Assessing and Reporting Non-Cognitive Skills: A Cross-Canada Survey

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Abstract

Canadian educational jurisdictions require teachers to assess and report upon aspects of student performance beyond academic achievement. These skills and competencies are often called "non-cognitive skills" (NCS). This study used document analysis to determine which NCS are assessed across provinces, identifying commonalities, variations in the skills assessed, and how these skills are reported. While substantial variability was found in the labelling of these skills, the assessments of collaboration, responsibility, organization, and independence commonly appeared. Further, these skills are typically reported upon using a 3 or 4-point rating scale. Of interest, provinces used both economic and educational arguments to justify their inclusion of NCS in students' report cards.

Keywords: assessment, non-cognitive skills, reporting, grading, work habits, learning skills

Introduction

There has been increasing recognition of the importance of educational outcomes beyond grades and academic achievement in schooling. These outcomes have been broadly referred to as "non-cognitive skills" (NCS), and include traits and skills such as perseverance, executive functioning, metacognition, and self-regulation (Almlund, Duckworth, Heckman, & Kautz, 2011). Admittedly, there is wide recognition that "non-cognitive" is a misnomer as there is a cognitive component to many, if not all, of these skills. However, as Farrington et al. (2012) noted, "to try to substitute in another word now would likely confuse rather than illuminate our collective understanding" (p. 2). Thus, we will use the term non-cognitive skills as a collective term for constructs that are assessed by teachers in addition to academic achievement.

The importance of NCS for supporting learning has been firmly established in research (e.g., Dweck, Walton, & Cohen, 2011; Farrington et al., 2012; Hattie, Biggs, & Purdie, 1996), and we can see evidence of how school systems value NCS through their assessment frameworks. For example, in Ontario, all K-12 teachers are expected to assess and report upon six different "learning skills and work habits" (Ontario, 2010). In British Columbia, Grade 8 to 10 students are assessed on "social responsibility," and students in Manitoba are assessed on "Learning Behaviours" (British Columbia, 2001; Manitoba, 2015). In fact, all provinces in Canada assess student progress on NCS in addition to academic achievement. The assessment of NCS is not unique to Canada — many school systems around the world also incorporate NCS into their assessment frameworks (e.g., ASCD, 2007; International Baccalaureate Organization, 2009; Northern Ireland, 2007; Singapore, 2014).

One reason that schools and school systems are so keen to assess NCS may be that while academic achievement and high grades in secondary school are associated with academic success in university, they

are not strong predictors of long term life outcomes (Camara & Echternacht, 2000). By contrast, there is an abundance of research linking NCS with positive long-term life outcomes (Almlund et al., 2011; Borghans, Duckworth, Heckman, & Ter Weel, 2008; Salgado, Moscoso, & Berges 2013). For instance, conscientiousness has been associated with improved educational attainment, health, and job success (Heckman & Kautz, 2012). Self-regulation has been linked to improved health (Heckman, 2007), social success (Tangney, Baumeister, & Boone, 2004), and reduced drug use (Heatherton & Wagner, 2011). The Conference Board of Canada (2015) listed responsibility and the ability to work in teams as vital job skills. Given the importance of NCS for success in school and life, it is critical that we know more about which NCS are currently being assessed in Canadian schools.

Why Assess Non-Cognitive Skills? A Review of the Research

While there has been a recent resurgence focusing on NCS, they have been studied for decades. In the sixties and seventies, social psychologists began to identify requirements for functioning effectively in society and created scales to measure these traits in individuals (Inkeles, 1966; Inkeles & Smith, 1974). An early finding in Inkeles' (1966) research was that years of formal education was found to be better predicted by NCS than by work experience, exposure to media, or location of residence. These studies were instrumental in revealing the close relationship between schooling and NCS. Concurrently, economics research through the seventies and eighties was seeking to determine how schooling affected an individual's subsequent earnings. Most studies examined how years of schooling and test scores correlated with earnings (Murnane, Willett, & Levy, 1995). However, a few researchers began to question if achievement test scores and IQ were able to accurately capture everything that was learned in schools (Bowles, Gintis, & Osborne, 2001; Gintis, 1971). Of interest, after controlling for cognitive ability, the majority of the effects of schooling on earnings were due to factors beyond what could be measured by standardized tests of achievement or IQ (Bowles et al., 2001). Other researchers have subsequently found that test scores and cognitive ability were only weakly associated with earnings (Cawley, Parmar, Foley, Salmon, & Roy, 2001; Vignoles, De Coulon, & Marcenaro-Gutierrez, 2011). Thus began a search for skills and abilities, beyond grades and test scores, that contribute most to school and life success.

