

# Negotiating Accountability and Integrated Curriculum from a Global Perspective

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**Abstract.** In an age of educational accountability there is tension between the pressure for success in large-scale testing and the need to develop students 21<sup>st</sup> century competencies such as communication and creative problem solving to prepare them for the complex global world. Integrated curriculum is a popular way to develop these skills yet it is often dismissed because of accountability issues. This article explores the policy directions of several educational jurisdictions around the world to provide a deeper understanding of the relationship between the two positions. The analysis concludes that integrated curriculum approaches do not seem to have a negative impact on large-scale testing scores.

**Keywords:** Integrated curriculum; accountability; educational policy; standardized testing; 21<sup>st</sup> century competencies

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## Introduction

The tension between the need for accountability and the need to create an educational system that works in the 21st Century permeates educational jurisdictions around the world. Curriculum integration is often seen as a way to effectively approach 21<sup>st</sup> century learning. The thinking seems to be, however, that in order to do better on accountability measures there is no room for integrated approaches. For example, there was a strong interest in curriculum integration in the late 1980s and early 1990s in the United States and Canada but the push toward standardization and large-scale testing, methods designed to increase accountability, muted that interest (March & Willis, 2007). In contrast, since 2000, the jurisdictions in East Asia have been attracted to integration as a means of developing generic skills, expanding international awareness and preparing students for a global economy (Lam, Alviar-Martin, Adler, & Sim, 2013). Yet, the stereotype of East Asian countries is that the students study endlessly in a highly competitive, ruthless, exam-driven environment to obtain the top spots at the next level of schooling.

Although there are many ways to define accountability, from a teacher's personal sense of responsibility to system accountability, the concept has generally come to mean the effectiveness of educational jurisdictions as measured through large-scale testing (Figlio & Loeb, 2011). Recently this definition of accountability has shifted from a local context to a globalized one that is rooted in an economic rationale. Success is determined by measuring students on international tests with context-free specific needs and competencies; much of contemporary reform is based on this rationale intended to further the global economic agenda (Mayer, Trohler, Labaree, & Hutt, 2014). Organizations such as the Organization for Economic Cooperation and Development (OECD) have played a central role in this shift with its Programme for International Student Assessment (PISA) tests having a far-reaching impact as educational policy is strongly influenced by results on these tests. Although there are other significant international tests and some dissension around OECD as the arbitrator of educational excellence (Meyer, 2014), we use PISA tests as the marker of the most successful educational systems in the world.

Why are educators reluctant to consider integrated or interdisciplinary curriculum? Unfortunately, part of the reason is that definitions of integrated curriculum can be confusing - ranging from multidisciplinary to transdisciplinary (Drake, Reid, & Kolohon, 2014). Here we interpret integrated curriculum to mean when two or more subject areas are connected in some way. The research on the effectiveness of such approaches has been largely anecdotal (Applebee et al., 2007; Czerniak, 1999) or worse, have designs that are flawed (Brewer, 2002; Pang & Good, 2000). There is, however, some strong new empirical research emerging to support such approaches that cut across subject areas such as project-based learning, socio-emotional learning and arts-based learning (see, for example, Vega, 2013). Nevertheless, integrated curriculum seems like a perfect fit for developing generic 21<sup>st</sup> Century competencies such as collaboration, creativity, communication, character education, civic literacy and critical thinking (see, for example, Brooks & Holmes, 2014; Fullan, 2013; Hargreaves & Shirley, 2012). More importantly, students are more engaged in school when they are learning in an interdisciplinary environment (Hinde, 2005; Holm, 2011).

The purpose of this paper is to explore whether students can succeed at large-scale testing and also learn through an integrated curriculum. Are accountability measures and curriculum integration incompatible? Or can students do well in large-scale tests and also learn through integrated approaches? The significance is that educators may consider integrated approaches to teaching and learning that will engage students, facilitate learning the 21<sup>st</sup> Century competencies and will also lead to success on large-scale tests. This paper examines the relationship between curriculum policy on integrated learning and countries that consistently do well on international accountability measures - specifically PISA. The 'hypothesis' being that if countries that do well on PISA also include integrated learning, then this should be an endorsement for integrated learning. Although it is obviously

simplistic to consider testing as the only measure of the success of an education system, we explore here how jurisdictions such as Hong Kong, Shanghai, Singapore, Korea, and Japan, all countries that repeatedly top the OECD charts, are balancing accountability with curriculum integration. We then look at Finland, the province of Quebec in Canada, and the International Baccalaureate schools, all of which are known for their commitment to integrated approaches to learning. This is followed by a brief discussion of educational policy in the United States and Ontario, Canada in the hope of gaining a deeper understanding of the issue.

