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Pan-Canadian Systems-Level Framework on Global Competencies: LITERATURE REVIEW

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There is a growing awareness that schools must prepare students for an increasingly complex world. Impacted by rapid changes in technology, environmental degradation, urbanization, income and wealth inequality, and geopolitical challenges, students are graduating into a world where they contemplate career paths in work environments that are increasingly precarious and “gigged.” This need to prepare students for a fundamentally different world has come to play a central role in statements of educational priority around the world—from Ontario (Government of Ontario, 2016) to Australia (ACARA, 2013). Global changes and uncertainty have motivated attention to innovation in technology (OECD, 2005), environmental responsibility (Finland, 2009), greater global integration (OECD, 2016), and access to education itself (Domaleski et al., 2015). The Organisation for Economic Cooperation and Development states in its publication, *Trends Shaping Education 2016*, that the “transferability of skills and experiences is one of the biggest challenges for a diverse and mobile world” (OECD, 2016, p. 31).

These new issues have motivated policy-makers and educators to question whether the current educational system can respond adequately to the challenges characteristic of *this* century, or whether a fundamentally new model is needed (Bolstad & Gilbert, 2012; Government of Ontario, 2016; Philips & Schneider, 2016). Education policy-makers and researchers see a changed world and have highlighted a number of specific changes that call for significant education reform. One of the main responses is competency-based education (Schuwirth & Ash, 2013).

Efforts to articulate the competencies needed to allow students to thrive are not new, but underpinning this resurgence of global competency-based education is an increasing recognition that the role of education goes beyond graduating students who are academically prepared. The OECD (2018b) stated that, in essence, educators are trying to answer two key questions to prepare youth for today’s world: (1) what skills, attitudes, knowledge, and values will students need to thrive and shape their world? and (2) how can educational systems ensure that every student develops these skills effectively?

This paper has been developed as part of the Council of Ministers of Education, Canada’s (CMEC) work on global competencies, and its project to develop a pan-Canadian transformative

systems-level framework to support their integration in education systems across the country. This paper looks at the responses to the two key questions in the literature. The paper intends to inform the development of the framework and has been developed in two parts, focusing on competency frameworks in the first and system transformation in the second part.

The first part begins with a brief review of various competency frameworks—specifically, the trend toward global competencies and competency-based education from both international and Canadian perspectives. This first section summarizes the arguments motivating this shift to global competence and competency-based education. It also identifies key issues pertaining to the integration of global competencies and the potential impacts of these issues on system transformation.

With these concerns in mind, the second part of the paper focuses on the system transformation required to integrate global competencies in education. This section identifies the most salient themes/focus areas on which to build a systems-level framework.

As the reader will see in the following descriptions, there are multiple understandings and uses of the terms *global competence*, *global competency*, *competency*, and *competency-based education* in the literature. From the authors' perspectives, a "competency" is a related set of skills, knowledge, and dispositions. A *global competency* is a competency that relates globally to the educational experience (i.e., crosses all curricula), is global to the learner (i.e., draws upon and informs all of the individual's learning), and is global to citizenry (i.e., enables effectiveness across the globe). In the literature, however, a *global competency* often indicates a cross-curricular competency. *Competence* is the result of acquiring a competency, therefore global competence refers to being in possession of global competencies. Finally, *competency-based education* is a system that focuses on competencies as educational aims that can be reached and assessed in a variety of ways, settings, and time frames. The focus on competencies as the common goal shifts attention away from "time on subject" or "process of instruction" as the organizers of educational systems. In the literature, this shift in focus is widely varied within the label of "competency-based education."

Methodology

This report is based on a review of the literature on the emergence of global competencies as a framework for education policy and practice, and on national and international implementation of systems transformation. The purpose of this literature scan is to explore pan-Canadian and international research on global competencies, the support for the integration of global competencies and competency-based education, and the conditions under which successful transformations are achieved.

The approach to scanning the literature was two-fold:

- First, using keyword searches, the researchers looked across the Internet and scholarly databases, and also targeted literature on education systems that provide either comparable contexts to Canada's or particular insight (such as the United States, Australia, New Zealand, Finland, etc.).¹
- Second, an information request was made to representatives of Canada's provinces and territories to share government documents, frameworks, policy briefs, expert contacts, and promising practice examples.

We reviewed over 150 documents including other subject-based literature reviews and meta-analyses. Ninety-two of these documents serve as references in the paper. Programming aimed at the integration of global competencies was, in a less comprehensive fashion, also reviewed. The report summarizes these reviews' findings.

¹ Keyword/phrases included: global competencies, global competence, transformative education, skills, 21st century skills, key skills, 21st century learning, education policy, competency-based education, transformation systems, processes in system transformation, curriculum design, instructional design, next-generation learning, higher-order thinking, cross-curricular competencies, mastery-based education, proficiency-based education, and general capabilities.

Part I: Global Competencies and Competency-Based Education

The Evolution of Competency Frameworks to Global Competencies

There is growing recognition that global competencies promote deeper learning by equipping students with the necessary tools to adapt to diverse situations and become lifelong learners (CMEC, 2018). Global competencies as defined by CMEC are an overarching set of attitudes, skills, knowledge, and values that are interdependent, interdisciplinary, leveraged, and applied in a variety of situations both locally and globally. They provide learners with the abilities to meet “the shifting and ongoing demands of life, work, and learning; to be active and responsive in their communities; to understand diverse perspectives; and to act on issues of global significance” (p. 1). In 2016, the ministers of education at the 105th CMEC meeting articulated six broad competencies built on strong foundations of numeracy and literacy. They include:

- **Critical thinking and problem solving**—refer to addressing complex issues and problems by acquiring, processing, analyzing, and interpreting information to make informed judgments and decisions. The capacity to engage in cognitive processes to understand and resolve problems includes the willingness to achieve one’s potential as a constructive and reflective citizen. Learning is deepened when situated in meaningful, real-world, authentic experiences.
- **Innovation, creativity, and entrepreneurship**—involve the ability to turn ideas into action to meet the needs of a community. The capacity to enhance concepts, ideas, or products to contribute new-to-the-world solutions to complex economic, social, and environmental problems involves leadership, taking risks, independent/unconventional thinking, and experimenting with new strategies, techniques, or perspectives through inquiry research. Entrepreneurial mindsets and skills involve a focus on building and scaling an idea sustainably.
- **Learning to learn and to be self-aware and self-directed**—means becoming aware of and demonstrating agency in one’s process of learning, including the development of dispositions that support motivation, perseverance, resilience, and self-regulation. Belief in one’s ability to learn (growth mindset) is crucial, combined with strategies for planning, monitoring, and reflecting on one’s past, present, and future goals, potential actions, strategies, and results. Self-reflection and thinking about thinking (metacognition) promote lifelong learning, adaptive capacity, well-being, and transfer of learning in an ever-changing world.
- **Collaboration**—involves the interplay of the cognitive (including thinking and reasoning), interpersonal, and intrapersonal competencies necessary to participate effectively and ethically in teams. Ever-increasing versatility and depth

of skill are applied across diverse situations, roles, groups, and perspectives to co-construct knowledge, meaning, and content, and learn from and with others in physical and virtual environments.

- **Communication**—involves receiving and expressing meaning (e.g., reading and writing, viewing and creating, listening and speaking) in different contexts and with different audiences and purposes. Effective communication increasingly involves understanding both local and global perspectives, societal and cultural contexts, and adapting and changing using a variety of media appropriately, responsibly, safely, and with regard to one’s digital footprint.
- **Global citizenship and sustainability**—involve reflecting on diverse world views and perspectives and understanding and addressing ecological, social, and economic issues that are crucial to living in a contemporary, connected, interdependent, and sustainable world. They also include the acquisition of knowledge, motivation, dispositions, and skills required for an ethos of engaged citizenship with an appreciation for the diversity of people, perspectives, and the ability to envision and work toward a better and more sustainable future for all (CMEC, 2017, pp. 3–5).

These global competencies share significant alignment with the competency frameworks that the provinces and territories used to define the competency frameworks in their respective education systems. The provinces and territories are at various stages of progression with respect to their own competency frameworks. It is anticipated that the descriptions of the CMEC pan-Canadian global competencies will evolve as the provinces and territories work to integrate them into curricula, pedagogy, and assessment. These global competencies’ evolution and integration will also be shaped by and reflective of Indigenous knowledge, perspective, languages, and histories (CMEC, 2017, p. 2). Appendix A presents the correlation between each current provincial and territorial competency framework and that of CMEC’s six pan-Canada global competencies.

These competencies are “global” in three distinct and important ways. First, and most obviously, the movement toward global competencies is *geopolitically* global. It is, in other words, intended to prepare students for global citizenship (Government of Ontario, 2016), action, and interaction (ACARA, 2013). The most salient local, regional, and national issues of the day are often inseparable from global economic, environmental, social, or political dynamics, so it is necessary to understand the complex world in which these issues arise. Students need to be able to communicate, collaborate, act responsibly, and respond to both local and global challenges and understand the interconnections between them. Competencies-based approaches help to bridge the gap between knowledge and action.

Second, global competencies are meant to be global *curricular principles*. They are meant to infuse into the regular curriculum and serve as organizing concepts, value statements, and summative outcomes. It is not uncommon to see competence referred to, for example, as cross-curricular (Finland, 2009; Magnusson & Frank, 2014).

Third, global competencies are global in the sense that they organize and apply to a person's knowledge, skills, and attitudes in combination and across contexts. The OECD (2005), for example, notes that "the ability to communicate effectively is a competency that may draw on an individual's knowledge of language, practical IT skills and attitudes towards those with whom he or she is communicating" (p. 4). It is this third sense, and the idea of understanding others and their context, that links most strongly with the identified need to prepare students for an uncertain future. When the future appears to be highly volatile, specific skills are at risk of becoming unexpectedly obsolete. What students need, then, are executive abilities and a mindset of lifelong learning that would allow them to select, grow, and use their competencies in new contexts. In other words, global competencies change how the learner learns in school and beyond (Marope, Griffin, & Gallagher, 2018).

History of Competency-based Education

Competency-based education has enjoyed at least three periods of prominence in North America. The first dates back to the mid-1800s when, alongside the development of mass public education, a progressive movement emerged to prepare young people for their particular roles in society (such as agricultural production) (Gervais, 2016). Upper-class children could attend prestigious "academic" institutes, it was thought, but more needed to be done for the "doers" (ibid., p. 99). During this period, one can observe the language regarding applied learning that is once again in vogue today.

The period between 1970 and the early 2000s also saw considerable interest in competency-based education (Forzani, 2014; Glubke & Parisotto, 2015), particularly in vocational programming at both the secondary and postsecondary levels (Nodine, 2016). Competency-based education lent itself well to technical training in which competencies could be readily articulated and assessed. It is likely this use in technical/vocational education that led many to equate "competency" with "skill," even though competencies include skills, knowledge, and attitudes. Many of the more recent iterations of competency-based education in this era focused on competencies to support learners in developing the skills, knowledge, and attitudes to be employable. The DOTS model (Law & Watts, 1977) was likely one of the earliest and provided a framework for career education in schools. The National Career Development Association (NCDA) followed in the 1980s with updated competency guidelines. In the late 1990s, the OECD launched the Definitions and Selection of Key Competencies (DeSeCo) with "the aim of providing a sound conceptual framework to inform the identification of key

competencies, to strengthen international assessments, and to help to define overarching goals for education systems and lifelong learning” (2005, p. 5). In Canada, the Blueprint for Life/Work Designs was introduced in the early 2000s and supported students and adults to develop general, nontechnical competencies in a developmental process to prepare them for learning, work, and career transitions. Related models of the blueprint were developed in Australia, the UK, New Zealand, Saudi Arabia, and Scotland. At the same time in Canada, the employability skills (Conference Board of Canada) and essential skills (Employment and Skills Development Canada) were being developed. Although each took somewhat different approaches and used different terminology, in the end these frameworks had more similarities than core differences when compared to other frameworks.

The current period of resurgence can be linked to *Assessment and Teaching of 21st Century Skills* (AT21CS) (Care, Griffin, & McGaw, 2012), a book that focused the current discourse on competency frameworks. AT21CS summarized a set of 21st-century “skills” (these are actually competencies including skills, knowledge, and dispositions) that have been highlighted in international frameworks under the following four major categories: ways of thinking, ways of working, tools for working, and living in the world. Fullan and Scott (2014) suggested a “six Cs” framework consisting of character, citizenship, communication, critical thinking, collaboration, and creativity. In these last examples, the competencies defined in each case include similar core transferable skills, knowledge, and attitudes to the others but more broadly include a focus on global awareness and citizenship. This additional theme has been advanced further recently by the OECD’s Education 2030 Project and the United Nation’s Sustainable Development Goal 4 on Education (to ensure inclusive and quality education for all and promote lifelong learning). These initiatives looked at the integration of global citizenship as part of the core 21st-century competence that students need. The OECD defines global competence as

a multidimensional capacity. Globally competent individuals can examine local, global and intercultural issues, understand and appreciate different perspectives and world views, interact successfully and respectfully with others, and take responsible action toward sustainability and collective well-being. (2018a, p. 4)

The roots of these competency frameworks, and the more recent work on the development of global competence, are threaded throughout the six global competencies in CMEC’s framework. The framework takes into account emerging and shifting educational, social, economic, labour market, and more recently, geopolitical and environmental demands and realities.

Issues Identified in the Literature Related to Global Competencies Integration

Throughout the literature, a number of issues related to the development and implementation of global competencies were noted such as the challenges of language and understanding, assessment, and labour dynamics and the connection between global competency development and the supports required for postsecondary transitions.

The Challenge of Language

Given the iterative nature of global competency framework development, there is no common language used to label them. In Canada, for example, not one province or territory uses the same competency set as the global competencies that CMEC named. Without a common reference point, the interpretation, understanding, teaching, and assessment of these competencies becomes difficult. Hipkins (2010) demonstrates this point in her description of the process of integrating the OECD key competencies in New Zealand. The New Zealand Curriculum (NZC) attempted to use the same language in every classroom so that students did not get mixed messages, and so that the key competencies became touchstones for learning (Hipkins, 2010). However, the government also allowed schools to personalize the key competency definitions. Follow-up research showed that “important aspects of the OECD version of the key competencies were ‘lost in translation’” (Hipkins, 2010, pp. 3–4).

The literature on career transitions, an area heavily reliant on the identification and articulation of competencies and their concomitant skills, knowledge and dispositions, also refers to the dilemma of common competency language or labelling as problematic. Key concerns include student awareness and articulation of their competencies in the labour market, as well as employer understanding of what these competencies mean in the context of their organizations. In other words, can graduates articulate their competencies in a way that employers can understand? Harrison (2017) suggests that this remains an issue despite recent efforts to improve access to competency-based education at some postsecondary education campuses (mostly in the US), co-curricular transcripts, comprehensive student records, curriculum mapping, and portfolios. The articulation of postsecondary degrees’ learning outcomes in a way that makes sense to employers continues to be of concern. Harrison argues that universities

need to work with each other and with the input from employer groups to the point where they agree on both what these [competencies] are and how they are most effectively assessed. Once this is resolved, the next step will be to embed these [competencies] into the curriculum and include the outcome of the assessment of these [competencies] in a concise student record that quickly and effectively tells employers what the graduating students know and can do. (Ibid., pp. 18–19)

Although this makes theoretical sense, getting all institutions to agree on a common set of learning outcomes with the same labels may prove exceptionally difficult, if not impossible, in practice.