Alongside this growing body of research, school systems changed the focus of their curriculum and assessments to support students in becoming more employable. In 1984, the National Research Council in the United States formed a panel of large business employers and government agencies to develop a set of "core competencies" for high school graduates. This set included traditional cognitive skills (e.g., English proficiency, reasoning, reading, and writing), social qualities (e.g., interacting in a socially respectable manner, handling conflict, and participation in group decision making), and personal qualities (e.g., positive attitude towards oneself, self-discipline, punctuality, and responsibility) (National Research Council, 1984). Similar reports intended to define and improve employability skills were developed by Canada (Conference Board of Canada, 2015), the European Union (European Commission, 2012), and international organizations (Rychen & Salganik, 2000; UNESCO, 1996). These reports have been very influential in determining what NCS are assessed in schools, with school systems referencing them directly in their curriculum documents (e.g., Ontario Ministry of Education, 2010; Quebec Ministry of Education, n.d.).

In addition to the economic research is a separate but related body of educational research that focuses on the impact of NCS on learning. Recent studies have found that NCS are tied to school achievement at all levels from elementary to post-secondary (e.g., Chamorro-Premuzic, & Furnham, 2008; Lai, 2011). Traits such as self-efficacy and confidence predict reading, science, and mathematics achievement on large-scale assessments. This holds true even when controlling for other potential predictor variables such as socioeconomic status and attendance at school (Lipnevich & Roberts, 2012). Lipnevich and Roberts' (2012) summary of studies have found that this association is independent of country and student age. This same trend is observed in a variety of NCS and school based outcomes. As one example, a review of university students' GPA and NCS found that self-efficacy and effort were the strongest correlates with academic achievement (Richardson, Abraham, & Bond, 2012). Similarly, middle school students' performance in science and English were significantly predicted by the use of metacognitive strategies (Pintrich & DeGroot, 1990). At the elementary level, Blair, Ursache, Greenberg, and Vernon-Feagans (2015) found that self-regulation predicts mathematics achievement and Mischel's (2014) famous "marshmallow tests" are often cited by teachers as evidence for the importance of developing self-control in children. Perhaps in response to this research, organizations such as the "Partnership for 21st Century Learning" in the

United States and, "People for Education" in Canada have committed themselves to promoting NCS in schools, and influencing national conversations on education to increase the value and attention paid to developing and assessing NCS in schools.

Current research into NCS and schooling investigates a broad array of constructs including: self-regulation, self-regulated learning, metacognition, self-control, efficacy, self-discipline, grit, executive function, dispositions, and conscientiousness (e.g., Allan, Hume, Allan, Farrington, & Lonigan, 2014; Boekaerts & Corno, 2005; Diamond, 2012; Duckworth & Gross, 2014; Riveros, Norris, Hayward, & Phillips, 2012). Curiously, despite the large body of research linking different NCS to learning, we could find no studies that directly addressed what NCS are actually assessed in schools. This is an important question to answer for not only are there a tremendous number of NCS schools could assess, but many NCS lack consistent definitions (Duckworth & Kern, 2011). Further, there is strong evidence that NCS are malleable, and developed in schools (Little, 2017). Thus, it is imperative to know if schools are assessing constructs that are related to improved learning, or other desirable outcomes.

Problem

NCS have been incorporated into the report cards of nearly all Canadian schools. While the terminology used is different in different provinces, the intent is always the same – to report upon elements of student performance beyond academic grades. The purpose of our current study was to summarize a variety of Canadian curriculum, legislative, assessment, and policy documents pertaining to NCS to determine common themes and variance in which NCS are assessed and how they are graded. In particular, the research questions that guided our work were:

- What non-cognitive skills are assessed across provincial jurisdictions across Canada?
- How is student achievement on these non-cognitive skills reported provincial jurisdictions across Canada?

Method and Data Sources

Our work used document analysis with documents sourced from the public domain including Ministry of Education websites, school district websites, legislation, and policy documents published by regional consortia. Two types of documents were sought. The first was report card templates or samples for different regions, and the second was policy, district, or ministerial documents such as assessment guides for teachers and parents. Some provinces (e.g., Manitoba and Ontario) use a province-wide report card template, whereas other provinces allow for local control of the report card. In this case, we attempted to locate report cards from some major regions or cities in the province. Samples were taken from all 10 provinces, but schools located in the territories, and federally funded schools, were excluded, as we were not able to obtain sufficient documentation.

A quantitative approach was taken to the content analysis of the documents. Report card analysis was restricted to tabulating which NCS are assessed, and how results are reported. Policy documents and assessment guides were examined using codes that related to the following: the rationales given for including NCS on report cards, definitions of the NCS that appear on the report card, age or grade level achievement standards, and links to established research. Codes were established prior to analysis based upon the research questions, and using advice from Stemler (2001), coding was done independently by two of the authors. After initial coding, any disagreements were resolved through discussion with the third author. Disagreements were minimal as coding required little inferencing.

