other important life outcomes. An individual’s score can predict one’s current grades or performance in a course (concurrent validity) or predict one’s future employment status (predictive validity).</p>
Generalizability	<p>The instrument can be used with different groups of people and in different settings and still maintain appropriate scoring properties and interpretation. Statistically, this is known as measurement invariance, and advanced statistical techniques can be used to determine whether a construct has a different structure or meaning to different groups or even the same group across time. In general, the instrument should function consistently for different groups of people, including youth, women, older workers, Indigenous people, newcomers, visible minority groups, people living with disabilities, and other vulnerable or underrepresented groups in the labour market.</p>
Consequential	<p>The instrument has been evaluated for its actual and potential positive and negative social consequences, especially in cases where test scores may be invalid or inappropriately interpreted (e.g., due to bias, test not administered correctly, scores used to make inappropriate decisions). Importantly, an assessment’s psychometric properties and demonstrated reliability and validity should inform what contexts it can be used in. Skill assessments can be used for a variety of purposes. In some cases, the assessment could be used to track student progress and lead to positive outcomes by helping the trainer tailor materials and the curriculum. In other cases, the assessment could be used to make decisions about whether an individual receives a certification. If the instrument does not possess rigorous enough properties in this case, there is risk that the individual may experience negative unintended consequences.</p>

Usability: This refers to the ease of administering, scoring, and interpreting the results of the instrument. This can include how long the assessment takes, whether it must be administered in specific settings with specific materials (e.g., audio or video recorders, computers, assessment materials), whether it can be scored easily by the test administrator, scored automatically by computer or other software, or requires more time-consuming expert observers or scorers. Similarly, some assessments can be easily interpreted with simple instructions or rubrics while others require extensive training or interpretation by test developers.

Fairness: This refers to accessibility and fairness of the instrument for use with all people in Canada. It includes the recognition and reduction of potential for bias in both assessment development and implementation. The instrument should measure the intended construct while minimizing the impact of construct-irrelevant barriers related to linguistic, communicative, cognitive, cultural, physical or other factors. If possible, the use of universal design principles can help ensure easy use by diverse individuals (e.g., simple and intuitive instructions, flexible, easy to perceive and comprehend, tolerance for error). Test accommodations should be developed, tested and provided, including accessibility features when appropriate (e.g., for digital assessments). Test items should be relevant, acceptable, and representative of all people in Canada, and diverse voices should be included in the development and testing process. In particular, as discussed under Generalizability, it is important to include diverse subgroups in early tests and studies of validity and reliability.

Sources: SRDC's environmental scan and synthesis of collaborator feedback.

Notes: While Table 3 provides important criteria to consider when evaluating or selecting assessments, the Standards for Educational and Psychological Testing provides more detailed and comprehensive standards for the full process from assessment design, development, and testing to application across different contexts. Recommended by our collaborator Richard Roberts, the most recent edition of the standards was published in 2014 by the American Educational Research Association (AERA), the American Psychological Association (APA), and the National Council on Measurement in Education (NCME). It provides standards guiding foundational evidence that must be in places, such as validity, reliability, and fairness, operational processes (e.g., test design, scoring, test administration, score interpretation, test documentation, rights and responsibilities of test takers and users), and testing applications (e.g., psychological testing, workplace testing and credentialing, educational testing, program evaluation, policy studies, accountability). These updated standards include an increased emphasis on fairness and addresses the impact of technology in assessment, which are both relevant to Skills for Success and its new focus on diversity and modernization of the workplace. These set of standards can be a useful resource to ensure that rigour is applied or at least considered for all steps in the process of assessment development and application and can offer important recommendations for use in different testing contexts.

MEASURING SOCIAL-EMOTIONAL SKILLS: SELF-REPORT ASSESSMENTS

Compared to literacy skills, the assessment of social-emotional skills – especially those aligned with **Communication, Collaboration, Adaptability, and Creativity and Innovation** – requires greater attention and development, especially to establish more rigorous reliability and validity properties for existing and new measures. Currently, self-report measures are likely the most widely used assessment for these skills. However, self-report measures can vary in terms of their development and psychometric properties. In this section, we discuss in more depth the potential shortcomings of self-report measures and strategies to mitigate and reduce these risks.

Using and testing existing assessments: Three case studies

It is not difficult for an individual or an organization to develop their own self-report assessment. Items can be created based on one's knowledge of the skill and one's understanding from past experiences. Such assessments however only have **face validity**, the least rigorous type of validity which refers to the assessment subjectively appearing to measure what it claims to measure. It is not always clear whether a set of items really belong together and fully measure a certain skill.

A better approach, when possible, is to use existing measures, theoretical frameworks, and background research about the skill to inform the development of test items. This can strengthen content, substantive, and structural validity. In both cases, whether developed based primarily on face validity or informed by theory and research, testing and validation of the assessment is still required to demonstrate that it is a reliable and valid measure. Below we briefly present three case studies to illustrate how careful development, research, and testing results in the identification of both strengths and gaps in self-report assessment tools.

Case study 1: The Longitudinal and International Study of Adults

Our collaborators Ross Finnie and Ashley Pullman used data from Statistics Canada's Longitudinal and International Study of Adults (LISA), a recently implemented survey representing approximately 98 per cent of the Canadian population over the age of 15, to examine the relationships between self-reported social-emotional skills and labour market outcomes, including employment and earnings (Finnie & Pullman, 2021). The LISA is also part of a broader international initiative in which a portion of survey respondents also completed PIAAC assessments in literacy, numeracy, and problem solving in technology-rich environments, allowing for testing of how well self-reported social-emotional skills predict labour market outcomes independently of objectively assessed cognitive skills in multiple countries (e.g., Palczynska & Swist, 2016; Rammstedt, Danner, & Lechner, 2017).