Part of the challenge of developing a common language is that research has shown that the competencies required for living, learning, and working in the 21st century vary with context, and are nuanced and constantly being redefined. The struggle to land on common linguistic ground with respect to language is a result of a rapidly changing and technology-driven labour market and the importance of tailoring competencies to regional labour market and cultural differences.

Bakhshi, Downing, Osborne, and Schneider (2017) found that global competencies change depending on the labour market of the region in which they are required. Labour markets are not structured in the same way across regions and this context matters with respect to those competencies people need to live, learn, and work in these communities. For instance, it may be that entrepreneurship and managing a meaningful work life in the evolving “gig economy” are very significant employability factors in heavily urbanized regions but less so elsewhere. Therefore, education systems may need flexibility to emphasize specific or different competencies based on the context of the school or system resides.

Beyond market considerations, Thomsen (2014) states that most competency frameworks are based on a set of cultural values that may include a focus not shared in other cultures. Thomsen argues that there is a need for investigation and open exploration of competencies through the lens of diversity or through the lens of disadvantaged populations. VanderDussen Toukan (2018) emphasizes the need to critically reflect on the contextual, social, historical, cultural, and linguistic factors reflective of transformative practice in the teaching of global competence. She argues that neither competencies, nor the teaching of competencies, can follow a cookie-cutter-one-size-fits-all approach. This transformation needs to reflect both the local milieu and the decolonization of education. Canada can potentially lead the way in this space. The Inuit Qaujimagatuqangit principles and the Northwest Territories’ key competency frameworks are culturally based and demonstrate how these specific cultural competencies connect with and differ from the wider pan-Canadian global competencies.

Assessment

One of the most significant difficulties faced in implementing competency-based education is assessing student achievement of the competencies. This is accompanied by the challenge of understanding who should assess achievement. Magnusson and Frank (2014) note these difficulties, and that most of the research indicating best practices for assessment of competencies pertains to domain-specific (that is, nonglobal) competencies (see Bennett, 2015). That is why systems often rely on broad, portfolio-based assessment to implement

competency-based mechanisms. Consider, for example, one portion of CMEC's global citizenship and sustainability competency: "an appreciation for the diversity of people, perspectives, and the ability to envision and work toward a better and more sustainable future for all." Although there are a variety of traditional assessments (e.g., multiple-choice quizzes) that could point to the acquisition of this competency, a meaningful assessment would almost certainly need to be behavioural, contextual, and individualized. Further, the student needs to be actively involved in the assessment process. The Programme for International Student Assessment (PISA) assessment of global competence contributes a development in this direction, although clear challenges and limitations remain. Accounting for these limitations and challenges, the PISA 2018 global competence assessment has two components: (1) a cognitive test exclusively focused on the construct of "global understanding," defined as the combination of background knowledge and cognitive skills required to solve problems related to global and intercultural issues; and (2) a set of questionnaire items collecting self-reported information on students' awareness of global issues and cultures, skills (both cognitive and social), and attitudes, as well as information from schools and teachers on activities to promote global competence (OECD, 2018a, p. 21). The challenges of assessing complex competencies such as global competencies could be the topic of another literature review. Suffice it to say that assessing global competencies requires a mindset change for all involved as well as new educator competencies in assessment. Successful competency assessments, however difficult, hold the promise of better serving those who struggle on standardized tests and measuring actual achievement (Allen, 2000).

Global Competencies and Labour Market Dynamics

There is an overwhelming amount of literature, media reports, policy frameworks, and interest across multiple stakeholder groups focused on the importance of competencies and competency-based education. One of the main reasons for this renewed focus is the drive to ensure that students have competencies suited to "dynamic and unpredictable models of economic and social development" (Government of Ontario, 2016, p. 6) in a rapidly changing, uncertain, technology-driven, and globally interconnected and knowledge-based labour market (Bolstad & Gilbert, 2012).

The literature clearly demonstrates the value of continued investment in competency development. Much of this work has been used to continue the process of articulating and rearticulating the competencies needed for youth to live, learn, work, and thrive in the 21st century. This research broadens what a competency is from the inclusion of required transferable skills, knowledge, and abilities to frameworks that include attitudes and values (OECD, 2018b). Bakhshi and colleagues (2017) found, however, that after almost two decades of development that brought with it an ever-widening definition of competencies and "considerable thinking and advocacy ... focussed on embedding so-called 21st century skills into

education systems” (p. 22) only a “handful” of academic studies have focused on whether the 21st-century competencies are indeed those needed to help students thrive following graduation and for life.

Using a mixed-method approach combining information on required competencies across a range of occupations obtained from occupational standards databases in the US and UK with industry expert knowledge on future skill requirements, Bakhshi and colleagues (2017), found similar competencies to those outlined in the 21st Century Skills Framework (P21, n.d.). Their findings also showed geographical differences. In the US, they found that “there is a particularly strong emphasis on interpersonal competencies consistent with the literature on the increasing importance of social skills in the labour market” (Bakhshi et al., 2017, p. 89). In the UK, they found a similar confirmation of the need for 21st-century skills. By contrast, however, in the UK there was a stronger emphasis on “cognitive competencies and learning strategies” (p. 89). This finding indicates the importance of environment and the labour market to the interpretation and application of these competencies.

Connection to Career Management Skills/Competencies

RBC and the Canadian Career Development Foundation (CCDF) (2016) collaborated on a research project that analyzed all the applications to RBC’s internship program. Applicants to this program were required to list work and volunteer experiences and the competencies that they developed from those experiences. They were asked to respond to an essay question about their perspectives on what can be done to improve school-to-work transitions in Canada. A key finding from these data was that although applicants recognized the importance of transferable skills in their essays, they were less adept at articulating their competencies in the experience portion of the application. With the focus on competencies and competency-based hiring, the ability to articulate one’s competencies has become an essential skill.

For this literature review, the authors reviewed several recent competency frameworks and found that the articulation of the skills, knowledge, and attitudes needed to navigate transitions between learning and work, and between work and learning (career management skills) were either missing or merely implied. Neary, Dodd, and Hooley define “career management skills (CMS) [as the] competencies which help individuals to identify their existing skills, develop career learning goals and take action to enhance their careers” (2015, p. 5). CMEC’s Reference Framework for Successful Student Transitions (2017b) speaks to the importance of wider global competencies matching with career management skills to ensure that students not only have global competencies but are also aware of, and can promote, those competencies in the management of their transitions after public education.

Part II: System Transformation for the Integration of Global Competencies

The change effort required for global competency integration is examined in this section. We begin by verifying the assumption that incorporating global competencies across curricula is not simply an “add-on” involving minor change. We then look at general system change and, more specifically, education system change to set the stage for a review of global competency integration efforts in a number of provinces and territories in Canada as well as in other countries.

The intention of the following literature review is to identify the important elements of a transition framework needed to guide provinces and territories through the process of global competency integration. Finding the correct or proven way to change an educational system is neither possible nor attempted here. Each province and territory will have favoured models of change and transformation. The following review therefore needs to lead to a conceptual scheme in which provincial and territorial models’ processes can be meaningfully mapped, compared, supported, and—for provinces or territories without a preferred model—selected and possibly adapted.

What Kind of Change Is Needed?

Meaningfully incorporating global competencies into curricula involves more than simply adding on more content or replacing old content. As the following sections show, every region that has integrated or is on its way to integrating global competencies successfully has experienced the need to make changes to every part of its system. The changes include, but are not restricted to, communications with parents, students, and other stakeholders; classroom teacher learning (and unlearning); instructional design; assessment; the relationship between classroom teachers and policy; leadership; and system evaluation.

“Bolting on” global competencies to traditional systems simply does not work. The very nature of the global competencies demands learning that focuses more on process—thinking, problem-solving, innovating, creating, building/scaling, learning, self-reflecting, collaborating, and engaging—than on content. Almost any content can be fodder for these competencies given an educator-learner-system relationship in which these processes are understood.

Moving to competency-based education from the traditional time-based education also requires significant system change in which everything from transitioning between “grades” to graduation credentials is susceptible to qualitative change. Independent of the inclusion of global competencies, many interconnected elements of the education system need to change in the adoption of a competency-based approach.

Change of the kind currently being considered by education systems will need to be intentional and designed, and it will be complex.² The educational literature tends to refer to this kind of change as transformational rather than transitional or incremental. Organizational change researchers would further differentiate the orders of change as sub-system or first-order change, organization or second-order change, and sector or third-order change (compare Bartunek & Moch, 1987; Kuipers, et al., 2014). Kuipers et al. summarize these orders of change as follows:

- 1st: Sub-system ... adaptation of systems or structures, occurs within part of an organization or sub-system, is incremental;
- 2nd: Organization ... transformational, movement in core organizational paradigms, organization-wide, whole systems change;
- 3rd: Sector ... Identity change, cross-organizational change, change spans specific organizational boundaries, affects many organizations/sector-wide change. (2014, p. 3)

It is clear that, at minimum, the integration of global competencies into educational systems requires second-order change. Given the interrelationships of public education, postsecondary education, and the world of work, an argument could readily be made that the scope of change discussed here is also of the third order. For the purpose of this review, the focus will be change efforts broader than first-order change. What follows is a brief review of conceptions of system change for public organizations before a more specific examination of educational transformation efforts.

Change Efforts—Setting the Context

General System Change in the Public Sphere

Intentional organizational or system change has been tackled in almost every area and structure of human endeavour—national governments (e.g., from democracy to communism), multinational corporations (e.g., Fujifilm’s transition from film to digital imaging), and large service systems (e.g., the UK’s National Health Service). Rapid technological, social, environmental, and economic changes are prompting private, not-for-profit, and public organizations to consider significant changes in service approaches, products, and organizational structure, often simultaneously. There is no shortage of consultants willing to tell organizations the best way forward, and it seems there are almost as many change-management models as there are consultants (e.g., in an analysis of 133 articles on change in public organizations, Kuipers et al. 2014 found 20 different theoretical frames for explaining the change). For the purposes of this paper, it seems prudent to briefly review organizational change approaches, particularly in public organizations, to ascertain whether a particular model

² Some researchers argue that this type of change should be referred to as “reform” because it is deliberate and intentional (e.g., Pollitt & Bouckaert, 2004).

or approach is known to be more effective than others as well as to glean insights that might be useful for educational change efforts.

In brief, there is scant evidence supporting a specific approach to system change (e.g., ten Have, et al., 2017). Some models have achieved widespread popularity (e.g., Kurt Lewin's change model, John Kotter's change model, lean change management, McKinsey's "7S" model, Prosci Change Management) but these models have not been evaluated in a replicable way (because they are proprietary) or they have been evaluated but the results have not been definitive. Frameworks from a more academic origin applied to change in the public sphere do not fare much better. "Authors rarely explicitly address the success of a change ... [and] the success of the change remains unclear or ambiguous in most studies ... Few studies explicitly refer to the organizational change as being successful (Sharma and Hoque, 2002; Chen et al., 2006; Chustz and Larson 2006). Coincidentally, these are also the studies that rely on the most objective, output-based evaluations of the effects of change" (cited in Kuipers et al., 2014, p. 14).

The lack of substantive evidence of success does not necessarily mean there are no effective change models. Second and third-order change is complex, involving many stakeholders in a variety of settings. Operationalizing change models is difficult because each construct (e.g., leadership) within the models is associated with its own world of theories and practices. Implementing change in ways consistent with a model at the appropriate level of intensity throughout the change process is challenging, too, particularly because the leaders of change are also the subjects of change (e.g., a supervisor who is resistant to change one day is the team's change agent the next). It may be that conclusive evidence is never found for a particular change model. However, the work thus far has at least shown that certain areas need to be addressed in any large change:

- context (the environment of change, such as culture or whether the change is public-sector or private-sector);
- content (the order of change—for example, 1st, 2nd, 3rd—and its components);
- process (how change is approached, whether top down, de-centralized, or incremental);
- leadership (how change is led—for example, political leadership, shared leadership); and
- outcomes (what change will produce; how things will be different).

Although no formal conclusions can be drawn from organizational change research, its findings can be useful by:

- cautioning against expecting to find approaches to educational system change (the next section of this review) that are clearly superior to others;
- encouraging change implementers to evaluate throughout a change process, gathering substantive evidence that can inform further change;
- creating freedom for each educational system to apply change approaches relevant to its particular context;
- setting some limits for each province and territory as they approach change by providing a broad set of factors that need to be considered when implementing change (i.e., context, content, process, outcomes and leadership); and
- reminding us that significant change is difficult, messy, and unlikely to go as planned (Kuipers, et al., 2014).

Global Competencies, Competency-Based Education, and Education System Change

A number of regions have gone or are going through the process of integrating global competencies into curricula and/or adopting a competency-based approach to education in a substantive way (i.e., second- or third-order change). This section briefly identifies a few noteworthy international efforts, presented alphabetically, and Canadian efforts, presented from the west to east to north coasts.

International Examples

Finland

Although Finland would not characterize its system as competency based, its system is nevertheless a “shining light in Europe for proponents of competency-based education” (Bristow & Patrick, 2013, p.14). Finland’s educational system has undergone tremendous reform over the past 40 years, focusing on personalized learning, equity, and the capacity of educators to support this learning (e.g., teaching requires a master’s degree).

United States (New England)

Sturgis (2016) describes the efforts of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont toward converting to competency-based education. Connecticut’s transition is in process, with superintendents leading the charge and communities pushing for better preparation for both college and work. Maine, which started the transition in 2007, introduced legislation in 2012 that called for a proficiency-based diploma and a supporting system of standards. As a state, Massachusetts has not introduced competency-based education, but several schools are building capacity in this direction. The Carnegie unit (a time-based credit) was replaced in New Hampshire in 2005 with a competency-based credit. School structures and assessments were made subject to minimum standards in 2013. The first state diploma that was proficiency-based was initiated in Rhode Island in 2003. Diplomas cannot be

received without at least one performance-based assessment. Finally, Vermont’s board of education introduced personalized learning and a proficiency-based diploma in 2013.

New Zealand

In a significant departure from traditional detailed curriculum documents, New Zealand’s ministry of education released a single document in 2007 providing a framework for all curricula from years 1 to 13. The work of developing detailed curricula was a local/school matter from that point on. New Zealand’s schools are the most autonomous in the OECD (Bristow & Patrick, 2014). Five basic competencies—managing self; relating to others; participating and contributing; thinking; and using language, symbols, and texts—were introduced at that time. Weaving “international capabilities” (New Zealand Education’s label for OECD global competence) into the key competencies was underway by 2013 (New Zealand Ministry of Education, 2014).