Results

Our results are first reported for each province. These results detail which NCS are assessed in each province, and how teachers are expected to report student progress on these NCS. In addition, important background or clarifying information is provided. Subsequently, we provide a summary of the rationales different provinces use to justify the inclusion of NCS on report cards. Finally, we summarize the different attributes of the NCS assessments for each province such as whether the NCS are defined, or whether there is guidance on how student achievement of the NCS should change over time.

Table 1 gives the specific NCS that are reported in each province, and how achievement on those skills is reported to students and parents. The second column of the table gives the term that each province uses

to denote non-cognitive skills. No province uses the term non-cognitive skills, instead "competencies" and "learning skills" are most popular. While the results reported here do not cover every school system in the country, they represent a broad sample of NCS grading and reporting practices.

Table 1
Examples of NCS on Canadian Report Cards

Province	Term used for NCS	Specific skills assessed	How skills are reported
Alberta (Calgary)	Unknown	Citizenship, personal development, character	4-point scale
Alberta (Edmonton Catholic)	Growth as a learner	Social development, work & study habits	3-point scale
British Columbia (Elementary)	Competencies	Effort, behaviour, attitude, work habits	Written comments by teacher
British Columbia (Secondary)	Competencies	Work habits	4-point scale
Manitoba	Learning behaviours	Personal management skills, active participation, social responsibility	4-point scale
New Brunswick (English)	Learning habits	Independence, initiative, interactions, organization, responsibility	4-point scale
Newfoundland (Gr. 1-6)	Social and behavioural indicators	Well-being and belonging, communication, social contribution	3-point scale
Nova Scotia (English)	Learner profile	Classwork and assignments, interactions with others, organizational skills, responsibility and independence	4-point scale
Ontario	Learning skills and work habits	Initiative, independent work, collaboration, self-regulation, responsibility, organization	4-point scale
Prince Edward Island (English)	Learning skills and work habits	Responsibility, independence, collaboration, organization	4-point scale
Quebec (Anglophone and Francophone)	Competencies	Exercises critical judgment, organizes his/her work, communicates effectively, works in a team	Written comments by teacher
Saskatchewan (Regina)	Personal and social growth	I belong, I participate, I am responsible, I respect	4-point scale
Saskatchewan (Yorkton)	Learning behaviours	I belong, I learn, I am responsible, I respect, I nurture	4-point scale

Alberta

In Alberta, the primary document surrounding NCS is a Ministerial Order describing the desired outcomes of the Alberta education program (Alberta, Department of Education, 2013). This document focuses on fundamental goals and values of Alberta citizens. "Engaged thinker," "ethical citizen" and "entrepreneurial spirit" are described as three desired outcomes of an Alberta education. Other desired outcomes include: critical thinking, problem solving, innovation, managing information, communication skills, and cultural understanding. The inclusion of entrepreneurial spirit is unique to Alberta and serves to highlight the viewpoint that developing NCS is an economic good. There is no standardized provincial report card. Thus, the manner in which schools and school districts operationalize these constructs is left to local con-

trol. As an example, Calgary includes three NCS in their report cards and each NCS is divided into two or more facets, with teachers reporting on individual facets using a 4-point scale. In contrast, Edmonton Catholic schools report on "social development" and "work and study habits" with teachers reporting on multiple facets of each of these constructs using a 3-point scale.

British Columbia

British Columbia has an extensive set of documents relating to NCS, which are labeled Core Competencies. Examples of Core Competencies include creative thinking, critical thinking, and communication. Each core competency has a specific profile document dedicated to it that richly describes the competency (British Columbia Ministry of Education, 2015). Further, sub-competencies are identified with student-based "I will be able to" statements. The end of the document contains "Profiles" which provide a range of five to eight achievement stages for each NCS. Along with a description of each stage, exemplars are provided to enable teachers to better understand the expectations for the NCS and their integration with different subject curricula. The report cards in British Columbia require teachers to use written comments in assessing NCS for elementary students and give a single "work habits" grade to secondary students using a 4-point scale. In the explanatory notes on the report card, work habits is further divided into responsibility, cooperation, and independence, but these are not reported upon individually. It should be noted that schools in British Columbia are not required to use the provincial template and so variations in the report card exist throughout the province. As an example, Vancouver requires secondary teachers to include written comments about NCS on each student's report card.

Manitoba

Manitoba describes NCS as "Learning Behaviours" within their report card policy guidelines (Manitoba Education and Advanced Learning, 2015). Manitoba requires all teachers to report upon specific learning behaviours related to students' personal management skills, active participation, and social responsibility. Interestingly, Manitoba also allows for local control in the assessment and reporting of NCS by providing a "Local Option" on the report, enabling schools to add one or two additional NCS. Teachers rate the Learning Behaviours using a 4-point scale (consistently, usually, sometimes, and rarely) based upon the frequency with which students demonstrate these skills. Sample indicators and definitions are provided to enable teachers to have a more comprehensive understanding of these behaviours.