As measures of social-emotional skills, the LISA employs short versions of the widely used Big Five Inventory (BFI), which captures self-reported levels of openness, conscientiousness, extraversion, agreeableness, and emotional stability. BFI domains are most often characterized as personality traits, dispositions, or basic tendencies; however, there is the recognition that each domain is related to specific types of skill development and malleability. Skills in these domains can change with age, interventions, or life circumstances (Costa & McCrae, 2017; Cunha & Heckman, 2008; Cunha, Heckman, & Schennach, 2010). As illustrated in Table 4, the BFI domains can promote development of skills that are broadly aligned with **Communication** (extraversion), **Collaboration** (agreeableness), **Adaptability** (conscientiousness and emotional stability), and **Creativity and Innovation** (openness).

The results show both the strengths and limitations of the measures. Some self-reported BFI domains are clearly linked with labour market success, even when accounting for individual characteristics, education, and numeracy level. For example, those with high conscientiousness were more likely to be employed and earn more. Emotional stability was also positively related to earnings, especially for men. However, results for the other domains were less straightforward. For example, extraversion was positively related to productive workplace activities for all, but to earnings only for young adults. And both openness and agreeableness appear to be linked with lower earnings, though as Finnie and Pullman point out, it is unclear how consistent these results are with prior research. For example, openness can show a positive, negative, or no association with earnings. These discrepancies may be attributable to the type of BFI assessment used and/or whether the analyses account for other factors such as cognitive skills and occupational preference that correlate with openness.

Table 4 The Big Five domains and potential alignment with *Skills for Success*

	Openness	Conscientiousness	Extraversion	Agreeableness	Emotional stability
Skill-based definition	Promotes curiosity, creativity, and tolerance.	Promotes high achievement, responsibility, and task performance.	Promotes assertiveness, leadership, and sociability.	Promotes trust, cooperation, empathy, and collaboration.	Promotes emotional regulation, stress resistance, and optimism.
Potentially mapping onto:					
Skills for Success	Creativity and Innovation	Adaptability	Communication	Collaboration	Adaptability

Note: BFI Skill-based definitions are adapted from Kankaraš and Suarez-Alvarez (2019).

These results illustrate several gaps in our understanding of the links between social-emotional skills and labour market outcomes. Though the LISA measures were carefully selected based on documented reliability and validity, further testing may be required to establish their psychometric properties when applied on such a large scale with multiple sub-populations. In addition, the LISA measures are short (only two items per BFI domain) and not fully reflective of the range of underlying social-emotional constructs which may be linked to employment outcomes. Indeed, our collaborator Richard Roberts points out that the brevity of the BFI assessment used in the LISA and other post-PIAAC surveys makes it problematic to make claims based on links to labour market and other outcomes. Indeed, when a broader range of measures

are examined, there are robust and consistent links between measures of work performance and behaviour, and BFI domains (Sackett & Walmsley, 2014)– with conscientiousness and agreeableness being especially predictive of the full range of performance criteria, and emotional stability and extraversion emerging as important for specific criteria. Openness was ranked least important for the performance criteria, though it is rated as an attribute associated with success in a variety of occupations requiring more than a high school diploma.

Case study 2: Building a motivation-to-learn scale with PIAAC data

Gorges et al. (2016) provide a good example of how to refine an existing self-report scale. They used a set of Readiness-to-Learn items from the background questionnaire of the PIAAC to develop a shorter, more psychometrically sound four item Motivation-to-Learn measure. The four-item scale was initially developed after review of the theoretical constructs that make up Motivation-to-Learn, followed by mapping Readiness-to-Learn PIAAC items onto established Motivation-to-Learn measures from the literature to ensure content validity.

The researchers then conducted statistical analyses to determine whether the psychometric properties and structure of their new scale were acceptable. They found that the new four-item scale fit the data considerably better than the original six-item Readiness-to-Learn scale. In addition, because data was collected in 21 countries, they were able to include analyses to determine measurement invariance – i.e., whether the scale showed similar structure and psychometric properties across different populations. Gorges et al. were able to establish that the scale showed sufficient measurement invariance to warrant using it for comparing mean differences between countries as well as relations to other variables. They demonstrated criterion validity by showing that the new scale was linked to engagement in learning (i.e., participation in non-formal education over the last 12 months), even after controlling for level of education.

This study shows that gaps in the psychometric rigor of existing measurement tools can be effectively addressed without necessarily sacrificing usability or increasing respondent burden. Indeed, the analysis described above produced a scale that was even shorter than the original.

Case study 3: The Behavioral, Emotional, and Social Skills Inventory (BESSI)

The BESSI is a newly developed self-report inventory of items that assess social, emotional, or behavioural skills (Soto, Napolitano, & Roberts, 2020), and is based on an integrative model that organizes the skills within a taxonomy of five major domains. To support their model, the authors argue that though there are many different social-emotional skill taxonomies which may label their domains quite differently, nevertheless they can identify several points of content overlap shared across taxonomies and strikingly aligned with the Big Five personality traits.

However, Soto et al. argue (as we have in earlier reports) that skills should be distinguished from personality traits, referring to skills as capacities to do things in a given situation rather than tendencies to behave in a certain way across situations. They emphasize that skills and traits are often positively related – e.g., when repeated skill use leads to the development of traits – but not always. People with high trait tendencies may often exhibit unskilled versions of a behaviour (e.g., when an extravert talks a lot at a meeting, but fails to contribute meaningfully), while those with low trait tendencies may enact high levels of skill when needed. Thus, the distinction between skills and traits is important when designing measures. This model from Soto and colleagues is promising in terms of its potential application to *Skills for Success* in a number of ways:

- **Skill-based language:** It organizes social-emotional skills measures within five major domains, each of which is defined according to related capacities to do things (skills) rather than tendencies to behave in a certain manner (traits or attributes).
- **Promising evidence of reliability and validity:** Preliminary psychometric testing of the inventory shows good reliability, internal consistency, test-retest reliability, and a factor structure that is consistent with their integrative model.
- **Broad alignment with definitions and constructs:** The five domains appear to show broad alignment with the four social-emotional *Skills for Success* – i.e., Social Engagement Skills (Communication); Cooperation Skills (Collaboration); Self-Management Skills and Emotional Resilience Skills (both aligned with Adaptability), and Innovation Skills (Creativity and Innovation) – though more work is needed to map out the items in each domain against *Skills for Success* constructs.