Scotland

Scotland focused on four cross-curricular “capacities” or overarching learner outcomes (successful learners, confident individuals, responsible citizens, and effective contributors) in three subject areas (literacy, numeracy, and health and well-being). These are seen to be the responsibility of all staff when it developed its Curriculum for Excellence (Scottish Executive, 2006; Education Scotland, 2018). Formulated in the early 2000s, the curriculum was fully launched in 2010 and remains in the process of being fully implemented. Although the Curriculum for Excellence does not focus on global competencies, nor does it take a competency-based approach, its cross-curricular approach to several areas, learner-centred pedagogy, emphasis on formative assessment, and acknowledgement of teacher discretion make it a relevant example for this review.

Canadian Examples

British Columbia

In 2011, British Columbia adopted core competencies it called communication, thinking (including creative thinking and critical thinking), and personal and social competence (including positive personal and cultural identity, social awareness and responsibility, personal awareness and responsibility) (Walt, Toutant, & Allen, 2017). These are defined as the “intellectual, personal, and social and emotional proficiencies that all students need to develop in order to engage in deep learning and life-long learning” (British Columbia Education, 2018, p. 1). Each of the core competencies is accompanied by profiles of student progress along with illustrations of what will show evidence of competence development. Student self-reflection is core to the assessment process: educators support students in self-assessment, encouraging them to take ownership of their own competency development.

Referring to its approach as “concept-based” and “competency-driven,” BC Education aims for deep understanding and the ability to perform. Traditional subject areas are linked to “big ideas,” core competencies, curricular competencies, and content.

Alberta

Alberta’s current curriculum promotes development of the following : critical thinking, problem solving, communication, managing information, collaboration, creativity and innovation, cultural and global citizenship, and personal growth and well-being. Future curricula will continue to promote these competencies.

Within the current curriculum, educators can access a number of resources that assist them in identifying aspects of a competency that are evident within learning outcomes, learning activities, or assessments. Competency descriptions, indicators, and examples describe how competencies may be expressed within the context of Alberta’s current Kindergarten-to-Grade-12 programs of study. Clear descriptions provide an overview of each competency’s key features. They holistically describe attitudes, skills, and knowledge associated with each competency. Competency indicators identify specific aspects of a competency that are transferable across subject areas or contexts.

Alberta Education is currently developing a Kindergarten-to-Grade-12 provincial curriculum in six subject areas in both English and French. In this future curriculum, educators will be able to access similar supports and resources but through a new interactive tool designed to help teachers plan and implement learning opportunities. Alberta Education introduced a new draft Kindergarten-to-Grade-4 provincial curriculum that incorporates the acquisition of competencies into learning outcomes, facilitated by the digital platform called new LearnAlberta (new.learnalberta.ca). This platform supports continuous improvement of curriculum and allows teachers to interact with the curriculum in ways they have never been able to before. Within new LearnAlberta, information regarding competencies, literacy, and numeracy is easier to access, connect to learning outcomes, and use in planning for student learning experiences.

Manitoba

Manitoba currently incorporates literacy and communication, problem solving, human relations, and technology and Indigenous perspectives into curricula. Learner outcomes relevant to the CMEC global competencies are developed across a wide range of curricular areas, such as math, science, social studies, physical education, and health. In addition, education for sustainable development is integrated throughout the K–12 curriculum, including revisions in technical vocational education, starting from broad cross-curricular learning

outcomes and translated into subject-specific learning outcomes. The province also incorporates the CMEC global competencies in an optional Grade 12 course called Citizenship and Sustainability. Manitoba Education and Training has begun research on comparing the content and language of various global competency models. Manitoba may just be at the beginning stages of incorporating global competencies, but it has recently experienced successful system change in Education for Sustainable Development (ESD). Arguably, ESD is “in essence, and by definition, education for the 21st century” (Bell, n.d., p. 2), and therefore may be very aligned with global competency efforts. A Domain Framework for Whole System Approach to Education for Sustainable Development helped guide schools and school divisions toward taking a whole-system approach to ESD. With respect to global competencies, Manitoba currently has many pockets of activity in which schools and districts are testing a variety of global-competency and 21st-century learning approaches (e.g., CMEC’s competencies, Michael Fullan’s 6C competencies, sustainable living, and social justice) (M. MacCauley, personal communication, March 19, 2018). In addition, and in relation to broader system change, Manitoba has introduced the *K–12 Framework for Continuous Improvement* which emphasizes coherence, capacity building, data-informed decision making, and shared responsibility for student achievement.³

Saskatchewan

Renewed curricula in Saskatchewan address the six global competencies outlined in the CMEC Pan-Canadian Systems-Level Framework on Global Competencies through the Broad Areas of Learning and the Cross-curricular Competencies.

The broad areas of learning encompass the desired attributes for students and describe the knowledge that they will achieve throughout their K to 12 schooling. These attributes include:

- a sense of self, community, and place;
- the capacity to be lifelong learners; and
- the capacity to be engaged citizens.

The cross-curricular competencies are four interrelated areas involving understanding, values, skills, and processes that are considered important for learning across all areas of study. These competencies are intended to be addressed in each area of study at each grade and include the development of:

thinking;

identity and interdependence;

literacies; and

³ K–12 framework available at <http://www.edu.gov.mb.ca/k12/ssdp/framework.html>.

social responsibility.

Renewed curricula focus on students using inquiry to construct their understanding of subject-area concepts. Frameworks that help to support the development of financial literacy, sustainable development, and treaty education are also reflected in Saskatchewan's renewed curricula.

A curriculum advisory committee is being established and will consider areas of priority for curriculum development and renewal, schedules for development, and larger foundational items for curricula and programming for Grades 1 to 12, including graduation requirements. Global competencies may be considered as part of their work.

Ontario

In 2016, Ontario published a document, entitled *Towards Defining 21st Century Competencies for Ontario—Foundation Document for Discussion*. The document aimed to “provide a focus for discussions among ministry and external education, policy, and research experts about how best to shape provincial policy to help students develop the 21st century competencies they need to succeed” (Government of Ontario, 2016, p. 3). Since the publication of this document, the province has identified transferable skills that support the pan-Canadian competencies defined by CMEC.

Quebec

At the beginning of the 21st century, Quebec undertook a major reform of its educational system with a focus on the development of global competencies as part of the Quebec Education Program (QEP). The QEP makes reference to nine cross-curricular competencies that are developed across different subject areas. These competencies are grouped in four categories:

- *intellectual competencies*: to use information, to solve problems, to exercise critical judgement, and to use creativity;
- *methodological competencies*: to have effective work methods and to use information and communication technology (ICT);
- *personal and social competencies*: to construct one's identity and to cooperate with others; and
- *communication-related competency*: to communicate appropriately (Gouvernement du Québec, 2001).

Quebec has a comprehensive policy to support the integration of these competencies across curricula. Its Education Act mandates the inclusion of cross-curricular competencies in student report cards (differentiated by level).

In 2017, Quebec unveiled a new education policy called Policy on Education Success: A Love of Learning, A Chance to Succeed, that focuses on the education process from early childhood to adulthood and aspects of the learning environment that help learners succeed. A key part of this policy's vision is to implement several actions (orientations) to ensure that education environments are inclusive, focused on success for all, and work with communities to support students to be civic minded, creative, competent, responsible, open to diversity, and fully engaged in social, cultural, and economic life in Quebec (Gouvernement du Québec, 2017).

Newfoundland and Labrador (NL)

Newfoundland and Labrador is at the beginning stage of their system transformation. In July 2017, the Premier's Taskforce on Improving Education Outcomes released a series of recommendations to guide the development of a provincial education action plan (Kirby, 2017). Many of the global competencies are mentioned throughout the recommendations. For example, one key recommendation seeks to revise the social studies and civics curriculum to place greater emphasis on the global competency of global citizenship and sustainability (Kirby, 2017).

Northwest Territories (NT)

A 10-year Educational Renewal and Innovation Framework, Directions for Change (2013), is in the process of being developed, piloted, and, implemented in phases. This comprehensive framework includes a wide range of initiatives to renew education in Northwest Territories. As outlined in this framework, the key outcome for education there is that each student is supported to become a *capable person*. The term *capable person*, as referenced in *Dene Kede—Education from a Dene Perspective* (1993), refers to the competencies people need to help them have “integrity in their relationships with themselves, the land, other people and the spiritual world” (p. xiv). Key to this concept is one's relationship to the land (i.e., the environment and its sustainability) and one's relationship to one's self and each other (i.e., responsible citizenship).

To meet the goal of becoming a capable person, Northwest Territories has outlined five key competencies—interpret and express meaning, nurture who you are and become who you want to be, contribute to live well together in this interconnected world, negotiate change and challenge, and engage with ideas and respond to their complexities—that support students in meeting this overarching objective. The five key competencies align with the renewal and innovation framework, along with the “foundational statements” (e.g., a positive sense of identity is actively supported) and the government's commitments to education. The changes proposed in the framework are significant and wide reaching, addressing all aspects of the educational system as well as its relationships to other systems.

Nunavut

Nunavut began its education reform process when it became a territory in 1999. Similar to Northwest Territories, Nunavut's education system has captured the cultural history and values in its competencies by consulting with Elders and other community members. The consultations aligned with a competency approach in that Elders advocated for “doing” over only “knowing” — “real learning has to demonstrate real capacity.” Nunavut's education framework refers to the overall goal of “creating an able human being.” Its education system and curriculum is based on eight Inuit Qaujimaqatunqangit (IQ) principles. Using these Inuit concepts, Nunavut Education has identified competencies and mapped these to other competency sets (e.g., Qanuqtarunnarniq captures Alberta's critical thinking, problem solving, decision making, and creativity and innovation competencies). The competencies are woven into Nunavut's four K–12 curriculum strands. Experiential learning is emphasized throughout, and assessment includes the demonstration of the competencies in practicum settings.

The Domains of Change

Each reviewed region's change process is intentional and planned. Each had aspirations regarding more effective educational approaches to reach more appropriate outcomes suitable for a changing world. The regions used various change models and approaches (e.g., Fullan, 2010; Intel Education, 2017; Microsoft, 2018; Mourshed, Chijioko, & Barber, 2010), some more formalized than others, but all explicitly dealt with the several areas of managing change (e.g., leadership, policy, curriculum, outcomes, capacity building, etc.). Given that the purpose of this review is to inform the development of a framework that will work for all provinces and territories regardless of their specific approach to system change, labels are used here that do not belong to any specific change theory, model, or approach. However, the domains that follow account for the variety of focus areas included in specific change models. No domain of interest is isolated; all are interconnected.

Aspiring to Change: Philosophy, Intentions, and Outcomes

Most of the reviewed regions moving to competency-based education or global-competency inclusion did not effect change because of a crisis.⁴ Few were jumping off “burning platforms,” changing because they had to. The reforms were aspirational, future-oriented, and rooted in new understandings of education and society. Jim Collins's (2001) dictum that “good is the enemy of great” is not supported by the behaviour of the regions reviewed for this paper.

⁴ Mourshed, Chijioko, & Barber (2010), authors of the McKinsey and Company report on school improvement, point out that many of the systems they reviewed had their changes triggered by a crisis, critical report, or a new leader. Their report, however, reviews a very wide spectrum of systems ranging from quite poor to excellent. In Canada, most provinces and territories were performing well prior to the decision to pursue global competencies though there were exceptions to this pattern where the pursuit of renewal was motivated by significant failure.

All change approaches benefit from a coherent philosophy, but it is likely that aspirational ones demand a set of values and rationales that will pull people toward a preferred future. Change can be difficult, and stakeholders such as students, educators, parents, and employers need compelling reasons to make the effort. These reasons can come in many forms, such as Fullan's argument (and accompanying evidence) that "closing the gap [between high and low achievers] has profound multiple benefits for both individuals and for society as a whole. Large gaps spell doom. The facts are impressive and scary" (2010, p. 15). Of three components of Quebec Education's "mission of schools," one is "to socialize, to prepare students to live together in harmony" (2017, p. 25), a statement that makes clear that schooling goes beyond traditional subject matter. Alberta Education's principles encourage "diverse ways of experiencing and understanding the world" and "diverse ways of developing and demonstrating learning" (2016, p. 13), both indicating a broadening of educational goals and approaches. A final example: Northwest Territories Education, Culture and Employment's (2018) vision of education includes strong statements on culture-based education and connecting education to "place," ideas that will resonate with its citizens.

Although having a philosophy and vision may seem like the first step, in reality these emerge from other domains of change. Rationales emerge from citizen input, educational research, changing contexts, ongoing evaluation, advancements in pedagogy, and other domains. The Northwest Territories example emerged from input from and philosophy of Indigenous Elders, findings from educational research, and a political context in which Indigenous government partnerships are being pursued (ibid., 2018). This interplay of domains in shaping vision, direction, and outcomes is evident in all change efforts. Fullan's (2010) "small number of ambitious goals" (p. 21) emerged from evidence, context, and community input, as did British Columbia's emphasis on student-centred learning, Finland's aspirations for highly educated teachers, New Zealand's trust in local decision making, and Scotland's focus on effective contributors.

Situating Change: Understanding Context and Starting Points

Understanding the cultural, political, professional, demographic, and social environment in which change is occurring helps create and communicate the vision/philosophy, adjust the pace of change, and assess and reassess the starting point of change (a continuously moving target) (e.g., Batras, Duff & Smith, 2016). Although Mourshed, Chijioke, and Barber claim that context was not a key factor in the success of the dozens of "improving" systems they studied, their report also notes that "school systems that sustain improvement over the longer term have learned both how to navigate the challenges of their context and to use their context to their advantage" (Mourshed, Chijioke, & Barber, 2010, p. 20). Kuipers et al. (2014) point out that any change in the public sphere needs to account for context, especially when "importing" change processes from another region with different cultural norms. They cite, for example, the

differences in change efforts in cultures more accustomed to decisions being made by consensus (e.g., the Netherlands) rather than by majority (e.g., the United States) on issues affecting the public.

Alberta's and British Columbia's emphasis on innovation in their curricular changes take context into consideration. Both provinces are relatively wealthy in large part thanks to resource-based economies, and both provinces' citizenry recognize that continued wealth will require changes in how natural resources can be used to generate wealth in the future. Quebec's use of the phrase "educational childcare system" and its relationship to the province's family policy (2017, p. 11) recognizes the social context of significant provincial support for families, a context in which Québécois likely take great pride. Michael Fullan, a leader in Ontario's change processes and noted thinker in the field, describes the core of the "all systems go" strategy he expounds as the effort to

mobilize and engage a large number of people who are individually and collectively committed and effective at getting results relative to core outcomes that society values ... There is no way of achieving whole-system reform if the vast majority of people are not working on it *together*. (2010, p. 21)

The values Fullan refers to are part of the context, and the ability to get large numbers of people to work on something together is possible only if this work aligns with their context.