New Brunswick

As an Atlantic province, New Brunswick is part of the Atlantic Provinces Education Foundation. This foundation has published a set of "Essential Graduation Learnings" that have influenced which NCS are assessed in all of the Atlantic provinces (Atlantic Provinces Education Foundation, 2013). The New Brunswick report cards include five different NCS (Independence, Initiative, Interactions, Organization, Responsibility) that are collectively known as "Learning Habits." Similar to Manitoba, these habits are rated using a 4-point scale (consistently, usually, sometimes, and rarely) based upon the frequency with which students demonstrate these skills. We were unable to find report card templates or reliable information on the assessment and reporting of NCS in French schools in New Brunswick, so the information presented here applies to English schools only.

Newfoundland

Newfoundland reports upon "social and behavioural indicators" using a 3-point scale. The points on the scale are; usually, with prompting, and rarely. The social and behavioural indicators are defined for teachers, parents, and students, but these definitions are multifaceted. For example, well-being and belonging includes self-regulation, appropriate behaviour, and physical health. Communication includes both a student's ability to understand directions and respect for cultural diversity. Social contribution requires students to demonstrate both an "understanding of the concept of fairness" and a "willingness to show respect for, and accept differences, in others" (Newfoundland & Labrador, n.d., p. 12-13). We could find no guidance given to teachers on how to weight the different facets of each indicator to report on students' progress on each of the indicators.

Nova Scotia

Nova Scotia has four different components of its "Learner Profile." They are: "Classwork and assignments," "Interacts with others," "Organizational skills" and, "Responsibility and independence." These skills are further described on the report card so that parents and students are aware that, for example, the classwork and assignments grade is based upon a student's ability to complete their work, and how much they strive to create work of high quality. Nova Scotia indicates changing expectations for student performance on NCS as the student progresses through the school system by including a greater number of facets to each NCS as the student progresses. For example, Grade 1 students do not have homework included as part of their classwork and assignments grade, whereas Grade 7 students do have homework included for this skill. The 4-point scale used to grade NCS in Nova Scotia is similar to that of Manitoba and New Brunswick in that it is based upon the frequency with which the student demonstrated the behaviour (consistently, usually, sometimes, rarely).

Ontario

Ontario details the assessment of NCS in a larger document entitled Growing Success that describes all aspects of assessment, evaluation, and reporting in Ontario schools (Ontario Ministry of Education, 2010). All teachers from kindergarten to Grade 12 are expected to evaluate six "Learning Skills and Work Habits" (collaboration, independent work, initiative, organization, responsibility, self-regulation) on every report card. The 4-point rating scale uses Excellent, Good, Satisfactory, and Needs Improvement and report cards are standardized throughout the province. While the individual learning skills and work habits are not explicitly defined, sample behaviours are listed for each skill to help teachers understand how each skill might be manifested in the classroom. The Growing Success document specifically states that the list of sample behaviours is not exhaustive and that teachers may use other behaviours or evidence as justification for the learning skills and work habits grades awarded to students. The development of the Ontario learning skills and work habits appears to have been heavily influenced by Costa and Kallick's (2000) "Habits of Mind" and the Organization for Economic Cooperation and Development's development of "Key competencies" (Costa & Kallick, 2000; Rychen & Salganik, 2000).

Prince Edward Island

Prince Edward Island (PEI) mandates assessing NCS from kindergarten to Grade 9 (Prince Edward Island English Language School Board, 2015). Until recently, the four skills "Responsibility," "Independence," "Collaboration," and "Organization" were assessed using a 4-point numerical scale. A slight change was made for the 2016-17 school year, where the same four skills were graded on a 3-point scale using the letters M, C, and D. M signifies "maximum" use of the skill, C signifies "consistent" use of the skill and D signifies "developing" use of the skill.

Quebec

Quebec devotes a 22-page chapter within the overall description of the Quebec Education Program to NCS (Quebec Ministry of Education, Leisure and Sport (n.d.). These NCS are labeled as nine different "Cross-Curricular Competencies" that all schools, French or English, are expected to develop in their students. However, there does not appear to be a requirement to report on each of these competencies individually. Instead, teachers in Quebec are expected to report on "Exercises critical judgment," "Organizes his/her work," "Communicates effectively" and, "Works in a team." Reporting on these competencies takes place only in Terms 1 and 3 and teachers need report only on two of the four competencies although they may choose to assess all four competencies. Teachers select which two competencies they wish to assess, and may choose the same competencies in Term 3 as they did in Term 1 (Quebec, 2011). Teachers report on achievement on these four cross-curricular competencies using written comments instead of a numerical rating system. According to the Quebec Ministry of Education (2011), "these comments are not based on a formal evaluation" (p. 10), but we did not find statements guiding teachers as to what events or data should inform the comments.