## **Method**

This paper is a conceptual analysis of curriculum policies in several educational jurisdictions as exemplified in their published curriculum documents available on the internet. It includes appropriate literature and correspondence with knowledgeable individuals in these jurisdictions to help deepen understanding of what these policies look like in practice. As well, figures have been added that are adaptations of key graphics describing curriculum policy. Our organizing lens has been to look at curriculum policy to see if there is a unifying framework with goals that cut across subject areas or if the curriculum is presented in subject-specific silos. Our deductive categorization of integrated curriculum is rooted in what students are required to know (disciplinary or interdisciplinary content, facts or big ideas), do (low level skills or 21<sup>st</sup> century competencies) and be (discipline specific values, attitudes and behaviors or interdisciplinary values, attitudes and behaviors; Drake et al., 2014). We also examine educational policy in each jurisdiction that incorporates integrated approaches.

## **Analysis**

Publicly available curriculum documents from several educational jurisdictions from around the world are analysed below. The analysis focuses on the presence, or absence, of integrative curriculum approaches in the curriculum documents. Policy documents that explicitly mention or mandate integrated approaches are also mentioned where appropriate.

### **1. East Asia**

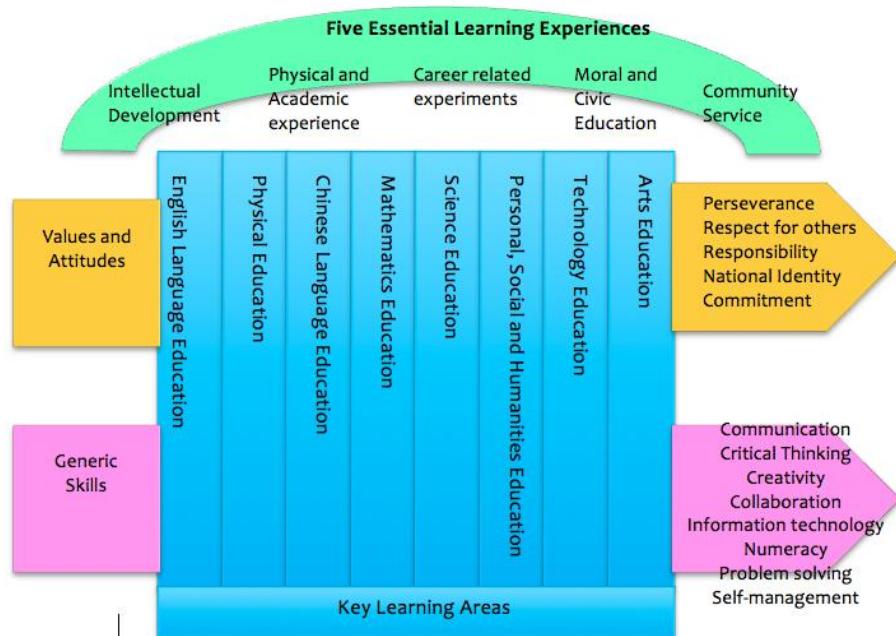
Educational jurisdictions in East Asia are examined first due to their success on the OECD tests.

*1.1 China.* China as represented by Shanghai and Hong Kong has continually topped the charts in international testing. Indeed, in 2015, OECD education director Andreas Schleicher commented that Shanghai pupils' performance in the basic skills is now so good that it is beyond comparison with any other country (Garner, 2015). It is important to note that these two cities, while useful to examine, are not necessarily representative of all parts of such a diverse country. Indeed, Shanghai and Hong Kong are both different in their approaches given their very different histories.