There are many contextual issues to consider at provincial/territorial intersystem (e.g., the relationships between the K–12 system and the postsecondary system), and intra-system (e.g., the relationship between the government, school boards, and teacher associations) levels. Mourshed, Chijioke, and Barber (2010) note that processes used to create change must change themselves to keep improving. Systems transforming from poor to good, for example, need to focus on very different issues (e.g., basic teaching proficiency) in different ways than do systems transforming from great to excellent (e.g., educator autonomy).

Understanding the starting point for change is understanding context, and it is no less important at very granular levels than it is at system-wide levels. Teachers who are and/or feel unsupported will find ways to undermine change efforts. Hipkins (2010) describes a very specific example in New Zealand where teachers, doing their best and having the best of intentions, made a task and its instructions more straightforward for students. They did not realize that slightly altering the instructions removed the task's ability to help learners develop a "key competence" of New Zealand's curriculum. This effect was not related to malice or resistance to change; the teachers' historical context created a situation in which they needed to "unlearn" some old ways before they could effectively learn new methods.

Finally, a part of understanding context is recognizing the strengths within a system so that they can be retained in the new paradigm. A region with high levels of current expertise and dedication of its educators, for example, will be well-served to build on this capacity. Proceeding as if the expertise does not exist would not only be wasteful but would also set back change efforts by creating resentment and resistance among educators and their allies. C21 Canada's description of system-driver shifts (i.e., shifting curriculum, pedagogies, learning environments, assessment, governance, and citizen and stakeholder engagement) (Milton, 2015) highlights the importance of involvement and engagement of all players in the system within all of the system drivers. Whether the action is to "encourage interdisciplinary work," "recognize the value of traditional instructional approaches when they are done well," "involve parents, students, and teachers in determining guidelines for safe accessibility to the Internet," "co-develop alternative rubrics," "engage school board members and key stakeholders in policy design," or "capture and share the excitement and energy occurring in successful schools" (Milton, 2015, p. 17), the assumption is that strength, capacity, and energy form the starting point.

Shaping Change: Leadership

All of the reviewed models of change included leadership as a pivotal component of the change process. For example, Fullan's (2010) model includes leadership not only at the top, which in the Ontario example began with the premier, but his research on the characteristics of effective school boards indicates leadership being developed at district, principal, and teacher levels. Microsoft Education's (2018) ten components of school transformation fall into only two categories: leadership and policy, and 21st-century pedagogy. Intel Education's Transformation Model has "leadership" encompassing all other components: policy, professional learning, curriculum and assessment, information communications technology, sustainable resourcing, and research and evaluation. From a systems theory perspective, Westley (2013) describes both social entrepreneurs and system entrepreneurs as leaders of change, particularly innovation, without necessarily having formal leadership roles. The OECD's (2017) framework for managing change in the public sector uses a different label, "stewarding," for the function of leading. The OECD also refers to this as "agile leadership," an approach that is being adopted by New Brunswick Education (anglophone) (compare Breakspear, 2017). Regardless of how they are labelled, the OECD sees this function to be essential in any change process.

Regions that have undergone reform or are currently in the change process also support the need for leadership, but their experiences show it can take many forms. Phillips and Schneider's (2016) review of Idaho, Utah, and Florida's shifts to competency-based education shows that leadership is crucial but can start at various places. In Idaho's case, the leadership started at the top (state legislature) and spread from there. Utah's transformation began with a strong advocate (a single senator), whereas Florida's shift emerged from a context in which local

innovation created “bottom-up” change. Phillips and Schneider point out that leadership, change processes, and the elements of change are unique to each region: “Mirroring the flexibility in a competency-based system, in which students carve their own paths and pace, these stories that follow highlight the ways in which each state’s unique needs shaped its individual path and pace toward competency-based education” (ibid., p. 4). As the direction of change stabilizes (evident by legislative change, in many cases), then a clearer pattern of leadership distribution follows. Mourshed, Chijioke, and Barber, for example, found that leadership gradually devolved toward the “front lines” of education: “Across our sample systems, the ‘center’ increasingly decentralised pedagogical rights as performance increased” (2010, p. 46).

In Canada, the leadership dynamic appears to be iterative but similar across provinces and territories. Although this is not documented clearly in the literature, reform ideas related to the need for and direction of change emerge from thinkers and policy-makers in the province or territory’s ministry (who have been influenced by academics, school superintendents, principals, teachers’ associations, and others) who either pressure the government for change or find opportune moments to suggest change. At the political level, ministers and other elected officials will declare a need for change, but this declaration has already been informed by the work of ministry officials. By the time the public sees or hears about change, especially system change, the government, and particularly the minister responsible for education, is the one calling for change as well as for consultations regarding change. At this point, leadership flows from the political level to the ministry level to leaders within stakeholder groups (e.g., school districts, superintendent associations, teacher’s associations), who look for leadership in their constituencies (e.g., school principals). In short, leadership of reform may look from the outside as if it flows from the top down but it is far more back and forth than appearances suggest. Also, the practice of leadership has multiple hand-off points in which communications can go awry.

What appears to be effective in the Canadian context is when political leadership and ministry leadership are sufficiently strong and sustained to show that returning to old ways is not an option (e.g., by changing the Education Act, as in Quebec). This level of leadership makes it far easier for other leaders within the system to create clarity regarding direction.

Owning Change: Governance, Accountability, and Engagement

Governance issues closely align with leadership concerns. Milton uses the Institute on Governance’s definition of governance: “Governance determines who has power, who makes decisions, how other players make their voices heard, and how accounts are rendered” (2015, p. 14). For the most part, the reviewed models and regions tend to use the term *governance* when describing the formal responsibilities of leaders to make decisions. As leadership

distributes through a system, governance follows in many cases. A school principal, for example, is both a leader for change and the formal local decision maker in the school. In this review, *governance* refers to formal systems and structures that create or endorse decision-making authority. These formal systems can build decentralization of decision making, but the ultimate authority remains in place. For example, Quebec Education's governance principles include "subsidiarity," or the decentralization of processes and decision making. This principle allows a traditionally centralized responsibility to be distributed while leaving the ultimate authority centralized.

Accountability and *engagement* are two of the many multifaceted, multiple-meaning terms in change literature (e.g., leadership, capacity, context). In this review, *governance* is used to refer to decision-making authority and the responsibilities that accompany it. *Accountability* here refers to the outcomes associated with attempting to live up to governance decisions and the consequences of achieving or not achieving the desired outcomes. For example, a school principal may follow a governance decision related to the management of attendance. The principal is not responsible for the decision but is accountable for the way in which the decision is executed and the results of execution. Accountability need not be associated with punishment or rewards in this usage; accountability is tied to improvement. Vermont, for example, developed an accountability system for continuous improvement in which *all* schools have been identified as needing improvement. The intention was to destigmatize the label of improvement and send a message that improvement is continuous (Patrick et al., 2018). In Patrick and colleagues' approach, accountability needs to move away from "rank and punish" systems based on single variables (e.g., grades) toward empowering stakeholders to get the information and support they need to better help students succeed. Their recommendation is to follow Elmore's (2002) principle of reciprocity of accountability for capacity in which performance and capacity development go hand in hand. This sentiment is aligned with Fullan's use of "intelligent accountability" as a "set of policies and practices that actually increases individual, and especially collective, capacity" (2010, p. 19).

The reviewed change models and example regions do not take a consistent view of accountability, and many are not clear about the meaning of "accountability" in their systems. However, virtually all refer to the idea as important. For the most part, systems make reference to planning, monitoring/supervision, and reporting of programs (e.g., NT Education, Culture & Employment, n.d.; Quebec, 2017) when referring to accountability. In essence, their accountability systems identify who "owns" the change both legally and morally.

"Engagement" fits in this domain because it addresses the conceptual/emotional side of ownership. Just as competencies possess a dispositional or willingness element (Hipkins, 2010), effective change processes require particular attitudes and motivation. Most change models

refer to engagement or buy-in as necessary for effective change. C21 Canada describes the need to shift citizen and stakeholder engagement—for example, “use social media to engage the broader public,” “support mutually beneficial partnerships” (Milton, 2015, p. 17). Fullan’s “all systems go” model sees buy-in as an essential component of intelligent accountability, and refers to “McGuinty’s Lesson Three—you won’t get results unless teachers are onside” (2010, p. 66). Intel Education’s (2018) model embeds educator engagement within “professional development,” assuming that educators are already engaged and motivated but need opportunities to learn.

To obtain engagement from stakeholders such as students, teachers, principals, parents, or employers, two main approaches emerge in the literature: (a) communicate/educate regarding the need for change and (b) gather meaningful input from those to be engaged (e.g., Intel Education, 2018; Milton, 2015; Phillips & Schneider, 2016; Sturgis, 2016). These approaches are often used in tandem (e.g., combining presentations with input sessions), and they range in sophistication. The regions’ reports reviewed here devoted little space to ineffective engagement efforts. It is difficult to tell what works in the absence of knowing what does not work. Broader change literature can become quite nuanced about when, how, and with whom to engage. For example, Battilana and Casciaro (2013) studied the relationships between the types of influencers chosen to communicate with and the scope of change in health care, finding that some types are far better at engaging individuals in incremental change whereas other types are more effective when it comes to engaging individuals in more transformational change.

The Canadian provinces and territories reviewed here have combined public and specific audience forums (e.g., with parents or employers) to inform stakeholders and gather feedback. Some have gone to great lengths to engage particular groups to ensure their voices are heard. Nunavut Education (2007), for example, included in-depth consultations with Inuit Elders and community members and included their language and concepts throughout the curriculum. Similarly, Northwest Territories Education, Culture and Employment (2013) consulted extensively with Indigenous community members, leaders, Elders, and students, with their input being very visible in curriculum philosophy, content, and language. Manitoba Education and Training’s engagement approach is at the early stages, building upon earlier and ongoing change efforts (e.g., a whole-system approach to education for sustainable development, K–12 Framework for Continuous Improvement, and Learning for Life: Charting the Future through Literacy and Numeracy—Manitoba’s Literacy and Numeracy Strategy). Initiatives such as these enable Manitoba Education and Training to iteratively gather stakeholder input and test ideas. Engagement in these cases tends to be built from the ground up, with Manitoba Education facilitating the process.

Educators, of course, are key players and their engagement and support are crucial for system change. The provinces or territories furthest along with integrating global competencies, British Columbia, Alberta, Ontario, and Quebec, all have processes in place by which educators are communicated with and their input is sought in general terms. But educators are also active contributors to curriculum and assessment design and testing. What is not clear from the literature are areas where obtaining buy-in is difficult or experiences setbacks.

Making Change: Policy, Curriculum, Instruction, and Assessment

The “making change” domain name refers to the actual changes that occur in the educational system. Four key areas common to all educational systems fit in this domain: policy, curriculum, instruction, and assessment. Each is briefly reviewed from the perspective of system change.

Policy

The literature reveals that key areas to consider in policy development are sequence and engagement (consistency with competency-based education principles is assumed).⁵ The importance of engagement in the change process was reviewed earlier; here only sequencing is reviewed. “Top-down” reform, in which legislation and policy are the stimuli for all other changes, can and has worked in some regions. In this approach, policy creates the conditions under which successful reform can occur (Intel Education, 2018). In Intel Education’s change model, policy follows immediately after leadership to set the stage for all other change. Microsoft Education (2018) similarly considers “leadership and policy” as pivot points to change, and Mourshed, Chijioko, and Barber’s (2010) review of improved school systems cites the establishment of educational policy and law as one of six interventions common to all system improvement. New Zealand and Scotland have largely taken the approach of leading through policy in a way that phases in changes over a period of years (Milton, 2015, p. 89).

Various change models notwithstanding, different regions have initiated change well before policy explicitly supported the change—policy can implicitly support change by being sufficiently flexible or permissive to allow for innovation (Milton, 2015). The review of New England states’ reform efforts drew two primary insights: “Educators turn to competency education because it makes sense regardless of state policy ... Policy is important, but not sufficient” (Sturgis, 2016, p. 4). In other words, change can occur without policy, and change is not guaranteed with policy. Over the long term, policy change is needed to remove barriers to reform and to sustain desired changes (Phillips & Schneider, 2016; Sturgis, 2016). Phillips and

⁵ Policy is not universally seen as critical to system reform. For example, the word *policy* is rarely used in Fullan’s (2010) “All Systems Go,” a comprehensive description of educational system change methods. To Fullan, policy does not seem to be important in and of itself. Rather, it codifies elements of the new system that are important. He cites Barber and Mourshed’s three critical components of policy: “(1) getting the right people to become teachers, (2) developing effective instructors (including leaders who can do this), and (3) ensuring every student performs well” (in Fullan 2010).

Schneider's review of Idaho, Utah, and Florida illustrates different sequencing, with Idaho leading with policy/legislation, Utah leading with pilots closely followed by policy change, and Florida's policy following the lessons learned from pilots so that policy could specifically be created to avoid barriers and encourage change.

In Canada, British Columbia Education's "policy of personalization" is touted by CompetencyWorks as embracing personalized and competency-based education (Bristow & Patrick, 2014). Alberta, Ontario, Quebec, New Brunswick, Northwest Territories, and Nunavut also have strong policy frameworks that call for cross-curricular competencies, personalized learning, and competency-based learning and assessment.

Curriculum

Here, *curriculum* denotes the content as well as the progression of learning (Ferdig, 2015). This includes traditional subject area knowledge such as science and history, recognizing that this knowledge deepens and widens as learning progresses. A number of skill sets, such as reading, writing, arithmetic, and deductive reasoning, are also included here. When global competencies are included in existing curricula, subject area boundaries are transcended. As NT Education, Culture and Employment (2018) puts it,

subjects were compartmentalized, students were sorted, and the end goal was production of a very specific set of skills and knowledge. Advancements in research are now leading to a more ecological and holistic understanding of the diverse needs and contributions of learners, and the range of factors that benefit genuine learning. (p. 20)

Simply overlaying global competencies on existing curricula as an add-on will not suffice. In this scenario, every teacher is responsible for global competencies and no teacher is. There are challenges that come with teaching traditional curricula and subjects that were not set up to directly promote the learning of global competencies. Global competencies are advanced sets of abilities that draw upon knowledge, skill, and attitude; they need to be taught differently than "content." In practice, several countries are pursuing a dual approach, where content knowledge related to global competence is both integrated into the existing curriculum and also taught in specific subjects or courses (e.g., human rights education). The act of teaching is addressed in the next section. Here, the point is to recognize that the nature of traditional curricula divided by subject matter is not often conducive to the development of global competencies.