Saskatchewan

In Saskatchewan NCS are described in a document entitled *Cross-curricular Competencies* (Saskatchewan, 2010). These competencies fall under five umbrellas: "Thinking," "Identity and Interdependence," "Literacies," and "Social Responsibility," and are derived from an earlier policy in Saskatchewan that focused on "Essential learnings" (Saskatchewan, 1988, 2010). The competencies are expected to "strengthen and enrich students' present learning and future lives" (Saskatchewan, 2010, p. 1). For each NCS a brief description is provided along with examples of how students could develop these skills. These competencies are operationalized on students; report cards using "I …" statements. For example, Regina uses the phrases; "I belong," "I want to know," "I am responsible" and, "I respect" and then provides 3 to 5 facets of each "I…" statement. Teachers rate students from 1 to 4 on every single facet (e.g., a total of 16 ratings on a Regina School District Grades 1 to 3 report card). The numerical rating has a one or two sentence description of what the rating signifies printed directly underneath the rating, giving parents and students some context to a number. Yorkton School District uses the same 4 "I…" statements as Regina but adds, "I nurture." Yorkton also uses a 4-point scale, but it is based on frequency of observed behaviour with a scale that ranges from *rarely* to *consistently*.

Table 2 provides a list of important documents relating to the assessment of NCS and gives the motivations for developing NCS, and including those NCS into school assessment frameworks. This Table illustrates that there is a common thread of developing and assessing these skills in order for students to contribute to society. This contribution is usually framed as an economic contribution. While Alberta is the most direct in stating this rationale for including NCS in assessment frameworks, all other provinces also had this rationale, often in the form of preparing students for the world of work (e.g., Ontario Ministry of Education, 2010).

The second theme that permeates these documents is that of developing lifelong learners (e.g., Atlantic Provinces Education Foundation, 2013; Quebec, n.d.). Some of the documents in the table (e.g., *Growing Success: Assessment, Evaluation and Reporting in Ontario Schools,* Ontario Ministry of Education, 2010) cite research demonstrating the link between NCS and better learning, or NCS and economic outcomes, but none of the documents cite research connecting NCS to lifelong learning. While there is a strong research based justification connecting NCS to positive economic outcomes, the research connecting NCS to lifelong learning is not as well established, although it appears that metacognition, self-regulation, and a deep approach to learning are all positively associated with lifelong learning (Kirby, Knapper, Lamon, & Egnatoff, 2010).

Table 2
Motivations for Supporting NCS in K-12 Classrooms in Canadian Schools

Province	Document(s) accessed	Stated motivations for supporting NCS
Alberta	Ministerial Order on Student Learning	Achieve success Contribute to the economy Contribute to society Child centered learning Create lifelong learners
Atlantic Canada[1]	The Atlantic Canada Framework for Essential Graduation Learnings in Schools	Productive member of society Personal fulfillment and growth Create lifelong learners
British Columbia	Core Competencies	Develop the student Prepare for society Contribute to society Create lifelong learners
Manitoba	Manitoba Provincial Report Card Policy and Guidelines: Partners for Learning	Positive influence on students Lifelong learning Contribute to local and global communities

Ontario	Growing Success: Assessment, Evaluation and Reporting in Ontario Schools	Prepare for post-secondary and work life Help achieve in school
Quebec	Quebec Education Program: Cross-Curricular Competencies	Develop thinking Adapt to post-secondary and work life Create lifelong learners
Saskatchewan	Cross-Curricular Competencies	Strengthen future lives Academic achievement

[1]The Atlantic Provinces were treated as a unit because the *Framework for Essential Graduation Leraning* is the foundational document that all Atlantic provinces refer to in creating their NCS assessments

Discussion

With no national control of education, it is perhaps not surprising there are diverse policies and practices relating to assessing NCS across Canada. What NCS are assessed, and how the results of those assessments are reported, varied across each province, and in some cases, within the province. Alberta for example, does not have a province wide framework for assessing and reporting upon NCS. British Columbia has a provincial framework, but there is some flexibility in how schools report upon NCS. In contrast, Ontario has a consistent set of six NCS that must be assessed by all K-12 teachers in all public and Catholic school systems. Nonetheless, despite this diversity it is possible to identify some commonalities in the data. The discussion will focus on two central themes. The first theme centers around the operationalization of NCS in Canadian schools. This includes what NCS are assessed, how they are reported, and the support given to teachers in making their assessments. The second theme focuses on the drivers or rationales for assessing and reporting upon NCS.