In both metropolises there is a forward thinking mindset with "a clear

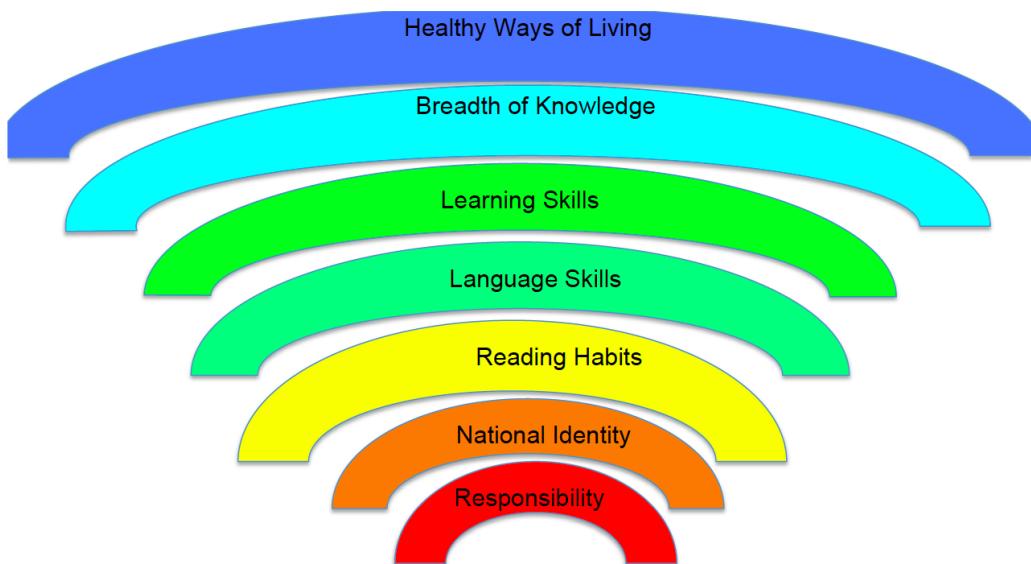
awareness that education needs to transform to keep pace with the rate of change in society – and not just current change, but a conscious effort has been made to take into account the future of society, the economy, and education” (Singmaster, n.d.). A brief look at their policies sheds some light on integrated approaches.

Hong Kong offered a unifying framework K to 12 that called for integration in 2001. “Both integrated learning experiences and discipline-based studies are valuable for students. Therefore, students should be given opportunities to study both” (Curriculum Development Council Hong Kong, 2001, p.26). This framework is presented as a graphic in Figure 1. In 2001, The Key Learning Areas (KLA) replaced subject areas. PSHE refers to Personal, Social and Humanities Education. Cutting across those key areas are generic skills. Hong Kong explicitly states that values and attitudes also cut across all subject areas.



**Figure 1: Hong Kong Unifying Framework (Adapted from CDC, Hong Kong, 2001)**  
[English Version]

The essence of this unifying framework is still evident in the 2014 document that has been released for primary grades (CDC Hong Kong, 2014). Today, there are seven interdisciplinary learning goals that cut across key learning areas and act as an umbrella (see Figure 2). Embedded in the seven learning goals are generic skills, values and attitudes.



**Figure 2: Key Learning Goals (Adapted from CDC, Hong Kong, 2014)**

Three Cross-Key Learning Areas offer opportunities to learn the generic skills. The Cross-Key Learning Areas are 1) general studies for primary, 2) liberal studies for senior secondary levels and 3) applied learning (CDC Hong Kong, 2014). For example, about 15% of a student's time is spent in the general studies of the primary program. Here students integrate across all subject areas what they know and can do with their values and attitudes. A goal is for students to be able to demonstrate critical and creative thinking, information management, numeracy and self-management.

Liberal studies (for senior secondary students) is a timetabled class with broad topics and no syllabus. The assessment is flexible. Students take charge of their own learning and use sources outside of textbooks for information. Liberal studies is considered for university entrance along with Chinese, English and mathematics. Students "develop high-order or critical thinking. This includes asking sensible questions; finding directions for analysis, synthesis and conceptualization; and proposing hypotheses or theories" (OECD, 2015, p. 103). This curriculum design sets a good example for grounding curriculum in student-directed learning. Teachers are encouraged to plan collaboratively, use technology to enhance learning and to implement hands-on learning, project-based approaches (CDC Hong Kong, 2014).

How do teachers approach teaching within this unifying framework? Four key tasks are identified in the curriculum. Moral and Civic Education is the core task that interconnects the other three tasks which include Interactive Technology, Reading to Learn and Project Learning (CDC Hong Kong, 2014). The intent of the Project Learning is be cross-curricular although teachers can choose how they wish to implement it. Project Learning in schools is a key element of the curriculum platform.

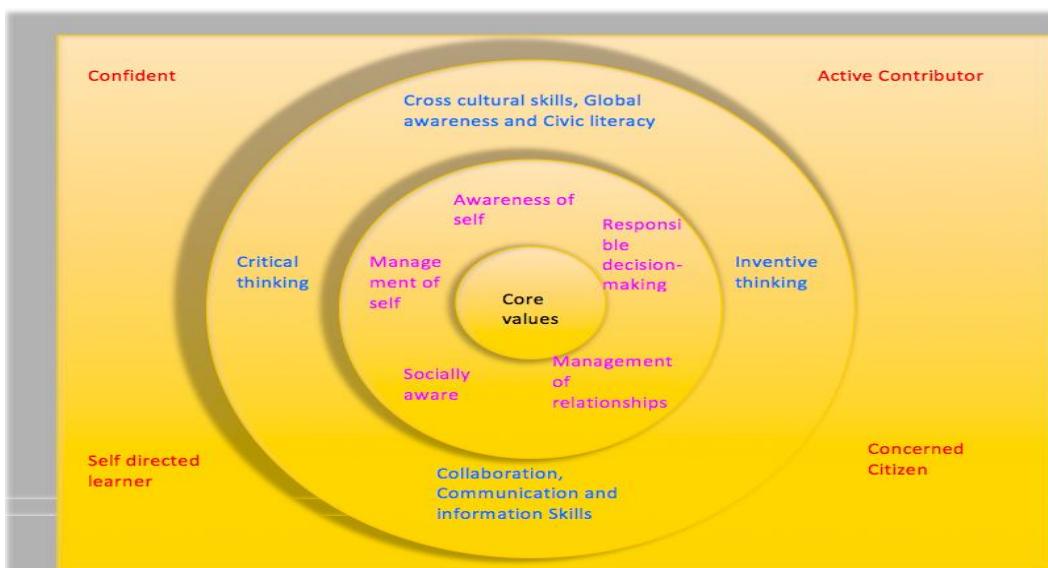
In 2014 Shanghai was the largest city in China with a population of over 24 million people. It has a different education system than Hong Kong and the rest