According to Milton (2015), curriculum is one of six system drivers that require shifting. These recommended shifts provide a strong sense of how curriculum needs to change if global competencies are to be fully adopted:

- Make theory of knowledge and learning explicit.
- Focus on the fundamental ideas within each academic discipline.
- Limit required outcomes or expectations to those fundamental ideas.
- Encourage interdisciplinary work. (p. 15)

Scotland’s educators might argue that Milton’s list does not go far enough. Scotland’s Curriculum for Excellence was designed with the “four capacities” as primary, with the “curriculum areas” (e.g., expressive arts, sciences) as tools or vehicles by which the four capacities can be developed (Education Scotland, 2018). New Zealand Education might add a bullet to the list, such as “configure the academic disciplines to serve key competencies” rather than figuring out how to fit key or global competencies into existing curricula (e.g., New Zealand Education, 2014). In the same vein, New Zealand’s approach would add the idea that everything that occurs within the school or in connection with the school contributes to the key competencies (i.e., there is nothing that is “extra-curricular” when it comes to key competencies).

From a progression perspective, a “pure” competency-based approach would have students advance upon the demonstration of mastery (e.g., Bristow & Patrick, 2014). Logistically, this can be difficult for schools where student progress has traditionally been along a grade-level system (e.g., K–12). According to Bristow and Patrick, “no country or school yet identified has moved on entirely from this traditional approach, although many are offering personalized pathways within each cohort ... Some policy language (Scotland, British Columbia) enables or even encourages students to progress upon mastery, but in practice, this does not commonly take place” (2014, p. 26).

Nunavut may be the case that has most visibly integrated core or global competencies with traditional curricular areas. Nunavut Education’s (2007) description of its *Inuit Qaujimagatuqangit* Education Framework makes it very clear that the set of core competencies (e.g., *Avatimik Kamattiarniq*—global environmental stewardship—is the fundamental aim of the system, and that curriculum strands (e.g., *Iqaaqqaukkaringniq*—math, science, analytical thinking, technology, practical arts) serve these competencies. Nunavut maintains a K–12 system but has superimposed five learning stages over these traditional levels: emergent learner, transitional learner, communicative learner, confident learner, and proficient learner. They have mapped the competencies to the essential skills (a competency framework that connects skills to occupational requirements) and to several university entry requirements to support students articulating their global competency abilities in their transitions from school to work and from school to postsecondary education.

Other Canadian provinces and territories to incorporate global competencies have woven them into existing curricular areas in various ways. For example, British Columbia has derived “big

ideas” from each subject area and linked these to core competencies. Alberta and Northwest Territories are currently in the curriculum redesign process, but they appear to be headed in a direction somewhere between British Columbia’s and Nunavut’s approaches.

Pedagogical Approach / Instruction

The central pedagogical features of competency-based education inclusive of global competencies are personalized, student-centred, and student-directed learning; engaging learning experiences; strengths-based starting points; learning embedded in context; the use of assessment for learning purposes; self-evaluative; flexible; inclusive of many “teachers” (e.g., Elders, employers); and experiential (e.g., Alberta Education, 2016; Bristow & Patrick, 2014; Nunavut Education, 2018; NT Education, Culture & Employment, 2018; Patrick et al., 2017). This kind of approach is often set against a polarized view of the “sage on the stage” in which the teacher transmits knowledge to the learner. However, as Mourshed and colleagues (2010) point out, educator competence varies across the globe. The old view of the all-knowing teacher dispensing content may still be true in some countries but is not the norm in Canada’s teacher-preparation programs (Gambhir, Broad, Evans & Gaskell, 2008) and is diminishing in practice in Canadian schools (Kamanzi, Riopel & Lessard, 2007). Mourshed and colleagues’ Canadian example in its study of improving schools across the globe was Ontario, a system that fell into their “great to excellent” transition category and they considered the strength of Ontario’s teachers as part of the reason for this designation.

It is highly likely that strong educators in Canadian provinces and territories already make every effort to incorporate the central pedagogical features listed here. Recognizing the expertise of Canadian educators, it will still be a significant adjustment for most to adapt to a more personalized, student-led approach, with or without structural changes. This will be, for most, an enormous change from time-based, classroom instruction.⁶

Assessment

Competency-based education ideally includes assessment that is meaningful to students, contributes to their learning, is based on criteria rather than comparison, is often student-led, is individualized, and can rely on multiple forms of evidence (e.g., Bristow & Patrick, 2014; Patrick et al. 2018). The emphasis is on formative assessment rather than summative assessment as the main aim of learning.

The primary purpose of assessment is to improve students’ learning, as both student and teacher respond to the information that it provides. Information is

⁶ The United Nations Economic Commission for Europe (UNECE) has developed a set of educator competencies for education for sustainable development (ESD). The competencies for ESD educators are likely highly transferable to those of educators working with global competencies. See https://www.unece.org/fileadmin/DAM/env/esd/ESD_Publications/Competences_Publication.pdf for more detail.


needed about what knowledge, understanding, or skills students need. By finding out what students currently know, understand, and can do, any gap between the two can be made apparent. Assessment is the process of gaining information about the gap, and learning is about attempts to reduce the gap. (New Zealand Education, 2018, p. 1)


For accountability reasons, systems may still engage in system-wide summative assessments (e.g., Programme for International Student Assessment [PISA]). PISA introduced an assessment of global competence in 2018 that includes two components: (1) a cognitive test focused on “global understanding,” a combination of background knowledge and cognitive skills related to problem solving issues related to global and intercultural issues; and (2) a questionnaire that collects self-reported information in awareness and attitudes toward global issues (OECD, 2018a, p. 21).

One component of competency-based assessment that may be novel for some educators is having assessment that can be student-led. New Zealand, for example, has tools and templates by which students can ask teachers for feedback after they have done their own assessment of a competency (New Zealand Education, 2018). An example of this follows:


Feedback Conversation


Have I finished my self/ peer assessment and made changes?
YES / NO

When I was learning how to _____
I thought _____ went well
because _____ 

Here is my evidence. 

I found _____ tricky
because _____

Could you please help me?
(A reminder? A scaffold? An example?
An explanation?) 

NOW → I will make changes
and self/peer assess again. 

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The personalized nature of competency-based education, and particularly global competency-based education, means that students and educators are co-creating assessments that fit the students’ development and context. The following excerpt from Alberta Education provides a sense of what this means for educators (the description comes after a delineation of the global competencies and their indicators):

Teachers draw upon the language or content of the descriptions and indicators to:

- share understandings with students;
- develop learning experiences;
- create assessments; and
- communicate with parents and guardians, employers and community-based social and cultural enterprises regarding competencies.

Teachers work with students to develop competencies over time. Teachers use their professional judgement to design learning experiences and select assessment strategies that are appropriate for grade, subject and context. A curriculum that promotes the development of competencies across all subjects and grades supports students in becoming lifelong learners inspired to pursue their aspirations. (Alberta Education, 2016, p. 16)

Assessments of global competencies can take many forms, from student portfolios, profiles, projects, research initiatives, papers, presentations, observations of behaviour, and more. In the words of Nunavut Education, assessment must be authentic, “grounded in real life experiences. Students need to participate actively in connecting the learning outcomes from the curriculum to their personal realities. Effective assessment must be real as well as developmentally and culturally appropriate” (Nunavut Education, 2008, p. 23).

Enabling Change: Capacity Building, Relationship Building, Infrastructure, and Resourcing

Change efforts need human, educational, infrastructure, and financial support. Perhaps most important here, especially given Canada’s position of strength in education, is the capacity building of teachers/educators and educational leaders. As Mourshed, Chijioke, and Barber put it “good to great journeys emphasize shaping the professional” (2010, p. 39), starting from recruitment and including pre-service training, professional development, coaching, peer support, career pathways, and self-evaluation. As described earlier, Finland is a shining example of supporting its educators to be successful by changing how they themselves are educated. New Zealand recognized the subtleties with which even strong educators need help when transitioning to a focus on key competencies (Hipkins, 2010).

Capacity Building

Educator capacity will need to shift to support competency-based education. The nuances of personalized learning, individualized assessment, student-led learning, and other pedagogical approaches described earlier will need to be learned and/or enhanced. At a deeper level,

ongoing, job-embedded, competency-based, and personalized professional learning must be at the heart of any system redesign. Pre-service training and professional learning cannot be siloed from new learning model designs, innovative pedagogical practices, personalized learning, systems of assessments, or accountability in a competency-based education system. (Patrick et al., 2018, p. 16)

Capacity building will need to include peer-support systems, mentorship, clinical supervision by administrators, and more. Patrick and colleagues point out that professional judgment is at the core of competency-based teaching, and that policy, training, supervision, and other supports need to assist with this judgment. As Hipkins (2010) notes, some important capacity building will involve helping teachers to “unlearn” concepts and practices they have been encouraged to practise for years. She notes, for example, that New Zealand’s “key competencies” were seen initially as simply a replacement for “essential skills,” resulting in teachers missing their deeper meaning. Teachers would then think they already knew what they needed to know to help students acquire key competencies. Hipkins refers to Alan Reid’s “name and hope” planning here, in which teachers might simply substitute the name of an essential skill with a similar key competency and hope that nothing else needs to change. The shift from a skill to a competency (skills, knowledge, and dispositions) focus requires more than simply teaching a skill or developing an area of knowledge. This shift requires a more participatory pedagogy that leads to action on the part of the learner, according to Hipkins.

Canadian provinces and territories have strong examples of capacity-building supports. British Columbia has many support communications for teachers that, in some cases, almost act as job aids. These teach what core competencies are and how to assess them, and they provide examples and illustrations. The resources range from short, to-the-point documents to frequently asked questions, videos, booklets, updates, and more. Similarly, Alberta has useful resources for educators, as does Ontario.⁷

The capacity of educational leadership will also need to be developed on a number of fronts. Administratively, personalized learning and assessment can create challenges outside of many educational administrators’ repertoires. Managerially, leaders will need to ensure that they have the ability to clearly communicate the changes to teachers, parents, employers, and others, and be able to manage the shift in each stakeholder’s expectations. From a leadership perspective, educational leaders will need to grasp the full intent and vision of global competency integration, inspire staff with the benefits of this vision, support staff when problems arise, and pull in other stakeholders in the process of helping students learn regardless of who might be “teaching.” In Hipkins’ words,

Messages teachers get back from school leaders, assessment systems ... students and parents can all reinforce a traditional view of their role. Thus understanding the difference that key competencies are intended to make is *everyone’s* business. Education leaders have a role to play. They need to organise, support and

⁷ A sample of Alberta’s resources can be seen at <https://arpcresources.ca/consortia/learning-through-competencies/>. Some of Ontario’s teacher supports are at http://www.edugains.ca/newsite/21stCenturyLearning/innovations_video.html.

participate in learning conversations between all parties who have an interest in the work of schools. (2010, p. 16)

By way of example, British Columbia's Ministry of Education (2017) has developed, in collaboration with a host of other organizations, a leadership framework with 19 common competencies for educational leaders. This kind of work needs to be continued and extended in the light of transition to a system-wide competency-based model.

Relationship Building

The engagement of stakeholders in the change process was addressed earlier. Here, the focus is on establishing system-to-system relationships in a more formal, structural sense. Two systems are particularly important in the transition to global competencies: the postsecondary education system and the system(s) of employers/industries within a province or territory. This concern was briefly mentioned in Part I of this paper. The "heart" of global competencies is to support students to have the ability to not only make sense of the world around them but to have the competencies to thrive in it. As such, the goal of global competency integration must be broader than its integration and development in public education. The development of global competencies does not end upon the completion of Grade 12. Relationships need to be developed and/or strengthened with these two systems so that the changes adopted by the public educational system are supported, encouraged, and extended. In turn, these relationships will facilitate mutual support and increase the approach's visibility.

This review did not uncover many explicit references to forming these relationships specifically for the integration of global competencies, but it seems important that universities and colleges, for example, recognize, support, and encourage the efforts of the public school system. Nunavut's system is sufficiently different that it contacted universities across Canada individually to ensure that Nunavut coursework would be approved as entrance requirements for admission.

Employers, too, need to be more than passive recipients of educated students upon graduation. The "doing" required in global competencies will need the full support of employers at best and, at worst, the absence of employers undermining the system because they do not understand it. These relationships should be as region-wide as possible so that school principals are not starting from scratch in each of their catchment areas. As Part I of this paper discussed, this is a critical issue for the full value of global competence preparation to be achieved: the experience and concomitant competency development and demonstration opportunities students receive in school must be better articulated to employers. Recent work by Franklin and Lytle (2015) for the American Enterprise Institute indicates that employers tend not to know what competency-based education is, but those who did know about it were positively disposed toward it. Their findings suggest that future educational policy reform in this area

should be combined with robust outreach and consultation with employers. Three such examples in Canada of this level of outreach are the Halton Industry Education Council in Ontario, the Saskatoon Industry Education Council in Saskatchewan, and the Business and Higher Education Roundtable.

Infrastructure

The physical infrastructure supporting learning is also key to systems transformation. “In several schools examined, learner-centered pedagogy was being considered not just as new learning spaces were designed, but also as old spaces were redesigned. Students may face each other and the ‘front of the room’ no longer exists—or may exist in some spaces used during the day, but not others” (Bristow & Patrick, 2014, p. 12). Traditional bricks-and-mortar schools are likely not going to disappear, but their internal shape and relationship to other facilities will change as global competencies are embedded in the system. The “where” of learning is important, and the physical learning environment cannot be ignored. The work of integrating standards of practice for school library learning commons in Canada provides an important example of how learning spaces can be transformed within traditional school spaces. Many of the standards articulated in the Canadian Library Association’s framework (2014) directly relate to the adaptation of learning environments that inspire global competency development.

However, infrastructure does not refer only to physical spaces. Virtual spaces and the ICTs that access these spaces—tablets, computers, smartphones, and more—are increasingly becoming pivotal elements of educational infrastructure (e.g., Milton, 2015).

Resourcing

As Fullan (2010) points out, resourcing change efforts does not mean throwing money at problems. He argues that too much resourcing can distract from the aims and lead directly to worse educational outcomes. Given that possibility, resourcing of everything discussed thus far needs to be considered and addressed. This resourcing ranges from appropriate remuneration for educators to obtaining technology appropriate to the need.

Required funds need not all come from a single source. Clearly, the relationships described here have the potential to be of assistance, recognizing the difficulties of ulterior motives and potential conflicts of interest. One-time funding is of limited use. There is little point in purchasing technology, for example, without the funds to maintain or upgrade it (e.g., Intel Education, 2017).

A particularly important element of resourcing relates back to leadership and engagement. If stakeholders such as teachers see that what they perceive to be appropriate funding is not being provided for the change effort, every other element of the change effort may be undermined. Innovation funds such as Ontario’s provide special remunerations and reliable

core funding for ongoing elements all need to be considered to support change efforts (e.g., Intel Education, 2017).

Supporting Change: Research, Evaluation, and Improvement

To some, a possibly discouraging feature of the change process described here is that it has no clear end point. To others, this may be why education will always remain vibrant and engaging. It is imperative that progress toward the intended outcomes established in the “aspiring to change” domain as well as the processes used in the attempt to reach these outcomes be evaluated (Bristow & Patrick, 2014). There is clearly an overlap with governance issues here, but research and evaluation are best seen in the same way students should experience assessment: as contributing to learning. Systems need to “reduce fear of failure by increasing opportunities for experimentation and learning from the results” (Milton, 2015, p. 17). As with students, systems and sub-systems need to have evident connections between their processes and outcomes so that their users can meaningfully manipulate processes to reach the outcomes they desire.