In general, leveraging existing assessment tools with documented reliability and validity can be a good strategy, though it may not always be safe to assume that the existing scales are immediately ready for use. For example, some dimensions of a broad inventory like the BESSI may be out of scope or less relevant to specific *Skills for Success* constructs, while others that are more relevant may nevertheless not map out against the constructs in a straightforward way.

For example, collaborators have pointed out that some *Skills for Success* definitions may include underlying constructs that are relatively unrelated – if so, scaling them into a unidimensional measure will not make sense. As mentioned above, at first glance Adaptability constructs appear to map onto two separate BESSI dimensions (self-management and emotional resilience), which would have important implications for how Adaptability assessments are developed, used, scored, and interpreted.

Even with existing measures, pilot testing is needed to confirm psychometric properties for the full range of contexts and populations in which the measure is to be used. Pilot testing can

confirm to what extent the assessment demonstrates the range of reliability and validity properties summarized in Table 3 and identify gaps to be addressed.

Improving self-report assessments

As mentioned briefly in the previous section, self-report assessments may be undermined by various kinds of biased responding, a concern also raised by project collaborator Richard Roberts. These biases are explored in more detail below, along with techniques that may be applied to mitigate bias and thus augment the accuracy of self-reports.

- **Reference bias:** When individuals rate themselves on a particular skill, the individual makes an interpretation of what that behaviour or skill means. For example, different individuals might understand “being impulsive” or “cooperating with others” differently depending on their past experiences. Importantly, whether an individual thinks his or her behaviour or skill is strong depends on the individual’s reference point, that is, what is common of the people in his or her social circle. For example, a moderately cooperative person might see himself or herself as highly cooperative if surrounded by uncooperative people.
- **Social desirability bias:** Individuals may be more likely to respond in ways that they know are socially desirable or acceptable. This can lead to over-reporting good behaviours and underreporting more negative behaviours. For example, individuals might be more likely to report engaging in positive behaviours such as completing tasks or helping others, and less likely to report engaging in behaviours such as taking unscheduled work breaks or starting conflicts with others.
- **Acquiescence bias:** Individuals can show a tendency to consistently respond “yes” or rate all items high or positively, or consistently respond “no” or rate all items low or negatively. Some measures use reversed items to try and counteract this bias. For example, some items are described positively (e.g., “I show up on time”) and some are described negatively (e.g., “I am often late”). However, if individuals still show this bias, this can distort the correlations between the items, making some items seem more correlated, and others less correlated (Abrahams et al., 2019).
- **Faking:** This refers to situations where an individual intentionally endorses positive behaviours and traits at a higher rate (i.e., to raise their scores). Faking may be less likely to occur in low-stakes contexts where assessments are used primarily for learning, skill development, or group level program evaluation, compared to high-stakes contexts where an individual has greater incentive to fake. However, there is debate about how much of a concern faking truly is and what are the best methods for mitigating faking (e.g., Hogan et al., 2007; Morgeson et al., 2007; Viswesvaran & Ones, 1999; Ziegler et al., 2011).

Survey techniques to improve self-report:

- **Forced-choice response format:** Forced-choice formats are designed to reduce many of the biases found with self-report by forcing test-takers to choose between similarly attractive or equally socially desirable options. Individuals are given two or more statements that are equally socially desirable and asked to either endorse the one that is most true of themselves or to rank the statements by how true they are of themselves. For example, individuals might see statements such as “I stay calm in stressful situations”, “I listen carefully when others speak”, and “I come up with original ideas”. Because all are considered positive behaviours, it decreases social desirability biased responding as well as faking. Acquiescence and extreme responding are also not possible with this type of format (Abrahams et al., 2019).

Though forced-choice assessments can be less straightforward for individuals to complete and require the development of complex scoring systems, the investment may be worth it, especially if the goal is to develop an assessment framework similar to those used for cognitive and literacy skills – i.e., one that produces continuous scores that can be used to develop proficiency levels and equated across each new edition of the assessment. Evidence also suggests that forced-choice assessments are valid and can predict job outcomes (e.g., Salgado & Táuriz, 2014).

- **Anchoring vignettes:** In addition to completing self-report ratings, individuals are given an anchoring vignette to rate. Individuals rate the behaviour, skill, or trait of a person in a hypothetical scenario using the same response format and rating scale as they use to rate themselves (Abrahams et al., 2019). Because all individuals completing the assessment rate the same vignette, any variability among individuals can be attributed to differences in response style, including reference and acquiescence bias. Individual ratings can then be statistically rescaled based on the anchoring vignette to account for these differences. Developing valid anchoring vignettes can be resource intensive, however.
- **Behaviourally anchored rating scales:** Most rating scales use numbers or generic labels to anchor scales, such as using a 5-point scale with the labels “strongly disagree”, “disagree”, “neutral”, “agree”, and “strongly agree”. Behaviourally anchored scales on the other hand use skill levels defined in rubrics to anchor scales (Abrahams et al., 2019). For example, an item related to completing tasks might have anchors such as “Stays focused and does not get distracted, completes tasks independently without help” or “Completes tasks when required, but sometimes needs reminders to stay focused”. This type of format has been often used in formative assessments and can support learning by providing clear expectations for behaviours and clear feedback. When well-designed, such rubrics can increase internal consistency of test scores. However, there is currently insufficient evidence to conclude that rubrics can lead to valid inferences about performance (Jonsoon & Svingby, 2007 in

Abrahams et al., 2019). A greater number of validity studies is needed to determine the validity of this format.