of China. In 1985 they shifted from an exam-based culture that focused on multiple-choice tests to one that emphasized applied knowledge and skills. It is the first Chinese city to achieve 100% enrolment in both primary and junior high school. This includes 6 million students from the migrant worker population. Additionally, all students in Shanghai have access to postsecondary education. In spite of this, exams still exist and students study long hours beyond the school day, often in cram schools. The reform, however, is still ongoing.

An OECD article describes the Shanghai landscape in 2010 (OECD 2010a). In 2008, to move away from examinations and memorization, all schools implemented eight learning domains which included areas previously marginalized such as arts and physical education. Schools were required to locally develop their curriculum. Students were able to take elective courses. Inquiry-based education was emphasized. As well, students could do independent courses where they explored research topics of personal interest. This innovation was intended to increase social well-being, critical and creative problem solving, and metacognition.

Teacher education and professional development shifted to accommodate this new vision. Shifts in pedagogy also were implemented. Popular slogans were “return class time to students” and “for every question there should be more than one answer”. Teachers would not lecture as often and were no longer the sole authority; they were encouraged to allow class time for student activities and not just have presentations and lectures.

**1.2 Singapore.** The progressive policies in Singapore can lead to different models of integration (Lam et al., 2013). Singapore offers a framework that illustrates the relationship of 21st Century competencies and student outcomes (See Figure 3).



**Figure 3: Framework for 21<sup>st</sup> Century Competencies and Student Outcomes (Adapted from Ministry of Education Singapore, n.d.a)**

The inner circle represents core values that underpin knowledge and skills and shape beliefs, attitudes and actions. The middle ring revolves around Social and Emotional Competencies. The outer ring represents the 21st Century competencies. Presumably all content knowledge is embedded in this framework. The Ministry of Education offers key outcomes for students at the end of school (See Table 1).

**Table 1: Key Outcomes for Education (Adapted from Ministry of Education Singapore, n.d.b)**

The key stage outcomes of education		
At the end of Primary students will be able to	At the end of secondary school students will be able to	At the end of post-secondary school students will be able to
Distinguish right from wrong	Demonstrate moral integrity	Display moral courage and stand up for what is right
Identify their strengths and areas for growth	Believe in their abilities and adapt to change	Be resilient in the face of adversity
Cooperate, share and care for others	Work in teams and show empathy	Collaborate across cultures and be socially responsible
Display lively curiosity	Be creative and demonstrate an inquiring mind	Be enterprising and innovative
Think and express themselves confidently	Appreciate diverse views and communicate effectively	Think critically and communicate persuasively
Take pride in their work	Take responsibility for their own learning	Pursue excellence purposefully
Demonstrate healthy habits and awareness of the arts	Enjoy physical activities and appreciate the arts	Live a healthy lifestyle and have aesthetic appreciation
Know and love Singapore	Believe in Singapore and know what is important for the country	Be a proud Singaporean who is aware of Singapore's position in the world.

Singapore has also developed courses that seem to lend themselves to an integrated approach. All secondary schools need to develop two new learning programs to complement their academic and student development by 2017 (Ministry of Education Singapore, n.d.b). These courses can revolve around student interests. A description follows:

The Applied Learning programme will serve to connect academic knowledge and skills with the real world. The emphasis is on the application of thinking skills, connecting knowledge across subject disciplines, stretching the imagination and applying these in authentic

settings in society and industries. The intent is to help students appreciate the relevance and value of what they are learning in the academic curriculum and develop stronger motivation and purpose to acquire knowledge and skills. The Applied Learning programme may be developed in areas such as business and entrepreneurship, design, engineering and robotics, environmental science and technology, health services, heritage, journalism and broadcasting, literary arts, simulation and modelling.