The danger of research and evaluation efforts is that they are used only for accountability reasons, as Milton (2015) describes, and therefore become an obstacle to improvement. If educators are treated in the same manner as students—as learners who want to improve and who will improve given appropriate feedback and support—evaluation can be a key component in system transformation.

The Change Process

In simple terms, the actual process of change can proceed in one of three main ways. A province or territory can start at the top and implement legislation and policy, working through the system in a reasonably rectilinear manner until all has changed. A province or territory can see where the energy is at the ground level, encouraging bottom-up innovations and improvements until a sufficient momentum is established to make it worthwhile to change policy, curriculum, and other system-wide elements. Third is moving on all fronts all at once, much like Fullan’s (2010) “All Systems Go” approach without needing to be identical to his.

The top-down approach can be effective in moving from poor to good (Mourshed, Chijioke, & Barber, 2010), but it may run into difficulties when a strong base of informed and educated stakeholders are already in place. It can also work if the “top” is very consultative before it pushes change along. This seems to be how British Columbia, Alberta, Ontario, Quebec, Nunavut, and Northwest Territories have proceeded, as well as Idaho in the United States (Phillips & Schneider, 2016). The “top” made it clear that change was needed (and this clarity was in response to feedback from stakeholders) but was very consultative in terms of how the change would occur. Policy followed in the knowledge that it was informed by and therefore supported by stakeholders.

The bottom-up approach can be effective because it establishes where stakeholders are, what they are already invested in, where their energy is, and what is workable. Innovation sites and pilot sites can create “buzz” that others will want to learn about and emulate. This approach seems to be working in Florida and Utah (Phillips & Schneider, 2016) and is recommended by CompetencyWorks as a way for states in the US to make the transition to competency-based education (Patrick et al., 2018). However, as Sturgis (2016) points out, change can start from the bottom but overall system change will require clear policy, implementation guidelines, and a great deal of capacity building.

The “all-in” approach that Fullan (2010) advocates would see change occurring in all the domains at the same time. A province or territory would begin by identifying its starting position in each domain, and then push each domain along, ensuring none developed so far as to threaten the others. For example, a province or territory would not want to build capacity only to have teachers wait years to be able to use it. Nor would they want to build strong engagement with stakeholders without being ready to act on this engagement with policy changes. This “start where you are” and then proceed “all at once” strategy is likely the most realistic for Canadian provinces and territories—they have strong systems, high levels of educator competence, populations that recognize change is needed, and centralized policy and curriculum bodies (i.e., ministries of education).

As Sturgis (2016) discusses, there can be a very strong draw upon educators and other stakeholders to slide back to traditional time-based, content-focused, nonpersonalized teaching even if there is initial excitement about doing things differently. Change pulls people out of their habits and working outside of habit can be difficult to sustain. The “all-in” approach done gradually but consistently keeps things moving and works against this pull to the past.

Conclusion

The most important conclusion of this literature review is that there does not seem to be a “right” way to proceed when it comes to systems transformation. The three general approaches can each contribute to supporting provinces and territories in implementing changes. A framework that supports provinces and territories to access and monitor their progress on key domains will enable them so they can not only “start where they are” but “know where they are” at all times. This will likely be very beneficial. There are many ways of organizing the components of educational system change, but the following appear to readily capture all issues discussed in the literature:

- aspiring to change: philosophy, intentions, and outcomes
- situating change: understanding context and starting points
- shaping change: leadership

- owning change: governance, accountability, and engagement
- making change: policy, curriculum, instruction, and assessment
- enabling change: capacity building, relationship building, infrastructure, and resourcing
- continuing change: research, evaluation, and improvement.

A problem with listing domains like these is the implication of linearity. Research and evaluation should begin the moment outcomes are established. Capacity building is part of the leadership domain from the very start. Each domain influences the others—another reason an “all-in” approach may have merit.

This literature review confirms that there is no pre-existing list of evidence-based benchmarks associated with these or any other domains. Sturgis (2016) argues there is not enough evaluation of system change toward competency-based education to know what the major factors of change are or to know what indicators should be measured. He points out that the best available forms of evidence are benchmarks indicating what may be best practices. This we found in abundance in this literature review. For example, in the domain, “aspiring to change,” the literature and regional examples clearly show that having a coherent philosophy that articulates core values and the rationale for the change is key to making that change. The seeds of the benchmarks are described throughout each domain’s section in this literature review. In developing the framework, these seeds will be extrapolated and expanded to form the benchmarks and support the development of indicators for the assessment tool, which will help provinces and territories see where they are and help guide them forward.

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Appendix A. Provincial/Territorial Scan of the Global Competencies

CRITICAL THINKING	
ON	<p><u>Critical Thinking and Problem Solving</u></p> <ul style="list-style-type: none"> • Solves meaningful, real-life, complex problems. • Takes concrete steps to address issues. • Designs and manages projects. • Acquires, processes, interprets, and analyzes information to make informed decisions (critical and digital literacy). • Engages in an inquiry process to solve problems. • Makes connections and transfers learning from one situation to another.
QC	<p><u>Exercises Critical Judgement</u></p> <ul style="list-style-type: none"> • Forms an opinion by weighing the logical, ethical, or aesthetic issues involved, verifies their accuracy, and puts them in perspective. • Expresses his/her opinion. • Qualifies his/her opinion and recognizes his/her biases.
NS ⁱ	<ul style="list-style-type: none"> • Learners are expected to analyze and evaluate evidence, arguments, and ideas using various types of reasoning and systems thinking to inquire, make decisions, and solve problems. They reflect critically on thinking processes.
NB	<p><u>(Anglo) Critical Thinking</u></p> <ul style="list-style-type: none"> • Learners are expected to analyze and evaluate evidence, arguments, and ideas using various types of reasoning and systems thinking to inquire, make decisions, and solve problems. They reflect critically on thinking processes. <p><u>(Franco) Cognitive Competence</u></p> <ul style="list-style-type: none"> • It's the ability to act by: <ul style="list-style-type: none"> ○ establishing links between prior and newly acquired knowledge; ○ questioning what they learn and what other people say. • At the end of students' education, they can: <ul style="list-style-type: none"> ○ process multimodal information by evaluating it for relevance, trustworthiness, and credibility; ○ explore ways to engage ethically or innovative solutions; ○ contribute to the well-being of their local and virtual communities;

	<ul style="list-style-type: none"> ○ constantly adapt to their environments using their higher-order thinking skills.
MB	<ul style="list-style-type: none"> • Learning to Know: <ul style="list-style-type: none"> ○ Uses creative, critical, and systems thinking to address complex questions. ○ Conducts focused in-depth inquiry. • Learning to Do: <ul style="list-style-type: none"> ○ Be an empowered and committed agent of change, willing to take a stand and engage in action for a sustainable future. • Enduring Understandings: <ul style="list-style-type: none"> ○ Our decisions and actions matter; they have social, environmental, economic, and political consequences. • Take Action: <ul style="list-style-type: none"> ○ Recognize the consequences of your decisions, and take action as a citizen for a sustainable and just future for all. ○ Evaluate the purposes of media, critically question information sources and our response to media, and make decisions accordingly.
NT	<p><u>Interpret and Express Meaning</u></p> <ul style="list-style-type: none"> ○ Consider bias and perspectives. ○ Consider diversity without judging. ○ Take into account technology and globalism ○ Make sense of signs, landmarks, symbols, and language.
BC	<ul style="list-style-type: none"> • Involves making judgments based on reasoning: <ul style="list-style-type: none"> ○ students consider options; ○ analyze these using specific criteria; and ○ draw conclusions and make judgments. • Critical thinking competency encompasses a set of abilities that students use to examine their own thinking, and that of others, about information that they receive through observation, experience, and various forms of communication.
PEⁱ	<ul style="list-style-type: none"> • Learners are expected to analyze and evaluate evidence, arguments, and ideas using various types of reasoning and systems thinking to inquire, make decisions, and solve problems. They reflect critically on thinking processes.

YT	<ul style="list-style-type: none"> • Involves making judgments based on reasoning: <ul style="list-style-type: none"> ○ students consider options; ○ analyze these using specific criteria; and ○ draw conclusions and make judgments. • Critical thinking competency encompasses a set of abilities that students use to examine their own thinking, and that of others, about information that they receive through observation, experience, and various forms of communication.
SK ⁱⁱ	<p><u>Think and Learn Critically</u></p> <ul style="list-style-type: none"> • Analyze and critique objects, events, experiences, ideas, theories, expressions, situations, and other phenomena. • Distinguish among facts, opinions, beliefs, and preferences. • Apply various criteria to assess ideas, evidence, arguments, motives, and actions. • Apply, evaluate, and respond to differing strategies for solving problems and making decisions. • Analyze factors that influence self and others' assumptions and abilities to think deeply, clearly, and fairly.
AB	<ul style="list-style-type: none"> • Use reasoning and criteria to conceptualize, evaluate, or synthesize ideas. Students reflect on their thinking to improve it. • Challenge assumptions behind thoughts, beliefs, or actions. • Value honesty, fairness, and open-mindedness.
NL ⁱ	<ul style="list-style-type: none"> • Learners are expected to analyze and evaluate evidence, arguments, and ideas using various types of reasoning and systems thinking to inquire, make decisions, and solve problems. They reflect critically on thinking processes.
NU	<p><u>Qanuqtarunnarniq</u></p> <ul style="list-style-type: none"> • Being innovative, resourceful, and seeking solutions
PROBLEM SOLVING	
ON	<i>See Critical Thinking</i>
QC	<p><u>Solves problems</u></p> <ul style="list-style-type: none"> • Analyzes the components of a situational problem • Tests possible solutions • Adopts a flexible approach
NS ⁱ	<ul style="list-style-type: none"> • Acquire, process, and interpret information critically to make informed decisions;

	<ul style="list-style-type: none"> • Use a variety of strategies and perspectives with flexibility and creativity for solving problems; • Formulate tentative ideas, and question their own assumptions and those of others; • Solve problems individually and collaboratively; • Identify, describe, formulate, and reformulate problems; • Frame and test hypotheses; • Ask questions, observe relationships, make inferences, and draw conclusions; and • Identify, describe, and interpret different points of view and distinguish fact from opinion.
NB	<i>See Critical Thinking</i>
BC	<ul style="list-style-type: none"> • Acquire, process, and interpret information critically to make informed decisions. • Use a variety of strategies and perspectives with flexibility and creativity for solving problems. • Formulate tentative ideas, and question their own assumptions and those of others. • Solve problems individually and collaboratively. • Identify, describe, formulate, and reformulate problems. • Frame and test hypotheses. • Ask questions, observe relationships, make inferences, and draw conclusions. • Identify, describe, and interpret different points of view and distinguish fact from opinion.
SKⁱⁱⁱ	<i>See Critical Thinking</i>
AB	<ul style="list-style-type: none"> • Selecting strategies and resources to move from what is known to what is sought. • Students analyze situations, create plans of action, and implement solutions. • Evaluate alternatives and their consequences. • Approach challenges with creativity, flexibility, and determination.
NU	<i>See Critical Thinking</i>
NT	<i>See Self-Awareness</i>
INNOVATION	
ON	<u>Innovation, Creativity, and Entrepreneurship</u> <ul style="list-style-type: none"> • Contributes solutions to complex problems • Enhances a concept, idea, or product • Takes risks in thinking and creating

	<ul style="list-style-type: none"> • Makes discoveries through inquiry research • Pursues new ideas to meet a need of a community • Leads and motivates with an ethical entrepreneurial spirit
QC	<p><u>Uses Creativity</u></p> <ul style="list-style-type: none"> • Becomes familiar with the elements of a situation • Is open to different ways of perceiving the situation • Listens to his/her intuition • Envisages different scenarios and procedures • Explores by accepting risks and unknowns • Plays with ideas • Turns obstacles into resources • Adopts a flexible approach • Expresses his/her ideas in new ways
NSⁱ	<p><u>Creativity and Innovation</u></p> <ul style="list-style-type: none"> • Learners are expected to demonstrate openness to new experiences; to engage in creative processes; to make unexpected connections; and to generate new and dynamic ideas, techniques, and products. They value aesthetic expression and appreciate the creative and innovative work of others.
NB	<p><u>(Anglo) Creativity and Innovation</u></p> <ul style="list-style-type: none"> • Learners are expected to demonstrate openness to new experiences; to engage in creative processes; to make unexpected connections; and to generate new and dynamic ideas, techniques, and products. They value aesthetic expression and appreciate the creative and innovative work of others.
MB	<p><u>Creativity and Innovation</u></p> <ul style="list-style-type: none"> • Learning to Know <ul style="list-style-type: none"> ○ Acquire knowledge and understanding, and think critically about our complex and changing world. ○ Develop ecological literacy through an understanding of the interdependence of society, the environment, and the economy. ○ Be open to new ideas and divergent thinking. ○ Seek knowledge from diverse sources and perspectives. ○ Use creative, critical, and systems thinking to address complex questions.