Operationalizing NCS in Canadian Schools

Which NCS are assessed? Our study revealed that all provinces in Canada require teachers to assess and report upon NCS, but the range of NCS that are assessed is wide. In fact, there are over 20 unique terms that appear on Canadian report cards when it comes to naming NCS. Many of these skills share similarities, and thus it is possible to group them into themes (Table 3). Collaboration, responsibility, organization, and independence are the NCS most commonly reported across Canada. These four NCS closely overlap with the Conference Board of Canada's (2015) list of employability skills which includes constructs such as collaboration, responsibility, organization, and respect. This is not surprising given the strong influence economic groups such as the Conference Board of Canada and the Organization for Economic Co-operation and Development (OECD) have had on the discussion surrounding these skills. In contrast, other constructs such as independence and responsibility may reflect educators' desires for productive classroom behaviours.

Table 3
NCS on Canadian Report Cards Sorted by Theme

	British Columbia	Calgary	Manitoba	New Bruns-wick	New-foundland	Nova Scotia	Prince Edward Island	Ontario	Quebec	Regina
Self-regulation					X			X		X
Collaboration	X		X	X	X	X	X	X	X	X
Responsibility	X	X		X		X	X	X		X
Organization				X		X	X	X	X	X
Respect		X	X		X					X
Goal setting		X						X		X
Perseverance		X								X
Independence	X		X	X		X	X	X		
Participation	X		X							
Effort	X			X						

There is recognition on the part of some provinces that NCS are not independent of each other. Saskatchewan (2010) describes its cross-curricular competencies as "interrelated" (p. 1), and Quebec (n.d.) states that its cross-curricular competencies, "complement each other, so that when one of them is applied, it generally opens doors to the others" (p. 1). Self-regulation for example, is not explicitly assessed in the majority of Canadian jurisdictions, but clearly students need to be self-regulated in order to be responsible, organized, and effective collaborators. It should further be pointed out that some NCS are also intended to be developed as part of the curriculum. Communication for example, falls into the "Social and behavioural indicators" portion of the Newfoundland Grade 1-6 report card, but communication is something that would also be developed and assessed as part of the language arts curriculum.

How is achievement on NCS reported? It is well established that many NCS are difficult to assess (Corno, 2011; Winne, 2010). Self-regulation, for example, is a complex, multi-faceted phenomenon, especially in the context of classroom learning (Credé & Kuncel, 2008; Dinsmore, Alexander, & Loughlin, 2008; Stroud, 2013). Despite the known complexity of NCS, most school systems rely on 3- or 4-point scales to report on the achievement of these skills. While rating scales with only three or four points are easy to complete, and will therefore make workloads more manageable for teachers, they also struggle to capture the complexity and contextual nature of NCS. Some jurisdictions (e.g., Ontario, Regina School District) attempt to anchor the scales by providing description of the scale points on the report card but other jurisdictions offer little to no guidance as to how the different achievement levels should be interpreted (e.g., Calgary School District, Nova Scotia). In some cases, a particular skill that is defined as multifaceted, is reported as a single number. For example, in British Columbia secondary schools, work habits are comprised of: "responsibility," "independence," and "cooperation." All three facets of work habits are anchored at each of the four achievement levels, but no guidance is given to teachers on how to grade a student who displays varying levels of achievement for each facet. This means that assigning and interpreting the work habits grade can be difficult. For example, what single work habits grade should be assigned to the student who is strong in responsibility and independence, but weak in cooperation? If a student receives a work habits grade of "good," does this mean they were good in all facets of the grade, or were they excellent in some facets and only satisfactory in others?

One way to circumvent the problems associated with reporting systems that use a restricted numerical scale points is to use written comments. While only Quebec and British Columbia elementary schools mandate this reporting method, nearly all other school systems allow teachers to add written comments to report cards. Furthermore, teachers in all provinces have several vehicles open to them to communicate

assessment results to parents and students including: parent-teacher interviews, student-led conferences, emails, phone calls, and letters home. How these alternate reporting methods are used to communicate student achievement and progress in their development of NCS was beyond the scope of our study, but given the low levels of assessment literacy of many teachers (DeLuca & Bellara, 2013), it seems unlikely that these alternate reporting methods are being used to their fullest potential. This is not to say that there are no teachers who are communicating their methods of assessment, rating criteria, and assessment processes clearly, only that in the realm of assessing NCS, it is likely not the norm. Clearly, more research needs to be done as to how teachers leverage alternate forms of communication to report on students' NCS.