The Learning for Life programme will provide students with real-life experiential learning to develop their character and values, cultivate positive attitudes, self-expression and strengthen their people skills. This will be an integral aspect and a distinctive signature approach of Character and Citizenship Education (CCE). The intent is to instil in our students a sense of rootedness and responsibility for their community and fellow Singaporeans. Areas can include, among others, outdoor adventure learning, sports, student leadership development, uniformed groups, performing and visual arts. (Ministry of Education Singapore, 2013, p. 7).

Through the adoption of the Learning for Life and Applied Learning programs Singapore is committing itself to developing integrated curriculum that has authentic connections to the world outside of the schools. The Ministry of Education in Singapore hopes these initiatives will not only strengthen students' academic skills but also help develop their students' character, attitude, and self-expression skills in addition to strengthening their ties to their communities.

*1.3 Korea.* Korea has been interested in an integrated approach for many years. The Ministry supports increasing autonomy - curricula can be designed locally to fit the environment. Twenty-five percent of elementary, middle and secondary schools are connected to the creative management school program that promotes creativity and character education. The Ministry website features a nod to STEAM which is the integration of science, math, engineering, arts and technology (Ministry of Education Republic of Korea, n.d.)

Kwangsoon Jeong, a professor at the Korean National University of Education in personal communication (May 27, 2015) summarizes recent changes being made to the Korean curriculum. According to her:

We are working on revision of the national curriculum called 2015 revised curriculum. General competency and subject-specific competency will be included in the achievement standards. In elementary school, integrated subjects for the 1st and 2nd graders provided in the 2009 revised curriculum will be maintained in the 2015 version. Students study core subjects of Korean language arts, mathematics, ethics, wise living and pleasant living. There is time for independent activity and special activities. This policy lends itself to an integrated approach. Students in higher primary grades go to school longer and study core traditional subjects, but there is still time for independent and special activities. The basic instruction is supposed to instil in the students basic

life habits, problem-solving abilities, a love for the country and an appreciation of culture and tradition (<http://www.ncee.org/programs-affiliates/center-on-international-education-benchmarking/top-performing-countries/south-korea-overview/south-korea-instructional-systems/> ).

In middle school, which is three years in length, a "free semester system" is being implemented. The free semester is similar to the "Transitional Year" in Ireland. During one semester in the 2nd grade of junior high school, students will be study in 'general' subjects, such as Korean, English, math in the morning. In the afternoon, they will participate in club activities and career education. Given the reduction time for 'general subjects' and some recognition of advantages of this reduction, curriculum integration - especially interdisciplinary approaches - are starting to be implemented in junior high schools.

In high school, there will be common core subjects, such as integrated social study, and integrated science study curriculum. Integrated social study includes history, economics, and geography and integrated science study includes physics, chemistry, earth science and biology. The slogan of the 2015 revised curriculum is "integrated curriculum of social and natural science." The main purpose is for students to develop the basic competencies of humanistic imagination and scientific creativity.

*1.4 Japan.* In Japan, the education reform called "Zest for Living" was passed in the Fundamental Education Law in 2006. This reform institutionalized the Period for Integrated Studies that had been introduced in 2000 and implemented into all elementary schools in 2002. The aim of this course was to foster independent work and to increase creativity and problem solving abilities. Teachers had the autonomy to develop the course with the local context and students' interests in mind. Experiential learning was encouraged in nature, social life, field study, experiments, observations, field studies and observation. Issues to be explored were not discipline-based but were concepts such as environment, health and welfare and issues relevant to students.

MacDonald (2006) investigated the impact of integrated courses in Japan from the perspective of diversity. He discovered three different approaches to diversity. One approach was to study human rights where the goal of the teacher was to increase students' self-esteem, to strengthen their ability to deal with bullying and interpersonal aggression and to teach students about the rights of widely-defined minority groups (e.g. the homeless, the physically disabled population, etc.). A second approach was to look at cultural co-existence. The third approach was international education. MacDonald claims that students increased self-esteem, respect for the thought and feelings of others, learned attitudes of tolerance for others and could take a global perspective of themselves as global citizens and the responsibilities that entailed.

Still Japan is not immune to the accountability culture and concerns related to international testing (MacDonald, 2006). In 2011, the government increased the hours in subject-based curriculum and reduced the number in integrated

studies. Although there has been tension around the integrated studies programme, Japan has held on to its top rankings in the OECD tests.

Inquiry-based learning and project learning still exist in Japan, and overlap with integrated studies (personal correspondence, Yoshiharu Nakagawa, June 17, 2015). Inquiry is used in high school science. There are Super Science High Schools that are selected for advanced science studies. For example, Horikawa Senior Science School in Kyoto has Basic Inquiry and Integrated Inquiry. These sessions are done in association with Integrated Studies. In 2020 the government will include policy on active learning.