	<ul style="list-style-type: none"> ○ Conduct focused in-depth inquiry. ○ Explore alternative approaches to issues without fear of challenging the status quo. ○ Engage in long-term thinking and articulate a vision for a sustainable future. • Learning to Live Together <ul style="list-style-type: none"> ○ Be willing to collaborate, lead, and support. ○ Resolve conflicts peacefully. • Learning to Do <ul style="list-style-type: none"> ○ Be an empowered and committed agent of change, willing to take a stand and engage in action for a sustainable future. ○ Cultivate and share personal skills, talents, and gifts. ○ Apply intuitive and innovative thinking and decision-making skills ○ Plan informed courses of action. • Learning to Be <ul style="list-style-type: none"> ○ Be willing to contribute to the present and future well-being of all. ○ Be introspective, reflective, and self-aware. ○ Acquire a strong sense of self-knowledge and personal identity. ○ Accept and express multiple identities, allegiances, and influences. • Enduring Understanding <ul style="list-style-type: none"> ○ Our decisions and actions matter; they have social, environmental, economic, and political consequences. ○ The media do not provide neutral reflections of reality—they affect our decisions and actions. • Take Action <ul style="list-style-type: none"> ○ Explore Indigenous perspectives to extend the boundaries of the familiar and to challenge assumptions and practices.
NT	<p><u>Engage with Ideas and Respond to their Complexities</u></p> <ul style="list-style-type: none"> • Maintain a spirit of investigation • Co-construct knowledge • Analyze and synthesize • Recognize histories • Create and innovate • Seek diversity

PEⁱ	<u>Creativity and Innovation</u> <ul style="list-style-type: none"> Learners are expected to demonstrate openness to new experiences; to engage in creative processes; to make unexpected connections; and to generate new and dynamic ideas, techniques, and products. They value aesthetic expression and appreciate the creative and innovative work of others.
AB	<u>Creativity and Innovation</u> <ul style="list-style-type: none"> Generating and applying ideas to create something of value. Students recognize opportunities to apply ideas in new ways. Open to and play with ideas, take risks, and adapt to changing conditions. Demonstrate optimism, initiative, and ingenuity.
NLⁱ	<u>Creativity and Innovation</u> <ul style="list-style-type: none"> Learners are expected to demonstrate openness to new experiences; to engage in creative processes; to make unexpected connections; and to generate new and dynamic ideas, techniques, and products. They value aesthetic expression and appreciate the creative and innovative work of others.
NU	<i>See Critical Thinking</i>
CREATIVITY	
ON	<i>See Innovation</i>
QC	<i>See Innovation</i>
NSⁱ	<i>See Innovation</i>
NB	<i>See Innovation</i>
MB	<i>See Innovation</i>
NT	<i>See Innovation</i>
BC	<u>Creative Thinking</u> <ul style="list-style-type: none"> Creative thinking involves the generation of new ideas and concepts that have value to the individual or others, and the development of these ideas and concepts from thought to reality. Creative thinking is deeply collaborative. New thoughts and concepts are built on combinations of existing thoughts and concepts. The ideas available as raw material for creative thinking depend on previous experiences and learning, as well as one's cultural legacy.
PEⁱ	<i>See Innovation</i>

YT	<u>Creative Thinking</u> <ul style="list-style-type: none"> • Creative thinking involves the generation of new ideas and concepts that have value to the individual or others, and the development of these ideas and concepts from thought to reality.
SKⁱⁱⁱ	<u>Think and Learn Creatively</u> <ul style="list-style-type: none"> • Show curiosity and interest in the world, new experiences, materials, and puzzling or surprising events. • Experiment with ideas, hypotheses, educated guesses, and intuitive thoughts. • Explore complex systems and issues using a variety of approaches such as models, simulations, movement, self-reflection, and inquiry. • Create or redesign objects, designs, models, patterns, relationships, or ideas by adding, changing, removing, combining, and separating elements • Imagine and create central images or metaphors for subject area content or cross-disciplinary ideas.
AB	<i>See Innovation</i>
NLⁱ	<i>See Innovation</i>
NU	
ENTREPRENEURSHIP	
ON	<i>See Innovation</i>
LEARNING TO LEARN	
ON	<u>Learning to Learn and Be Self-Aware and Self-Directed</u> <ul style="list-style-type: none"> • Learns the process of learning (metacognition) • Believes in the ability to learn and grow (growth mindset) • Perseveres and overcomes challenges to reach a goal • Self-regulates to become a lifelong learner • Reflects on experience to enhance learning • Cultivates emotional intelligence to understand self and others • Adapts to change and shows resilience to adversity • Manages various aspects of life—physical, emotional (relationships, self-awareness), spiritual, and mental well-being
NSⁱ	<u>Personal-Career Development</u>

	<ul style="list-style-type: none"> • Learners are expected to become self-aware and self-directed individuals who set and pursue goals. • They understand and appreciate how culture contributes to work and personal life roles. • They make thoughtful decisions regarding health and wellness and career pathways.
NB	<p><u>(Anglo) Personal Career Development</u></p> <ul style="list-style-type: none"> • Learners are expected to become self-aware and self-directed individuals who set and pursue goals. • They understand and appreciate how culture contributes to work and personal life roles. • They make thoughtful decisions regarding health and wellness and career pathways. <p><u>(Franco) A lifelong desire to learn</u></p> <ul style="list-style-type: none"> • Allows students to: <ul style="list-style-type: none"> ○ develop an open mind in a rapidly changing world; ○ take responsibility for their personal and professional learning; ○ continue to learn because their school experiences relate to their life experiences. <p><u>(Franco) A balanced life</u></p> <ul style="list-style-type: none"> • Allows students to: <ul style="list-style-type: none"> ○ adopt healthy attitudes and behaviours to deal with diverse, complex, and changing environments; ○ develop competencies that contribute to their own well-being and that of the community; ○ adapt by using and combining internal and external resources to make life/career decisions and engage as citizens.
MB	<p><u>Learning to Learn and Self-Awareness</u></p> <ul style="list-style-type: none"> • Learning to Know <ul style="list-style-type: none"> ○ Acquire knowledge and understanding, and think critically about our complex and changing world. ○ Develop ecological literacy through an understanding of the interdependence of society, the environment, and the economy. ○ Be open to new ideas and divergent thinking. ○ Seek knowledge from diverse sources and perspectives. ○ Use creative, critical, and systems thinking to address complex questions. ○ Conduct focused in-depth inquiry. ○ Explore alternative approaches to issues without fear of challenging the status quo. ○ Engage in long-term thinking and articulate a vision for a sustainable future. • Learning to Do:

	<ul style="list-style-type: none"> ○ Act responsibly toward self, others, and the environment. ○ Be willing to let go and give back, and to make changes to live sustainably. ○ Be an empowered and committed agent of change, willing to take a stand and engage in action for a sustainable future. ○ Cultivate and share personal skills, talents, and gifts. ○ Practise helpfulness and share hopefulness. ○ Demonstrate care and respect through language and actions. ○ Apply intuitive and innovative thinking and decision-making skills. ○ Plan informed courses of action. • Learning to Be: <ul style="list-style-type: none"> ○ Appreciate the natural world and live by ecological principles. ○ Be willing to contribute to the present and future well-being of all. ○ Be introspective, reflective, and self-aware. ○ Acquire a strong sense of self-knowledge and personal identity. ○ Accept and express multiple identities, allegiances, and influences. ○ Know how to be and how to live with others in shared spaces.
PEⁱ	<u>Personal Career Development</u> <ul style="list-style-type: none"> • Learners are expected to become self-aware and self-directed individuals who set and pursue goals. • They understand and appreciate how culture contributes to work and personal life roles. • They make thoughtful decisions regarding health and wellness and career pathways.
NLⁱ	<u>Personal Career Development</u> <ul style="list-style-type: none"> • Learners are expected to become self-aware and self-directed individuals who set and pursue goals. • They understand and appreciate how culture contributes to work and personal life roles. • They make thoughtful decisions regarding health and wellness, and career pathways.
NT	<i>See Positive Personal and Cultural Identity / Understand, Value and Care for Oneself and for Others</i>
SELF-AWARENESS	
ON	<i>See Learning to Learn</i>
QC	<u>Achieves his/her potential</u> <ul style="list-style-type: none"> • Recognizes his/her personal characteristics.

	<ul style="list-style-type: none"> • Identifies his/her capacities, values, and the extent of his/her knowledge. • Identifies his/her strengths and weaknesses. • Assesses the quality and appropriateness of his/her choices of action. • Recognizes the impact of his/her actions on his/her successes and difficulties. • Evaluates his/her achievements and progress. • Takes his/her place among others. • Recognizes that he/she is part of a community. • Compares his/her values and perceptions with those of others. • Perceives the influence of others on his/her values and choices. • Expresses his/her opinions and choices. • Respects others. • Makes good use of his/her personal resources. • Establishes short- and long-term goals. • Establishes criteria for personal, educational, and career success. • Makes the efforts required to achieve his/her goals. • Perseveres in the effort to achieve his/her goals. • Displays increasing autonomy.
NSⁱ	See <i>Learning to Learn</i>
MB	See <i>Learning to Learn</i>
NT	<u>Negotiate Change and Challenge</u> <ul style="list-style-type: none"> • Find your way with the roles that you need to play • Understand and respond to power • Adapt to places and people • Assess and take risks • Act ethically
BC	<u>Personal Awareness and Responsibility</u> <ul style="list-style-type: none"> • Personal awareness and responsibility includes the skills, strategies, and dispositions that help students to stay healthy and active, set goals, monitor progress, regulate emotions, respect their own rights and the rights of others, manage stress, and persevere in difficult situations. Students who demonstrate personal awareness and responsibility demonstrate self-respect and express a sense of personal well-being.

PEⁱ	<i>See Learning to Learn</i>
YT	<u>Personal Awareness and Responsibility</u> <ul style="list-style-type: none"> Includes the skills, strategies, and dispositions that help students to stay healthy and active, set goals, monitor progress, regulate emotions, respect their own rights and the rights of others, manage stress, and persevere in difficult situations. Students who demonstrate personal awareness and responsibility demonstrate self-respect and express a sense of personal well-being.
AB	<u>Personal Growth and Well-being</u> <ul style="list-style-type: none"> Managing emotional, intellectual, physical, social, and spiritual aspects of living. Students set learning, career, or wellness goals and work toward them. They draw upon their strengths to develop interests, skills, and talents. Students are reactive, resourceful, and optimistic and they strive for personal excellence.
SELF-DIRECTION	
QC	<u>Adopts Effective Work Methods</u> <ul style="list-style-type: none"> Considers all aspects of a task Adopts the objective and evaluates its complexity Identifies the available resources Imagines various ways to carry out the task Plans how to carry it out Reflects on the best way to proceed Regulates his/her approach Employs the necessary resources: people, materials, time, concepts, strategies, etc. Adapts his/her work method to the task, the context, and his/her individual characteristics Readjusts his/her actions as required Completes the task Analyzes his/her procedure
NB	<i>See Learning to Learn</i>
PEⁱ	<i>See Learning to Learn</i>
NLⁱ	<i>See Learning to Learn</i>
NU	<u>Piliriqatigiinniq and Pilinnajasarniq</u>

	<ul style="list-style-type: none"> • Working together and development of skills through practice and effort
NT	<i>See Positive Personal and Cultural Identity / Understand, Value and Care for Oneself and for Others</i>
COLLABORATION	
ON	<u>Collaboration</u> <ul style="list-style-type: none"> • Participates in teams; establishes positive relationships • Learns from, and contributes to, the learning of others • Co-constructs knowledge, meaning, and content • Assumes various roles on the team • Manages conflict • Networks with a variety of communities/groups • Respects a diversity of perspectives
QC	<u>Cooperates with Others</u> <ul style="list-style-type: none"> • Contributes to team efforts • Participates actively in classroom and school activities • Uses differences constructively to attain a common objective • Plans and carries out work with others • Carries out his/her task according to the rules agreed on by the team • Recognizes which tasks can be done more effectively by means of teamwork • Interacts, showing an open mind • Accepts others as they are and recognizes their interests and needs • Exchanges points of view, listens to others, and respects different views • Adapts his/her behaviour to the team members and the task • Manages conflict • Evaluates his/her participation in collaborative work • Measures the challenges and issues involved in collaborative work • Recognizes its benefits for himself/herself and others • Assesses his/her participation and that of peers • Identifies desirable improvements
NB	<u>(Franco) Social-emotional competence</u>

	<ul style="list-style-type: none"> • It's the ability to act by: <ul style="list-style-type: none"> ○ adapting to different environments; ○ building and applying their knowledge. • At the end of the students' education, they: <ul style="list-style-type: none"> ○ are in charge of their own well-being; ○ have a strong personal and social identity; ○ contribute to the well-being of their local and virtual communities.
MB	<ul style="list-style-type: none"> • Learning to Do <ul style="list-style-type: none"> ○ Cultivate and share personal skills, talents, and gifts. ○ Practise helpfulness and share hopefulness. ○ Demonstrate care and respect through language and actions. • Learning to Be <ul style="list-style-type: none"> ○ Acquire a strong sense of self-knowledge and personal identity. ○ Accept and express multiple identities, allegiances, and influences. ○ Know how to be and how to live with others in shared spaces. • Learning to Live Together <ul style="list-style-type: none"> ○ Respect diversity and value equity. ○ Engage in intercultural dialogue and cultivate a widening circle of empathy and concern. ○ Respect the inherent, inalienable, and universal nature of human rights. ○ Be willing to collaborate, lead, and support. ○ Resolve conflicts peacefully. • Enduring Understandings <ul style="list-style-type: none"> ○ Our decisions and actions matter; they have social, environmental, economic, and political consequences. ○ A just society respects human diversity and recognizes universal, equal, and inalienable rights. • Take Action <ul style="list-style-type: none"> ○ Uphold the value of every person and strive to build community; act in ways that acknowledge human solidarity and the complexity and interrelatedness of all life.
AB	<ul style="list-style-type: none"> • Work with others to achieve a common goal. • Students participate, exchange ideas, and share responsibilities. • Respect competing views and nurture positive relationships.

	<ul style="list-style-type: none"> • Be adaptable, willing to compromise, and value the contributions of others.
NU	<u>Aaiiqatigiingniq and Pijitsirniq</u> <ul style="list-style-type: none"> • Decision making through discussions, discussion, and consensus • Serving and providing for family and/or community
COMMUNICATION	
ON	<u>Communication</u> <ul style="list-style-type: none"> • Communicates effectively in different contexts in oral and written form in French and/or English • Asks effective questions to acquire knowledge • Communicates using a variety of media • Selects appropriate digital tools according to purpose • Listens to understand all points of view • Gains knowledge about a variety of languages • Voices opinions and advocates for ideas
QC	<u>Communicates Appropriately</u> <ul style="list-style-type: none"> • Becomes familiar with various modes of communication • Knows various modes of communication • Observes their usage, rules, codes, and conventions • Uses their resources • Uses the appropriate mode of communication • Analyzes the communication situation • Chooses one or more modes of communication suited to the context and purpose of communication • Identifies ways of communicating suited to the target audience • Uses one or more modes of communication suited to the situation • Manages his/her communication process • Takes into account factors that may facilitate or hinder communication • Adjusts communication to the real or potential target audience • Recognizes the strategies used throughout the process and evaluates their effectiveness
NSⁱ	<ul style="list-style-type: none"> • Learners are expected to express themselves and interpret effectively through a variety of media. They participate in critical dialogue, listen, read, view, and create for information, enrichment, and enjoyment.

<p>NB</p>	<p><u>(Anglo) Communication</u></p> <ul style="list-style-type: none"> • Learners are expected to express themselves and interpret effectively through a variety of media. They participate in critical dialogue, listen, read, view, and create for information, enrichment, and enjoyment. <p><u>(Franco) Communication competence</u></p> <ul style="list-style-type: none"> • It's the ability to act by: <ul style="list-style-type: none"> ○ co-constructing a vision of the world in order to participate in and interact with society; ○ clearly expressing their thoughts and processing visual, written, verbal and nonverbal information. • At the end of the students' education, they can: <ul style="list-style-type: none"> ○ communicate effectively in both structured and nonstructured contexts; ○ interact with others to share how they think, understand, and express themselves; ○ co-construct their cognitive, language, identity, and cultural representations.
<p>MB</p>	<ul style="list-style-type: none"> • Learning to Know <ul style="list-style-type: none"> ○ Acquire knowledge and understanding and think critically about our complex and changing world. ○ Be open to new ideas and divergent thinking ○ Seek knowledge from diverse sources and perspectives. ○ Use creative, critical, and systems thinking to address complex questions. • Learning to Do <ul style="list-style-type: none"> ○ Cultivate and share personal skills, talents, and gifts. ○ Practise helpfulness and share hopefulness ○ Demonstrate care and respect through language and actions. • Learning to Be <ul style="list-style-type: none"> ○ Be willing to contribute to the present and future well-being of all. ○ Be introspective, reflective, and self-aware ○ Acquire a strong sense of knowledge and personal identity. ○ Accept and express multiple identities, allegiances, and influences. • Learning to Live Together <ul style="list-style-type: none"> ○ Respect diversity and value equity. ○ Engage in intercultural dialogue and cultivate a widening circle of empathy and concern. ○ Be willing to collaborate, lead, and support. ○ Resolve conflicts peacefully.