What supports are given to teachers to help them assess NCS? While there is a general lack of consistency between provinces surrounding the assessment of NCS, there are two important commonalities. First, all provinces have a policy that academic achievement grades and NCS grades should not be conflated. This is consistent with the research and recommendations of classroom assessment experts (e.g., Brookhart, 1994; Cox, 2011; Guskey, 2006). Second, no province or school system uses standardized tests or assignments to measure any of the NCS. Thus, NCS assessments are based purely upon teachers' judgments of the students. Some provinces give teachers guidance in how to assess NCS by including exemplars, example behaviours, or characteristics of the skill to be assessed. For example, Ontario (2010) gives example behaviours associated with each of its six learning skills and work habits. The behaviours are intended to "assist but not restrict teachers" (Ontario Ministry of Education, 2010, p. 10) in their assessment of students. Quebec (n.d.) gives thorough definitions of its nine competencies and how they might be developed and evaluated, but these competencies do not appear on the report card. Instead, Quebec teachers report on a set of four different competencies that are related to, but not identical to, the nine competencies listed in the cross-curricular competencies document. We were not able to find policies or guidelines for Quebec teachers on how to assess the competencies on the report card, nor on how to determine which two of the four competencies they should assess. Indeed, most provinces give minimal to no guidance on how to assess the NCS that appear on the report card (e.g., Alberta, 2013; Manitoba, 2015; Saskatchewan, 2010). There does appear to be the capacity within some ministries to give teachers more guidance. As an example, British Columbia (2001) has developed a set of performance standards, complete with rubrics, for "social responsibility" in grades 8 to 10, but this construct does not appear on report cards. Further, it is possible that individual schools or districts have undertaken initiatives to give teachers training and support in assessing NCS, but our general finding is that minimal resources appear to be devoted to helping teachers assess NCS in a valid, reliable fashion.

The lack of guidance for teachers on how to assess NCS is troubling. Some authors argue that teachers have the potential to be good assessors of NCS (Zimmerman & Martinez-Pons, 1988). There is some appeal to this argument because teachers have consistent contact with students over an extended period of time, and can observe them in a range of activities. Unfortunately, what little evidence exists about their NCS assessment practice indicates that teachers found NCS difficult to assess, and that they did not check students' progress on NCS as often as they should (Miller, Klinger, & Shulha, 2006). This finding, combined with other studies demonstrating that teachers generally have low levels of assessment literacy (e.g., Stiggins, 2001; Volante & Fazio, 2007), calls into question how teachers grade NCS and what meaningful information can be derived from those grades.

One area of NCS assessment that appears to be poorly articulated in policy documents is describing how students should progress in their development of NCS as they move through the school system. How should the expectations of a skill such as "organization" be different for a Grade 6 student compared to a Grade 4 student? Without appropriate standards in place for teachers to reference, all grading of NCS must either be ipsative or norm-referenced. Another problem is that it is unknown what activities are to be included in the assessment of NCS. When assessing respect for example, does a Grade 1 teacher include only behaviours observed in the classroom, or does she also take into account what happens on the playground at recess? Further guidance to teachers on what types of activities are useful assessments of the different NCS, and how to design and implement these activities would be helpful. Teachers receive a great deal of curricular support to help students develop subject area knowledge, and have clear policies surrounding the assessment and grading of academic achievement, but the level of support and guidance offered to teachers to help them develop and assess students' NCS is much lower.

Drivers

Economic rationale. All provinces cited an economic rationale as a means of justifying the inclusion of NCS in the curriculum and assessment processes of schools. Specifically, policymakers view NCS as valuable skills for the workplace or for the individual's economic benefit. Some provinces, such as Alberta (2013) are very direct, with "entrepreneurial spirit" (p. 2) being included in a ministerial order on student learning. Other provinces, such as Ontario, are less explicit in linking NCS to economic outcomes. Nevertheless, Ontario's (2010) policy states that developing learning skills and work habits will help prepare students for "the world of work" (p. 12) and then further states that, in addition to educational research, the Ministry of Education consulted with both "Human Resources and Skills Development Canada (HRSDC) and the Conference Board of Canada" (p. 12). Quebec (n.d.) also links NCS with desirable economic outcomes by describing its cross-curricular competencies as "essential in the working world" (p. 1). As we noted, there is ample evidence linking NCS to positive economic outcomes, such as higher salary, even when controlling for cognitive ability (e.g., Heckman, Pinto, & Savelyev, 2013; Lleras, 2008) and given that taxpayers fund public schools, it is perhaps not surprising that the most common rationale given for developing NCS in Canadian classrooms was economic.

Osborne (2000) states that Canadian schools have historically been expected to serve three functions including developing students' talents, preparing students to be citizens, and training them for the workplace. Along with Osborne, other authors (e.g., Bowles & Gintis, 2011; Saltman, 2015) have noted that in recent decades, public education systems have been increasingly influenced by calls for them to develop knowledge and skills that are useful in the workplace. This trend is not just in North America, but appears throughout Anglo-American societies (Davies & Guppy, 1997). While there is a clear and reasonable economic rationale for developing NCS in students, it is interesting to note that the rationale in Canadian policy documents was framed mostly from a workplace point of view and not in terms of other known social goods such as improved health outcomes, better marriage stability, better parenting, and lower criminality (Borghans et al., 2008; Heckman, Pinto, & Savelyev, 2013; Moffitt et al., 2011). For example, stronger NCS are associated with higher graduation rates (Deming, 2009). Surely all stakeholders would consider such outcomes as desirable, but they were not included in the policy documents we reviewed.