Interestingly all of these East Asian systems have the capacity to deliver an integrated curriculum at the national level. Singapore and Hong Kong offer a conceptual framework that clearly illustrates that generic skills and values are to be taught across all subject areas at every grade level. This is what is most important to know, be able to do and be. Singapore, Japan, Korea and Hong Kong also have general courses that specifically target skills and attitudes/values rather than a specific subject area. They also all do well on the OECD literacy, numeracy and science tests.

One might argue that it is the “hard work and no play” ethic in the East Asian countries that accounts for their success. But the stereotype does not always fit. A 2010 OECD report (OECD, 2010b) describes the Japanese education culture. Education is highly valued and there are high expectations of all students. All students can succeed and success is determined by hard work and not by innate intelligence. A classroom holds between 35 to 45 students and all classrooms are heterogeneous. No student is held back and students are not differentiated by ability groupings. Instead, the Japanese teacher focuses on engaging the students. Teachers thoughtfully plan their lessons and often begin with a problem that students help to solve. Mistakes are valued and learned from. The Japanese classroom can be noisy and seemingly unruly at times. Although Japanese students spend a long day in school, they have frequent breaks. Indeed, from our perspective, the OECD description seems like an ideal constructivist classroom anywhere in the world.

Going beyond the obstacles of standardized testing, Finland, Quebec, Canada and the IB schools offer instructive examples for a global perspective on curriculum integration.

## **2. Finland**

Finland has also done remarkably well in OECD testing, making it a focus of interest for other jurisdictions. How does Finland do it? Hancock (2011) reports for the *Smithsonian Magazine* that education is highly valued and teachers have a Masters degree and are respected and admired on an equal status with doctors and lawyers. Their attitudes are “whatever it takes” to help all students succeed. They prepare students how to learn rather than to take tests. There is no sorting into ability groups. Finland does not participate in large-scale national testing, although students do take one exit exam to determine their next step. There is

little homework and students spend a lot of time learning outside of class. Teachers value play as learning. The national curriculum has broad guidelines rather than a multitude of standards. There are lots of special education teachers who will help students in need. Almost all students enter Grade 9, even the most severely disabled ones. Contrary to stereotypes, Finland is not a homogeneous population but has many immigrants from Iraq, Russia, Somalia, Estonia and Ethiopia among other nations.

In 2015, Finland announced a new policy for 2016 implementation (Finnish National Board of Education, n.d.). Initial headlines announced that Finland had abandoned subject areas but in reality it had only reduced the time spent studying them explicitly. Key pieces in Finland's reform include the following:

- emphasis on seven generic competencies that cut across subject areas
- inclusion of the seven competencies in learning objectives in subject areas
- assessment of competencies in the subject areas
- multi-disciplinary, phenomenon- and project-based studies (at least one a year)
- topics that reflect student interest
- a collaborative atmosphere, student autonomy, joy of learning, school as a learning community.
- teacher autonomy to decide how to implement this new vision (Halinen, 2015)

Halinen (2015) claims that teachers can immediately implement this new curriculum as they already have the basics of it in place.

### *3. Quebec, Canada*

Quebec, Canada has its own policy of education since there is no national policy of education in Canada. Today in every province except Quebec, most curriculum documents encourage some form of integration but there is not a specific policy around this (Drake, Reid, & Kolohon, 2014). The policy in Quebec, on the other hand, favours integrated curriculum explicitly. The philosophy undergirding this curriculum is constructivist. The learning is to be active, hands-on, connected to the real world, with an emphasis on collaborative learning. There is a well-thought out unifying framework that is applicable to both primary and secondary schools (and to both French speaking and English speaking schools). These broad areas of learning together with cross-curricular competencies are the frame of reference for educational activities K to 12.

The broad areas that cut across subject areas are Health and Well-Being, Personal and Career Planning, Environmental Awareness and Consumer Rights and Responsibilities, Media Literacy and Citizenship and Community Life (Quebec Ministere de l'Education, 2004).

The competencies are complex, broad-based and progressive in nature. Nine cross-curricular competencies are organized into 4 categories:

- Intellectual: Uses information, solves problems, exercise critical judgement, uses creativity
  - Methodological: Adopts effective work methods, uses information and communications technology
  - Personal and Social: Achieves potential, cooperates with others.
  - Communications: Communicates appropriately
- (Quebec Ministere de l'Education, 2004)

The five subject areas (languages, math, science and technology, social sciences, arts education and personal development) are each accompanied with a chart that shows how the different subjects within the subject areas connect (Quebec Ministere de l'Education, 2004). As well, there is 25% of the time for teachers to develop course material that is local in nature and connects to student interests (shades of the East Asian countries). Each competency is richly defined and examples are given for what it looks like developmentally and suggestions are offered for how to assess it. In secondary school, students are required to complete a final integrating project.