- **Triangulation:** Triangulation involves using multiple methods of assessment or sources of data to measure a skill. This overcomes weakness or biases from any one assessment and provides a more comprehensive understanding of a particular skill and construct. In the context of self-report assessments, biases associated with self-report can be attenuated by integrating results with ratings by parents, teachers, trainers, or employers. Each rater comes with their own biases and their own perspective and judgement of skill levels. However, the impact of rater effects and individual biases can be reduced by statistically integrating ratings from multiple observers, sometimes producing a better predictor of outcomes than ratings from any one observer (Kankaraš et al., 2019). However, ratings must be appropriately correlated and show the acceptable psychometric properties to be combined. Importantly, ratings must be appropriately correlated and show the acceptable psychometric properties to be combined. However, as highlighted by project collaborator Richard Roberts, research shows that ratings between self and others are not always well-correlated and this can limit how triangulation is used and for what purposes.

In an example where correlations were high enough to be leveraged to improve predictive ability, the OECD used triangulation to assess social-emotional skills among students aged 10 to 15 years across 10 different countries. Skills were reported by students themselves, teachers, and parents. Researchers used a quantitative methodology called Multi-Trait Multi-Method to look at the relations between these three types of reports and test the construct validity of the instruments (Kankaraš et al., 2019). This included assessing whether the three types of reports are assessing the same skill constructs, the extent of “rater” effects, and both convergent and discriminative validity. Using various statistical techniques, researchers determined that there was moderate overlap in skill estimates from each rater, but that each rater also provided incremental information. For example, students may behave differently across contexts and the types of behaviours observed by teachers can differ from those observed by a parent. The researchers also identified strong rater effects (i.e., the ratings of different skills were correlated for each rater). This bias was reduced when researchers developed a composite score derived from triangulating ratings from the three raters and reported stronger relations to life outcomes compared to using individual ratings. These findings suggest that triangulation can strength results and reduce the impact of biases.

At a more formative stage, without necessarily integrating ratings statistically as described above, triangulation can also be used by trainers to support self-reflection, learning and discussion of program outcomes between staff and participants. For example, the Employability Skills Assessment Tool (ESAT) involves both observation-based ratings from staff and self-assessment ratings from learners. This allows comparison of perceived

strengths and weaknesses from both staff and learner perspectives and discussion of skill areas where ratings significantly differ.

MEASURING SOCIAL-EMOTIONAL SKILLS: PERFORMANCE MEASURES AND SITUATIONAL JUDGEMENT TESTS

Though several collaborators pointed out the difficulty of developing task scenarios for learners to demonstrate the full range of skills underlying each *Skills for Success* domain, in some cases it may be possible to leverage existing task-based assessments – for example, to assess creativity (Torrance, 1966; Carroll, 1993) and critical thinking (Facione, 1991). It may also be possible in some cases to leverage assessments designed to elicit behaviour under controlled experimental conditions (e.g., to measure grit – Alan, Boneva, & Ertca, 2016). Though task-based performance assessments make faking and other kinds of biased responding difficult, other psychometric properties (e.g., test-retest reliability, convergent and predictive validity) may be wanting (Eisenberg et al., 2019; Enkavi et al., 2019).

Some collaborators identified situational judgement tests (SJTs) as a promising approach – one collaborator in particular (Richard Roberts) has considerable experience developing and testing SJT items, response options, and scoring keys to assess constructs underlying collaboration and teamwork (e.g., MacCann & Roberts, 2008; Wang et al., 2009; Hellwig, Roberts, & Schulze, 2020). Similar methodologies have been developed to assess how other skills such as Communication and Adaptability are applied in the context of working with others.

Interest in SJTs has generally increased greatly over the last 25 years (Campion et al., 2014 in Abrahams et al., 2019). These assessments have been shown to be related to various important outcomes such as college success and leadership, and there is increasing evidence that they can demonstrate high construct validity including predictive and consequential validity (Lipnevich et al., 2013). For example, one study of high school students showed that an SJT of teamwork was correlated with GPA more than a self-report rating scale of teamwork (Wang et al., 2009).

SJTs present an interesting alternative to self-report assessments. As described in the previous section, SJTs present test-takers with a variety of situations, each with several possible responses that must be evaluated. SJTs may use either maximum or typical performance instructions (e.g., “what is the best response” versus “what would you do”). They retain acceptable levels of usability as they can be presented in either a written format (and completed with pencil and paper or on the computer) or on video, and can be easily scored. A frequently cited advantage they have over self-report is that they can more directly and objectively assess an individual’s knowledge and skills and present more realistic, contextualized, and engaging scenarios which can reflect more subtle and complex judgment processes than are possible with conventional self-report. While SJTs are generally held to be less susceptible to faking compared to self-

assessments, they can be susceptible to response distortions (Sackett & Lievens, 2008). For example, behavioural tendency items (“what would you do”) can still be prone to faking and response bias, while more knowledge-based items (“what is the best response”) may correlate with general cognitive ability. As a result, items designed to measure different skills often intercorrelate with each other, making it difficult to isolate specific skills and establish discriminant validity. In addition, as noted above, compared to task-based assessments, individuals only need to select the best response without having to behaviourally demonstrate it.

Given the interest in the use of SJTs to measure social-emotional skills, we briefly highlight examples of how SJTs have been used in a wide variety of contexts to assess social-emotional or other soft skills, including some that are medium to high stake. Although more work is needed to map these assessments onto *Skills for Success* domains, at first glance they seem to be potentially aligned with **Communication, Collaboration, Adaptability, and Creativity and Innovation**.