	<ul style="list-style-type: none"> ○ Conduct focused in-depth inquiry. ○ Explore alternative approaches to issues without fear of challenging the status quo. ○ Engage in long-term thinking, and articulate a vision for a sustainable future.
BC	<ul style="list-style-type: none"> • Connect and engage with others. • Acquire, interpret, and present information. • Explain/recount and reflect on experiences and accomplishments. • Collaborate to plan, carry out, and review construction and activities.
PEⁱ	<ul style="list-style-type: none"> • Explore, reflect on, and express their own ideas, learnings, perceptions, and feelings. • Demonstrate understanding of facts and relationships presented through words, numbers, symbols, graphs, and charts. • Present information and instructions clearly, logically, concisely, and accurately for a variety of audiences. • Demonstrate a knowledge of the second official language. • Access, process, evaluate, and share information. • Interpret, evaluate, and express data in everyday language. • Critically reflect on and interpret ideas presented through a variety of media.
YT	<ul style="list-style-type: none"> • Communication encompasses the set of abilities that students use to impart and exchange information, experiences, and ideas, to explore the world around them, and to understand and effectively engage in the use of digital media. • Communication competency provides a bridge between students' learning, their personal and social identity and relationships, and the world in which they interact.
SKⁱⁱⁱ	<p><u>Developing Literacies</u></p> <ul style="list-style-type: none"> • Literacies provide many ways to interpret the world and express understanding of it. • Being literate involves applying interrelated knowledge, skills, and strategies to learn and communicate with others. Communication in a globalized world is increasingly multimodal. • Communication and meaning making, therefore, require the use and understanding of multiple modes of representation. Each area of study develops disciplinary literacies (e.g., scientific, economic, physical, health, linguistic, numeric, aesthetic, technological, cultural) and requires the understanding and application of multiple literacies (i.e., the ability to understand, critically evaluate, and communicate in multiple meaning-making systems) to participate fully in a constantly changing world.

AB	<ul style="list-style-type: none"> • Share ideas through oral, written, or nonverbal media. • Engage in formal and informal exchanges with others. • Consider how culture, context, and experience affect messaging. • Demonstrate respect, empathy, and responsibility when communicating with others.
NLⁱ	<ul style="list-style-type: none"> • Learners are expected to express themselves and interpret effectively through a variety of media. They participate in critical dialogue, listen, read, view, and create for information, enrichment, and enjoyment.
NU	<u>Inuuigatgiitairaniq and Tunnganarniq</u> <ul style="list-style-type: none"> • Respecting others, relationship, and caring for people • Fostering good spirits by being open, welcoming, and inclusion
NT	<i>See Critical Thinking</i>
GLOBAL CITIZENSHIP	
ON	<u>Global Citizenship</u> <ul style="list-style-type: none"> • Contributes to society and the culture of the local, global, and digital community in a responsible, accountable, and ethical manner • Engages in local and global initiatives to make a difference • Learns from and with diverse people • Interacts safely and responsibly within a variety of communities • Creates a positive digital footprint • Relates to the environment and is mindful of the importance of all living things
NSⁱ	<ul style="list-style-type: none"> • Learners are expected to contribute to the quality and sustainability of their environment, communities, and society. • They analyze cultural, economic, environmental, and social issues; make decisions and judgments; solve problems; and act as stewards in a local, national, and global context.
NB	<u>(Anglo)</u> <ul style="list-style-type: none"> • Learners are expected to contribute to the quality and sustainability of their environment, communities, and society. They analyze cultural, economic, environmental, and social issues; make decisions and judgments; solve problems; and act as stewards in a local, national, and global context. <u>(Franco) Engaged and ethical citizenship</u>

	<ul style="list-style-type: none"> • Allows students to: <ul style="list-style-type: none"> ○ contribute to the well-being of their local and virtual communities by following ethical citizenship practices; ○ make sense of the society they live in; ○ affirm their Acadian/francophone culture by participating in a democratic, pluricultural, and diverse society.
MB	<p><u>Citizenship, Sustainability, and Well-being</u></p> <ul style="list-style-type: none"> • Citizenship, sustainability, and well-being are essential to ensure that all students are prepared in their role as global citizens who are sensitive to and have respect for other cultures, and are prepared for active involvement in addressing issues of economic, social-cultural, and environmental sustainability. The cognitive, emotional, social, and physical (and for some, spiritual) domains of well-being must be supported to meet the conditions needed for students to learn, grow, and develop a positive sense of self.
NT	<p><u>Contribute to Live Well Together in this Interconnected World</u></p> <ul style="list-style-type: none"> • Assume leadership when needed and trust others in their roles. • Encourage and support people to belong. • Collaborate for a shared purpose and future. • Envision and work toward sustainability. • Share your gifts, act on your rights, and fulfill your responsibilities.
BC	<ul style="list-style-type: none"> • Social responsibility involves the ability and disposition to consider the interdependence of people with each other and the natural environment; to contribute positively to one’s family, community, society, and the environment; to resolve problems peacefully; to empathize with others and appreciate their perspectives; and to create and maintain healthy relationships.
PEⁱ	<ul style="list-style-type: none"> • Learners are expected to contribute to the quality and sustainability of their environment, communities, and society. They analyze cultural, economic, environmental, and social issues; make decisions and judgments; solve problems; and act as stewards in a local, national, and global context.
YT	<ul style="list-style-type: none"> • Social responsibility involves the ability and disposition to consider the interdependence of people with each other and the natural environment; to contribute positively to one’s family, community, society, and the environment; to resolve problems peacefully; to empathize with others and appreciate their perspectives; and to create and maintain healthy relationships.
SKⁱⁱⁱ	<p><u>Developing Social Responsibility</u></p> <ul style="list-style-type: none"> • Social responsibility is the ability of people to contribute positively to their physical, social, and cultural

	<p>environments. It requires an awareness of unique gifts and challenges among individuals and communities and the resulting opportunities that can arise. It also requires participation with others in creating an ethical space.</p> <ul style="list-style-type: none"> • K–12 Goal: Use moral reasoning processes to engage in dialogue, address mutual concerns, and accomplish shared goals.
AB	<p><u>Cultural and Global Citizenship</u></p> <ul style="list-style-type: none"> • Involves actively engaging with cultural, environmental, political, or economic systems. Students acknowledge First Nations, Métis, Inuit, francophone, or other perspectives when taking action on local or global issues. They advocate for the dignity and well-being of individuals and communities. Students value equity and diversity and believe in their capacity to make a difference.
NLⁱ	<ul style="list-style-type: none"> • Learners are expected to contribute to the quality and sustainability of their environment, communities, and society. They analyze cultural, economic, environmental, and social issues; make decisions and judgments; solve problems; and act as stewards in a local, national, and global context.
NU	<p><u>Avatmik Kamattiarniq</u></p> <ul style="list-style-type: none"> • Respect and care for the land, animals, and the environment
SUSTAINABILITY	
NSⁱ	<i>See Global Citizenship</i>
NB	<i>See Global Citizenship</i>
MB	<i>See Global Citizenship</i>
NT	<i>See Global Citizenship</i>
PEⁱ	<i>See Global Citizenship</i>
SKⁱⁱⁱ	<p><u>Understand and Value Social, Economic, and Environmental Interdependence and Sustainability</u></p> <ul style="list-style-type: none"> • Examine the influence of world views on one’s understanding of interdependence in the natural and constructed world. • Evaluate how sustainable development depends on the effective and complex interaction of social, environmental, and economic factors. • Analyze how one’s thinking, choices, and behaviours affect living and nonliving things, now and in the future. • Investigate the potential of individual and group actions and contributions to sustainable development.

	<ul style="list-style-type: none"> • Demonstrate a commitment to behaviours that contribute to the well-being of the society, environment, and economy—locally, nationally, and globally.
NLⁱ	<i>See Global Citizenship</i>
MANAGING INFORMATION / USES INFORMATION	
QC	<p><u>Uses Information</u></p> <ul style="list-style-type: none"> • Systematizes the information-gathering process • Establishes research strategies • Determines the pertinence of information • Is on the lookout for information and attentive to what is available • Gathers new information independently • Uses many sources of information and cross-checks the information obtained • Seeks further documentation • Selects appropriate information sources • Identifies the value of each piece of information • Evaluates the validity of information according to criteria • Makes connections between what he/she already knows and new information • Distinguishes between essential and secondary information • Answers his/her questions, using information gathered • Compares his/her new learning with previous learning • Uses information in new contexts • Respects copyright
SKⁱⁱⁱ	<p><u>Think and Learn Contextually</u></p> <ul style="list-style-type: none"> • Apply prior knowledge, experiences, and the ideas of self and others in new contexts. • Analyze connections or relationships within and/or among ideas, experiences, or natural and constructed objects. • Recognize that a context is a complex whole made of parts. • Analyze a particular context for the ways that parts influence each other and create the whole. • Explore norms, concepts, situations, and experiences from several perspectives, theoretical frameworks, and worldviews.
AB	<u>Managing Information, and Organizing and Using Information for Specific Purposes.</u>

	<ul style="list-style-type: none"> Students access, interpret, evaluate, and share information from a variety digital and nondigital sources. They are ethical and effective in how they use and share information. Students value reliability, validity, and integrity of information.
USES INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) – TECHNOLOGICAL FLUENCY	
QC	<u>Uses Information and Communications Technology</u> <ul style="list-style-type: none"> Masters the technologies Becomes familiar with various technological tools Diversifies his/her use of the tools Chooses the most suitable tools for the situation Becomes aware of values and codes regarding respect for intellectual property and privacy Uses the technologies in his/her learning Carries out various tasks using technological resources and functions Recognizes and uses previously learned concepts and processes in new contexts Applies interaction, communication, and troubleshooting strategies required for a given task Envisages new ways to use the technologies Evaluates his/her use of the technologies Defines the possibilities and limits of ICT Compares his/her ways of using ICT with those of others Considers the relevance of using ICT for specific tasks Adapts his/her practices to improve performance
NSⁱⁱ	<u>Technological Competence</u> <ul style="list-style-type: none"> Locate, evaluate, adapt, create, and share information using a variety of sources and technologies. Demonstrate understanding of and use existing and developing technologies. Demonstrate understanding of the impact of technology on society. Demonstrate understanding of ethical issues related to the use of technology in a local and global context.
NB	<u>(Anglo) Technological Fluency</u> <ul style="list-style-type: none"> Learners are expected to use and apply technology to collaborate, communicate, create, innovate, learn, and solve problems. They use technology in a legal, safe, and ethically responsible manner.
PEⁱⁱ	<u>Technological Competence</u>

	<ul style="list-style-type: none"> • Locate, evaluate, adapt, create, and share information using a variety of sources and technologies. • Demonstrate understanding of and use existing and developing technologies. • Demonstrate understanding of the impact of technology on society. • Demonstrate understanding of ethical issues related to the use of technology in a local and global context.
NL ⁱⁱ	<u>Technological Competence</u> <ul style="list-style-type: none"> • Locate, evaluate, adapt, create, and share information using a variety of sources and technologies. • Demonstrate understanding of and use existing and developing technologies. • Demonstrate understanding of the impact of technology on society. • Demonstrate understanding of ethical issues related to the use of technology in a local and global context.
NT	<i>See Critical Thinking</i>
POSITIVE PERSONAL AND CULTURAL IDENTITY / UNDERSTAND, VALUE AND CARE FOR ONESELF AND FOR OTHERS	
NT	<u>Nurture Who You Are and Become Who You Want To Be</u> <ul style="list-style-type: none"> • Deepen close relationships with self, spiritual world, people, and the land. • Belong to communities that enrich your identity. • Reflect, celebrate, and create opportunities for success. • Build resilience. • Pursue life plans.
BC	<u>Positive Personal and Cultural Identity</u> <ul style="list-style-type: none"> • A positive personal and cultural identity is the awareness, understanding, and appreciation of all the facets that contribute to a healthy sense of oneself. It includes awareness and understanding of one’s family background, heritage(s), language(s), beliefs, and perspectives in a pluralistic society. Students who have a positive personal and cultural identity value their personal and cultural narratives and understand how these shape their identity. Supported by a sense of self-worth, self-awareness, and positive identity, students become confident individuals who take satisfaction in who they are, and what they can do to contribute to their own well-being and to the well-being of their family, community, and society.
YT	<u>Positive Personal and Cultural Identity</u> <ul style="list-style-type: none"> • Positive personal and cultural identity is the awareness, understanding, and appreciation of all the facets that contribute to a healthy sense of oneself. It includes awareness and understanding of one’s family background,

	<p>heritage(s), language(s), beliefs, and perspectives in a pluralistic society. Students who have a positive personal and cultural identity value their personal and cultural narratives and understand how these shape their identity. Supported by a sense of self-worth, self-awareness, and positive identity, students become confident individuals who take satisfaction in who they are, and what they can do to contribute to their own well-being and the well-being of their family, community, and society.</p>
<p>SKⁱⁱ</p>	<p><u>Understand, Value, and Care for Oneself (Intellectually, Emotionally, Physically, Spiritually)</u></p> <ul style="list-style-type: none"> • Recognize that cultural and linguistic backgrounds, norms, and experiences influence identity, beliefs, values, and behaviours. • Develop skills, understandings, and confidence to make conscious choices that contribute to the development of a healthy, positive self-identity. • Analyze family, community, and societal influences (such as recognized and unrecognized privileges) on the development of identity. • Demonstrate self-reliance, self-regulation, and the ability to act with integrity. • Develop personal commitment and the capacity to advocate for self. • Understand, value, and care for others. • Demonstrate open-mindedness. • Learn about various peoples and cultures toward respect for all. • Recognize and respect that people have values and world views that may or may not align with one’s own values and beliefs. • Value the varied abilities and interests of individuals to make positive contributions to society. • Advocate for the well-being of others.

ⁱ The Atlantic Canada framework for essential graduation competencies, retrieved from https://www.ednet.ns.ca/files/curriculum/atlantic_canada_essential_grad_competencies.pdf

ⁱⁱ Cross-curricular competencies (September 24, 2010), Saskatchewan Ministry of Education, retrieved from https://www.edonline.sk.ca/bbcswebdav/library/curricula/English/Cross-curricular_Compencies_2010.pdf