From an accountability standpoint, there are provincial examinations in French, English, physical science and history twice in secondary education. Students must pass both English and French to graduate. Provincial examinations account for 50% of the students' final grade (Volante, 2007).

Over the years, participating provinces in Canada have done well in PISA testing. In 2012, Quebec's math scores ranked just below the highest-ranking East Asian countries and above the other Canadian provinces whose scores fell (except Saskatchewan who maintained its ranking). In reading, Canadians did well including Quebec. Only in science was Quebec struggling somewhat. In a Pan Canadian assessment program of 32,000 Grade 8 students, Quebec students were number one in math, fell in the mid-range for science and were second in language (Hammer & Alphonso, 2014).

In explaining why Quebec did so well in math, researchers say it is because of intensive teacher training in math and a curriculum that balances both drills and problem solving (Hammer & Alphonso, 2014). But little has been said about whether this province did so well because of an integrated approach to curriculum.

#### ***4. The International Baccalaureate (IB) Schools***

The IB schools offer an interesting insight into integrated learning. More than 4000 schools around the world have chosen to embrace this model of education for students aged three to 19. These schools are located in different jurisdictions and often need to honour the standards and expectations of the country they are in while following the IB framework. Thus, curriculum design can become a complicated process that seems to be clarified by the framework itself.

The IB is a unique approach focusing on academic rigour, well-trained teachers and motivated students (International Baccalaureate Organization [IBO], 2014).

These schools are interested in developing “inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect” (IBO, 2009).

IB schools may be public or private, but are guided by the same unifying framework. That framework includes integrated approaches to learning – especially at the primary level where transdisciplinary learning is policy. The IB Learner Profile cuts across all subject areas at all grades. This profile embodies the kind of person the IB student should be. Generic skills also cut across subject areas: thinking, social, communication, self-management and research skills are emphasized. As well, attitudes such as appreciation, commitment, confidence, cooperation, and creativity are considered essential. This framework of skills and values cutting across disciplines at all grade levels is similar to the Hong Kong, Singapore and Quebec frameworks.

The IB programmes go one step further and focus on conceptual learning in content areas. Students learn transdisciplinary concepts and central ideas that go beyond the scope of the disciplines and reflect the real world. Finally, the schools are concerned with action. In the PYP, for example, “successful inquiry will lead to responsible action, initiated by the student as a result of the learning process” (IBO, 2009, p.25). This action can be service learning and can occur both in and outside of school. In this way the student demonstrates the attributes of the IB Learner Profile.

Various studies indicate that IB students perform very well academically in relation to non-IB students. A study undertaken by Tan and Bibby (2010) compared the performance on the International Schools’ Assessment (ISA) of 23,575 IB students to 14,317 non-IB students across the world. The study found that generally, IB students performed better than their non-IB peers on the ISA in terms of numeracy and traditional literacy at most grade levels. In a follow-up study, Tan and Bibby’s analysis (2012) of IB students’ performance on the ISA came up with similar results. In a case study set in Texas, USA (Sillisano et al., 2010), 43 IB schools were matched to non-IB schools in order to compare performance on standardized state reading and math tests. The study concluded that IB schools performed as well as their comparison schools on the Texas Assessment of Knowledge and Skills exam

##### *5. Further examples for a global perspective*

Two aspects stand out in jurisdictions that were successful in OECD testing and the IB schools. One aspect is the presence of a unifying framework. Interdisciplinary outcomes/competencies that are skill and value-based cut across the content areas and are made explicit. The second aspect is that time is specifically allocated for locally-based curriculum; the content of this curriculum is left to the discretion of the teacher and is intended to connect to students’ interests. In some countries this time is designated to work toward developing students’ generic competencies. These common factors seem to be success factors. We wonder how essential these factors are to the successful negotiation of accountability and integrated approaches. We look at Ontario

and United States for further illumination.

*5.1 United States.* In contrast to the systems already presented, the United States has not excelled in the international tests consistently, falling midway in the ranks most years. The United States recently adopted a Common Core State Standards (CCSS) curriculum in 43 states and 4 territories (Common Core State Standards Initiative, 2016). This adoption has not been without controversy and there are still many issues around interpretation and evaluation. It would be hard to describe the Common Core State Standards as a unifying framework for this large country at this time. It includes only traditional literacy and numeracy learning goals that students should attain by the end of each grade.