- **Employability skills:** SJTs have been used to assess various employability skills, as evidenced by two example assessments developed in the United States (SRDC, 2019). The Workplace Readiness Skills (WRS) assessment developed by the Department of Career and Technical Education Services, Virginia Department of Education was designed for use in high schools and has been used across multiple states. The assessment uses SJT items to assess Personal Qualities and People Skills including positive work ethic, integrity, teamwork, self-representation, diversity awareness, conflict resolution, creativity, and resourcefulness. This assessment has been validated although the information is not publicly available online (https://www.ctecs.org/sites/default/files/files/SampleWRS_50.pdf). Another example is the Workforce Skills Certification System designed by the Comprehensive Student Assessment System (CASAS), a non-profit organization providing basic skills assessments and curriculum tools. The certification system includes the assessment of soft skills such as Personal Qualities (integrity, responsibility, self-esteem, self-management, sociability) and Customer Care (commitment to quality, customer relations, decision-making). Individuals are asked to watch video clips of work scenarios and answer a related set of multiple-choice questions (<http://www.learning-resources.com/>).
- **School admissions and assessments:** The Association of American Medical Colleges Situational Judgement Test (AAMC SJT) is a new online exam used to assess the suitability of prospective medical students in eight core competencies including service orientation, social skills, cultural competence, teamwork, ethical responsibility to self and others, reliability and dependability, resilience and adaptability, and capacity for improvement (<https://students-residents.aamc.org/applying-medical-school/article/about-aamc-situational-judgment-test/>). Other similar SJTs are used to assess seven dimensions of integrity in prospective medical students (Husbands et al., 2015), empathy in pharmacy students and practitioners

(Wolcott, 2018), and eight dimensions of leadership in students of leadership studies (Normansell, 2011).

- **Education:** The first SJT-based selection test for prospective candidates applying to primary teacher education programs was recently developed by Klassen and colleagues (2016). The assessment presents scenarios in three broad domains, specifically emotional support, classroom organization, and instructional support based on the theoretically-based Classroom Assessment Scoring System. The researchers concluded from their process that such assessments should be informed both by subject matter experts and their experience with critical incidents and theoretical frameworks. Other SJTs have since been developed to assess teachers' non-academic attributes. For example, working with the New South Wales Department of Education in Australia, Durksen and Klassen (2018) developed a SJT to assess attributes particularly important for teaching in rural and remote settings, working with experienced teachers to develop the scenarios and having items reviewed by principals. Scenarios assessed four clusters of attributes including empathy and communication, resilience and adaptability, organization and planning, and culture and context.
- **Military and business:** An example of SJT used to measure adaptability in business and military settings assesses five dimensions of adaptive performance (identifying signs of change, adjusting to signs of change, exhibiting attitude toward change, initiating change, exploring new approaches, tools, and technologies). Each dimension is assessed with three items or scenarios (Grim, 2010).
- **Personality assessment for human resources:** Researchers have developed a SJT based on a well-known personality framework – HEXACO personality dimensions (Oostrom et al., 2018). As human resource professionals often use personality assessments as part of employee selection, this tool provides an alternative format. It was developed with 24 items, 4 items for each of the six dimensions (Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness, Openness to Experience).

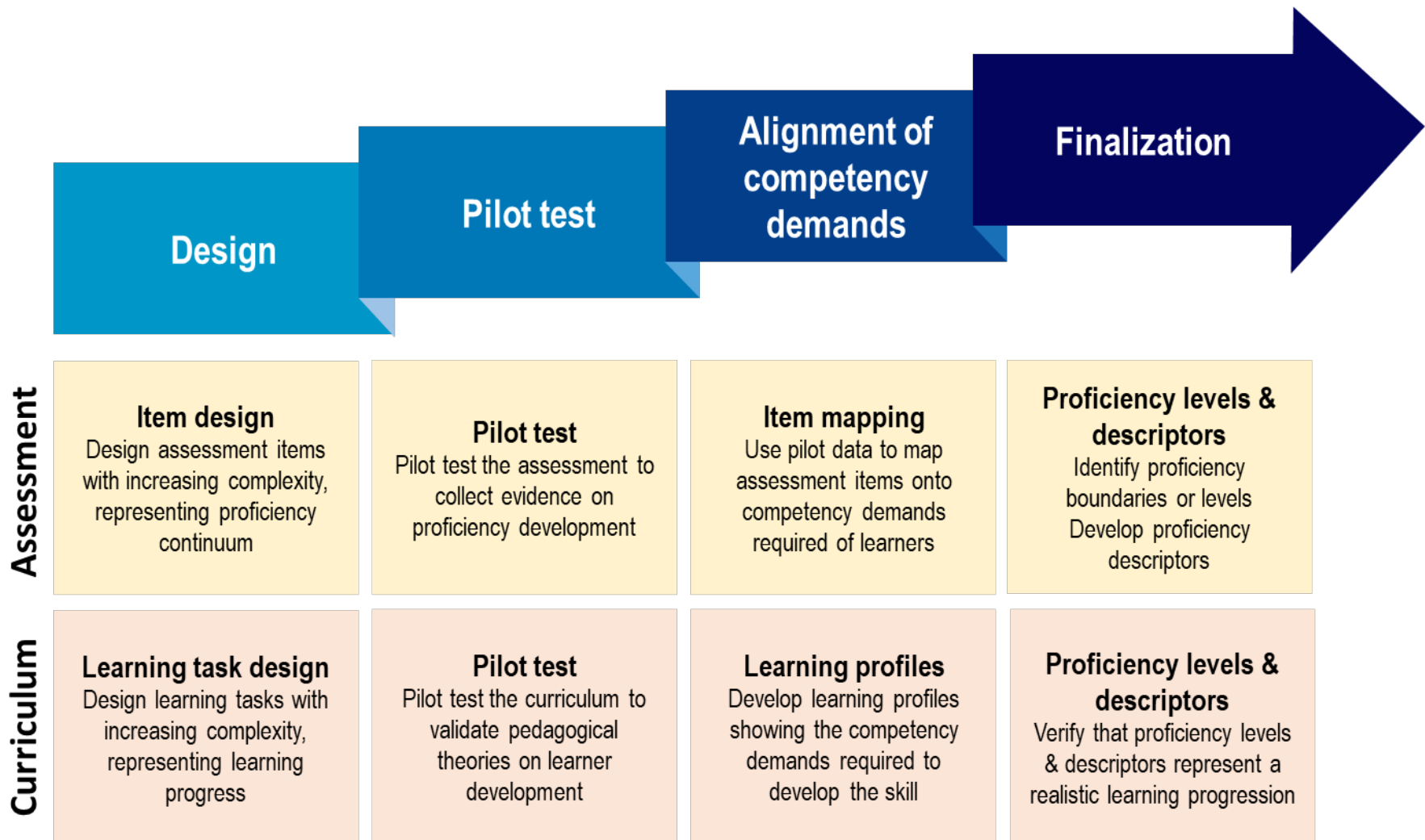
In summation, though various options for assessment of social-emotional skills have often been placed into broad categories based on perceived strengths and liabilities in relation to each other, details are more important than generalities. It is important for all methods to be tested against a common set of reliability and validity criteria. Pilot testing is needed to clarify the tradeoffs between different measurement approaches – in some cases, it may be possible to develop performance measures or SJTs from an initial inventory of self-report items (Soto et al., 2020). Different approaches may even reveal complementarity, in the sense that different methods can be used to assess separate constructs within a given skill, and each may independently predict real world outcomes (Friedman & Banich, 2019). At this stage, we recommend exploring a variety of options when developing assessments, and maintaining consistent testing criteria to facilitate decision-making.