Educational rationale. Given that the primary goal of schools is to educate students, it is surprising educational outcomes are not given as much prominence as economic outcomes as justification for developing NCS in Canadian students. However, all provincial ministries of education recognize the positive impact on learning that occurs as a result of students developing strong NCS — and use that link to justify including NCS in student assessment frameworks. Saskatchewan (2010), for instance argues that developing cross-curricular competencies helps to "support student achievement of subject area outcomes" (p. 1). In Alberta, a consortium of school districts describes NCS as being "applied to a particular context for successful learning and living" (Alberta Regional Consortia, n.d., p. 1), and there is a ministerial order (Alberta, Department of Education, 2013) that lists "know how to learn" as a competency that Alberta students should develop. Further, the Atlantic Provinces Education Foundation (2013) write that NCS "will prepare students to continue to learn throughout their lives" (p. 6), in addition to making them "ready to meet the shifting and ongoing demands of life, work and study" (p. 6). We noted other instances in which learning benefits were claimed as justification to developing NCS, and justified in terms of post-secondary education (e.g., Ontario, 2010; Quebec, n.d.).

While educational arguments for developing NCS in schools are present in policy documents, they are unsupported by evidence or research. For example, Ontario (2010) states that "achievement of the curriculum expectations in many curriculum areas is closely tied to learning skills and work habits" (p. 10), but offers no evidence of this. By contrast, they cite the OECD, Conference Board of Canada, and Human Resources and Skills Development Canada to support the argument that NCS are valued workplace skills. The result of omitting educational arguments from policy documents is that we do not see any arguments to justify the inclusion (or exclusion) of specific NCS. Clearly, not every NCS can be included on a report card, so decisions must be made about which NCS are included, and which are excluded. We could find no educational arguments supporting why different NCS were included or excluded. For example, why do "organization" and "responsibility" appear on many report cards, but "conscientiousness" does not? There may be valid educational reasons for this, but they are not articulated to teachers, parents, or students.

Limitations

The current study does not include all school systems in Canada. School systems in the territories, and federally funded schools have a stronger focus on Indigenous culture than school systems in the rest of Canada, and this may be reflected in their reporting systems. While it would have been interesting to include these systems in our study, the difficulties we had in obtaining information precluded us from doing so. However, the excluded systems only represent about 3% of the Canadian K-12 student population.

A further limitation is that which NCS are assessed in Canadian schools is constantly changing. For example, British Columbia will be moving to "competencies" and will be assessing competencies such as creative thinking, critical thinking, personal awareness, and communication and has published draft versions of documents that define the competencies (British Columbia, 2015). Likewise, PEI and New Brunswick are also in the process of revamping their assessments of NCS. In 2017, Ontario announced a committee to decide upon a new set of NCS (labelled "21st Century Skills") to be developed and assessed in schools. Thus, the specific details of which NCS are assessed, and how they are reported, will likely not be accurate at time of publication, although we feel confident that the broader themes identified in this study will still be present.

Summary and Future Research

The importance of NCS for helping students achieve desired outcomes has been firmly established in both the educational and economic research literature. Despite this importance, the assessment of NCS in school systems has been minimally studied. This report provides valuable baseline information on which NCS are assessed across Canada, how assessment results are reported, and what rationales are given for including NCS on report cards. Document analysis revealed that collaboration, responsibility, organization, and independence are the most commonly reported NCS across Canada, and that reporting is typically done using a 3- or 4-point scale. It was further found that economic and educational arguments serve as the primary justification for developing NCS in Canadian students. Economic arguments typically frame NCS as job skills required for success in the workplace, and omit other desirable economic outcomes known to be associated with NCS. Educational arguments are typically unsupported by research based rationales, despite the large amount of research connecting NCS to better learning.

Because provincial policy documents provide teachers with such little information on how to assess and report upon NCS, we have no way of knowing what activities teachers are using to assess NCS, nor how they are distinguishing between different levels of achievement. Thus, it becomes difficult to understand what information teachers are communicating when they report upon NCS. As a result, parents and students are presented with a grade, or set of grades, from which it is difficult to extract meaning. This points to the need for further research to determine what processes or activities teachers use to assess NCS, and how they distinguish between levels of achievement. In addition, there needs to be research that explores how teachers, parents, and students are using this assessment information, and how it is impacting learning in the classroom.

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