Some American educators, however, are seeing the promise of literacy across the curriculum and more integrated approaches (see, for example, Drake, 2012). Beginning in grade 6, the Common Core State Standards literacy standards allow teachers of English language arts, technical subjects, science, and history/social studies to use their content area for teaching reading, writing, speaking, listening, and language in their respective fields, which some teachers are experimenting with.

Although it is rarely policy, there are many examples of integrated curriculum and project-based learning dotted across the country. Much of the literature on the need for curriculum integration and for teaching 21st Century skills originated in the United States. The Partnership for 21st Century Skills ([www.P21.org](http://www.P21.org)) and other organizations like it encourage the same types of generic skills, or 21st Century competencies, as the East Asian countries, Finland and the IB schools described above.

*5.2 Ontario, Canada.* Ontario is different from the United States. It has done well in OECD testing even though its math scores have fallen in the last PISA testing. Here, there is a long history of government supported integrated approaches that have come in and out of favour (Clausen & Drake, 2010). The latest iteration was in 1993 with *The Common Curriculum: Grades 1-9* (Ontario Ministry of Education and Training, 1993a). This working document introduced curriculum integration and out-come based education to the province. It emphasized accountability, equity and excellence for students. The curriculum offered 10 essential learning outcomes across subjects that students needed to master by the end of Grade 9. The curriculum integrated the traditional subjects into four core areas - Language; The Arts; Mathematics, Science, and Technology; and Self and Society. Documents outlined outcomes that students were expected to attain by Grades 3 and 6 in each core area. A more polished version of this curriculum was released two years later (Ontario Ministry of Education and Training, 1995).

In looking at this venture in the light of today's curriculum, the Common Curriculum had much to commend it and may contain hints for successful policies in 2016 and beyond. The 10 Essential Learning Goals acted as a unifying framework for all subject areas. The goals included a focus on literacy, numeracy and scientific literacy as well as technological, historical and

geographic literacy. Students were also to "interact effectively with others, demonstrate respect for human rights and be motivated to fulfil the responsibilities of citizens of in a democratic society" and "exercise aesthetic judgement" and "be motivated to build healthy lifestyles and relationships" (Ontario Ministry of Education and Training, 1993a, p. 11). There were general principles of teaching, learning and assessment – particularly performance assessment. At the same time there was government support for this curriculum implementation. A resource document, *Towards an Integrated Curriculum* (Ontario Ministry of Education and Training, 1993b) was released alongside the primary curriculum documents. This document offered a continuum for integration perspectives and tried to deal with issues around definition. There was a lot of provincially supported professional development. At this time the EQAO was established- this organization would administer large-scale testing at grade 3, 6, 9 and 10 to determine student success and system accountability.

This curriculum was a radical departure from the recent past in Ontario. Unfortunately, just as educators were beginning to understand how to implement this program, the government of the day, the New Democratic Party (NDP), lost to the Conservatives who quickly replaced the policies with traditional ones. Outcomes were gone, replaced by expectations and large-scale testing became mandated. There was no unifying framework and learning was largely discipline-based. Ontario has worked from this premise since this time.

One document still remains from the Common Curriculum era and is currently being revised. *The Ontario Curriculum Interdisciplinary Grades 11 and 12* (Ontario Ministry of Education, 2002) outlines how to create interdisciplinary courses by combining credits for different subject areas. What subjects to integrate is up to the creativity of the teachers involved. There are many innovative interdisciplinary courses across the province and each one is unique. Some teachers integrate four courses and students spend all day for a semester in that course. What ties the courses together is a set of interdisciplinary expectations that all students must meet. They act as a unifying framework of sorts. The expectations revolve around interdisciplinary foundations, research and evaluation.

### **Conclusions**

Admittedly this analysis is brief and a snapshot in time. It is difficult, if not impossible, to know how policy is being enacted in real classrooms. The culture in these examples is also an important part that we haven't explored. The information here belies the myth that a student who succeeds in math, science and language studies must be in a strictly, discipline-based program with rote learning exercises.

There is a clear direction/pattern in policy in these successful examples that may be considered:

- 1) Develop a unifying framework that addresses what is important for students to know, do and be that cuts across all subjects for all

grades. This provides a big picture and identifies what the essential goals of the curriculum are.

- 2) Provide a period of time that is not subject-based but is devoted to inquiry and building generic skills and cultural values.
- 3) Consider adopting constructivist philosophy, fewer exams, inquiry learning, project-based learning and integrating subjects to teach 21<sup>st</sup> Century competencies and generic values and attitudes.

After reviewing these curricula it seems safe to conjecture that students who excel in math, language and science in OECD testing are not effected negatively by ventures into integrated programming. In fact, one might surmise that they do better because of these programs.

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