PROFICIENCY DEVELOPMENT PROCESS

As previously discussed, **proficiency scales and associated descriptors should be developed through an evidence-based and collaborative process, with curriculum and assessment development experts working in tandem.** This is because fundamental to the process are both an expectation of how skill acquisition and development happen from a pedagogical standpoint, and a consensus as to what serves as evidence of that proficiency development from an assessment standpoint (OECD, 2019; Turner, 2014; Perie et al., 2008). Proficiency descriptors must provide a balance between being *specific* enough to allow instructors to envision the classroom learning behaviours associated with the skills described, yet *general* enough to apply to multiple forms and formats of assessments. As the team of collaborators Scott Murray, Janet Lane, and Richard Roberts indicated, the process should be structured iteratively, starting with measurement and instruction, cycling through multiple steps to develop a fulsome understanding of the variables that underlie or predict task difficulty. Proficiency levels only emerge if they can be linked to shifts in the underlying determinants of difficulty that are themselves linked to material shifts in outcomes and to shifts in instructional content.

Figure 5 describes the process in which assessment and curriculum development experts can work in parallel to design, pilot test, align, and finalize the proficiency level descriptors *Skills for Success*. The summary of this process is informed by existing technical reports on proficiency levels and descriptors designed in other jurisdictions (e.g., PISA, PIAAC, skills development initiatives in the UK and Australia). The majority of our collaborators not only supported but emphasized the importance of carrying out the process rigorously and thoughtfully for each of the nine skills in the framework. Where possible, we cite the collaborators who particularly reinforced or elaborated on the considerations that need to go into each step of the process.

Figure 5 Development process of proficiency level descriptors



PHASE 1: DESIGN

In this phase, experts in assessment development and curriculum design review the definitions and constructs of *Skills for Success* to develop, update, customize, or enhance assessment tools and training materials, respectively. Where rigorous assessment tools and training materials already exist such as for Reading and Numeracy, this phase provides opportunities to tighten their alignment with the updated definitions and constructs of *Skills for Success*. Where new tools and materials are needed, especially for Adaptability and Creativity and Innovation, this phase provides opportunities to design them in a structured way.

As illustrated in Figure 5, the key tasks in this phase are:

- **Item design:** Assessment development experts design assessment items with varying degrees of complexity, representing proficiency levels for any, some, or all of the nine skills in *Skills for Success*. Special considerations need to be made regarding the newly added or substantially updated skills – for example, **Adaptability**. As previously discussed, assessments of domains related to Adaptability currently rely heavily on self-reported method. It remains an open question if score distributions generated from this method are conducive to the generation of proficiency levels and associated descriptors. Even among our collaborators, there are some disagreement, with some saying it can be done and some saying, by design, it would not be feasible. Such a challenge represents opportunities for future work. In either case, the design of assessment items for skills such as Adaptability should take into considerations the key reliability, validity, and usability properties outlined in Table 3. Another example of opportunities for design work is the incorporation of Document Use into **Reading** and **Numeracy**. As previously discussed, some preliminary development work such as the one from Michael Herzog’s team is already underway. However, regarding incorporating Reading and Document Use, the collaborator team Scott Murray, Janet Lane, and Richard Roberts disagreed and thought that it should not be done. Such points of disagreement among collaborators are important to consider and pilot test. Another potential line of exploration is to supplement the objective assessment of **Numeracy** with measures of math-related self-confidence, self-efficacy, attitudes, anxiety, and opportunity to learn, as these domains may be related to Numeracy outcomes beyond performance on objective tests. This suggestion was raised by Paul Brinkhurst and echoed by the collaborator team Scott Murray, Janet Lane, and Richard Roberts. *For more examples on other skills, please refer to the previous section on “Building valid assessments to inform proficiency” of this report.*
- **Learning task design:** Curriculum design experts can develop and organize learning tasks in varying degrees of complexity, representing learning progress of any, some, or all of the nine skills in *Skills for Success*. For the soft and social-emotional skills – Problem Solving,

Communication, Collaboration, Adaptability, and Creativity and Innovation – there is substantial value-add in ensuring the learning tasks align with the definitions and constructs, especially with the conceptualization of skills as repeatable processes that learners can practice, enact, and develop into habits, rather than as fixed traits or predispositions. Such skill-based language should be considered and incorporated into the design of learning tasks. *For further information, please refer to “Definitions and constructs” in this report.*

Ideally, by working in tandem, curriculum designers and assessment developers will achieve a preliminary alignment between the learning tasks and the assessment items, i.e., the tasks learners are taught should align with the items they will be assessed, to meaningfully capture their learning progress and proficiency acquisition.

PHASE 2: PILOT TEST

Phase 2 provides opportunities to pilot test the tools and materials developed in Phase 1. **All of our collaborators could not emphasize enough the importance of the pilot-test phase.** Besides establishing evidence of psychometric properties and implementation feasibility, they see these pilot data as providing crucial evidence to assure stakeholders of the relevance, applicability, and inclusivity of *Skills for Success*. Ideally, the tools and materials should be pilot tested with a diverse range of learners to examine, address, and minimize any potential bias that may be overlooked in Phase 1, especially along the line of gender, socio-economic status, socio-cultural experience, race, and age (a point particularly emphasized by the Bow Valley College team).

As illustrated in Figure 5, the key tasks in this phase are:

- **Pilot test the assessment with a training program**, collecting evidence on the psychometric properties of the assessment. It is important to note that assessments should be pilot tested in the context of a training program that aligns with its intended use, to ensure assessment items are validated through a realistic, practical learning process. This helps ensure these pilot assessments achieve the right balance of rigour and usability, i.e., rigorous enough to address data collection objectives, and usable enough to be implemented within realistic training timeframes and contexts.
- **Pilot test the curriculum and implement an assessment** that aligns with training objectives and contexts, collecting evidence of proficiency development. As pointed out by multiple collaborators, including Paul Brinkhurst and the Bow Valley College team, training programs should select a manageable set of skills to implement and pilot test, depending on their training objectives, target populations, and learning contexts. As well, based on

feedback from practitioners validating the definitions and constructs in the focus groups, there are plenty of exciting opportunities to leverage and enhance existing materials to better align with the new and updated skills. For example, practitioners working with jobseekers could design materials to encourage learners to apply the process of **Creativity and Innovation** to reflect and improve their own learning and employment plans. Practitioners working with Indigenous communities also saw opportunities using **Adaptability** to encourage learners to adapt the skill assets they have from life contexts to transfer and apply them to employment contexts. Practitioners delivering workplace training programs could see opportunities to incorporate the **Problem Solving** constructs to enhance their industry-specific problem-solving programming. *For more examples on other skills, please refer to “Validation – Feedback from practitioners” in this report.*

Another objective that should be achieved by the end of Phase 2 is the validation of the alignment between the assessment items and the learning tasks designed in Phase 1. This alignment is crucial in ensuring the parallel process produces outputs that support both assessment development and training design and delivery. As the team of collaborators at Bow Valley College emphasized, activities in Phases 1 and 2 should form a feedback loop where gaps identified at the end of Phase 2 provides opportunities to return to Phase 1 to re-design tasks and assessments, which would then undergo another round of pilot-testing. This process allows for the continual refinement of our understanding of proficiency, helping the field move forward with evidence-based best practices.

PHASE 3: ALIGNMENT OF COMPETENCY DEMANDS

Phase 3 brings together the work done in Phases 1 and 2. In this phase, the theoretical and conceptual foundations informing the design of assessment items and learning materials in Phase 1 can be validated using pilot data collected in Phase 2. The combined outputs from Phases 1 and 2 are examined in Phase 3, facilitating a deeper understanding of not only how skills acquisition and proficiency progression occur from a pedagogical standpoint, but also how evidence of such acquisition and progression can be validly, reliably, and practically captured from an assessment standpoint.

As illustrated in Figure 5, the key tasks in this phase are:

- **Item mapping:** Assessment developers can use the distribution of assessment scores collected through Phase 2 to map assessment items onto the competency demands required to successfully complete the items. This process is typically done for assessments with clear, objectively right or wrong answers (e.g., TOWES or ESG assessments of **Reading** and **Numeracy**), or with a standardized rubric (e.g., assessments of **Writing**, Speaking and Listening – which can be mapped onto **Communication** – from IELTS, TOEFL). Further

exploratory work is needed to see if it can be done for other assessment methods, especially the ones that the newer skills rely on including **Adaptability**, such as situational judgement tests or subjective assessments such as forced choice. As the collaborator team Scott Murray, Richard Roberts, and Janet Lane highlighted, it is necessary to understand the strengths, limitations, and purposes of the available approaches to assessment in order to design and choose the proper assessment methods. The activities required in this phase may have implications for the Design phase, e.g., enhance the design of subjective assessments by adding items that can vary in complexity, if possible. Once the items can be mapped, assessment developers can describe the competency demands for groups of items in increasing complexity, iterating towards a description of proficiency levels.

- **Learning profiles:** In this phase, curriculum development experts can focus on refining the learning profiles describing the competency demands required to develop the skills, based on evidence of learner progress collected in Phase 2. Similar to the process done for the Essential Skills framework (i.e., the Reader's Guide), different skill dimensions may need to be identified to provide a basis to describe increasing levels of complexity in the learning progress. This phase poses unique opportunities and challenges for the newer skills – it is challenging to write overarching, transferrable learning profiles of skills such as Adaptability or Creativity and Innovation; however, the value-add of such products to the field is substantial.

At the end of Phase 3, assessment development and curriculum design experts should be able to further improve the alignment between assessment competency demands and learning competency demands, supported by evidence-based research. Outputs from Phase 3 help iterate toward a more refined draft of proficiency level descriptors to prepare for Phase 4.

PHASE 4: FINALIZATION

In Phase 4, assessment development and curriculum design experts should expect to work closely and iteratively together. Assessment developers can use their understanding of score distributions and item mapping – a result of Phase 3 – to identify proficiency boundaries or cut-off points on the distribution that can reasonably represent proficiency level boundaries. Draft descriptors can be developed, to be reviewed and refined by curriculum designers. Curriculum designers can incorporate their understanding of observed learning progress – a result of Phase 3 – to ensure proficiency level descriptors represent a realistic process of skills acquisition and development, from a pedagogical standpoint.

As illustrated in Figure 5, the key tasks in this phase are:

- **Identify** proficiency boundaries or proficiency levels;
- **Develop** and refine level descriptors; and
- **Finalize** proficiency levels and descriptors by coming to a consensus, ensuring they can inform both assessment development and curriculum design going forward.

As the team of collaborators Scott Murray, Richard Roberts, and Janet Lane emphasized, this process is by no mean linear or straightforward. It should be an iterative process where findings and lessons learned from one pilot can inform and enhance the design and implementation of subsequent pilots. The end product of this process is a better understanding of the underlying determinants of proficiency that are linked to both assessment outcomes and instructional content, as Scott Murray, Richard Roberts, and Janet Lane articulated. Last but not least, the assessment and training tools that result from this process will also enrich the field with pilot-tested and validated materials, to support further design, implementation, and innovation in training delivery and outcome measurement.

APPENDIX A: PRACTITIONER PROFILE

Figure 6 Where the practitioners live and work



Table 5 Focus group characteristics

Session	Organizer	Number of practitioners and their job profiles	Populations served	Location
1	AWES	8 <ul style="list-style-type: none"> Community literacy instructor working with workforce development model, entry-level jobs in food and beverage manufacturing Community-based instructor and curriculum developer Language instructor and curriculum developer in a college Post-secondary education, adult education practitioner in a college Language instructor working with physicians in post-secondary education setting Essential Skills facilitator and curriculum developer 	<ul style="list-style-type: none"> Adults who have literacy and Essential Skills challenges Internationally trained physicians Indigenous learners 	AB, BC, ON, including First Nations and remote communities
2	AWES	4 <ul style="list-style-type: none"> Director of employment training for First Nations LINC instructor at local college Work experience instructor at local college Writing centre instructor at a college 	<ul style="list-style-type: none"> Indigenous learners Newcomers (immigrants and refugees) 	AB, including rural communities
3	AWES	5 <ul style="list-style-type: none"> Literacy and basic skills provider Employment counsellor (sector-specific training) Employment counsellor working with newcomer women Employment training practitioner working with people who face barriers such as disabilities or social disadvantages Essential Skills instructor 	<ul style="list-style-type: none"> Low-skilled jobseekers Newcomers Newcomer women CLB 5 & 6 	NB, ON, including rural communities

Session	Organizer	Number of practitioners and their job profiles	Populations served	Location
4	AWES	5 <ul style="list-style-type: none"> ▪ Former workplace Essential Skills trainer working with adults with intellectual disabilities and current adult education curriculum consultant with provincial government ▪ Job development coordinator for program serving adults with intellectual disabilities ▪ Essential Skills trainer for program serving adults with intellectual disabilities ▪ Workplace Essential Skills program officer ▪ Manager for workplace language training CLB 3-5, 6+, with focus on specific industries 	<ul style="list-style-type: none"> ▪ Adults with intellectual disabilities ▪ Newcomers ▪ Internationally trained professionals ▪ Low skill level learners 	NB, ON
5	AWES	2 <ul style="list-style-type: none"> ▪ Employment counsellor working with newcomer women ▪ Job developer working with Indigenous people, previously educator in career development working with newcomers 	<ul style="list-style-type: none"> ▪ Newcomer women ▪ Indigenous learners 	ON, SK
6	EMC	5 <ul style="list-style-type: none"> ▪ Industry-contextualized Essential Skills instructors (manufacturing sector) ▪ Manager of training and development in workforce development (manufacturing) ▪ Project coordinator of workplace training program (manufacturing) ▪ Leadership in manufacturing sector consortium 	<ul style="list-style-type: none"> ▪ Current employees in manufacturing industry, including production workers and supervisors 	BC, ON, NB, Nunavut
7	Douglas College	10 <ul style="list-style-type: none"> ▪ Employment and Essential Skills instructors in the Indigenous learning context 	<ul style="list-style-type: none"> ▪ Indigenous learners 	BC, AB, ON, including rural and remote communities

Session	Organizer	Number of practitioners and their job profiles	Populations served	Location
8	Douglas College	20 <ul style="list-style-type: none"> ▪ Director of a non-profit immigrant serving organization ▪ Communication and computer literacy instructor ▪ Workplace Essential Skills officer ▪ Essential Skills instructors ▪ Employment counsellors ▪ Employment specialists ▪ Manger of an employment service provider ▪ LINC instructor ▪ ESL instructor ▪ Manager of language service provider 	<ul style="list-style-type: none"> ▪ Newcomers ▪ Older newcomer adults 55+ ▪ Skilled immigrants ▪ Youth 	BC, ON, NB, including rural communities
9	Douglas College	6 <ul style="list-style-type: none"> ▪ Program developer ▪ Corporate training practitioner ▪ Facilitator/instructor/online Essential Skills practitioner ▪ Essential Skills Practitioner Training instructors ▪ Workplace Essential Skills instructor 	<ul style="list-style-type: none"> ▪ Barriered learners ▪ Youth ▪ Indigenous learners ▪ Older workers 	BC, Inuvik, including remote communities
10	Douglas College	12 Continuing Education and Training Association (CETA) BC members, including: <ul style="list-style-type: none"> ▪ Essential Skills instructors ▪ Directors and managers of education and training at colleges and universities ▪ Coordinator in Faculty of Management ▪ Employment program practitioner ▪ Course developer 	<ul style="list-style-type: none"> ▪ Diverse learners 	BC, including First Nations and remote communities

Note: The information in this table was not collected in a systematic manner but is based on information that practitioners chose to freely share during the focus group sessions. This table reflects the general profile of our focus groups but is not an exhaustive or comprehensive list of practitioner backgrounds, populations served, or locations.

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