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**International Study on School Autonomy, Curriculum Reform, and 21st Century Skills**


**Summary, Synthesis, and Concluding Remarks on Six Education System Reports**


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This document presents a synthesis of reports by:

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<u>Israel</u> – To be submitted in February

## Introduction

In early 2014, the Israeli Ministry of Education invited researchers from seven different education systems to carry out *"A comparative study of school autonomy (school-based management) and curriculum reform in 21$^{st}$ Century Skills".*

Researchers from six countries met in Jerusalem in May 2014 to discuss this collaborative effort. It was agreed to compile a comprehensive review of the seven[1] education systems' reforms in school autonomy and the 21$^{st}$ Century Skills curriculum.

In late October / mid-November 2014, the six partners submitted their reports (the Israeli report will following in March). The present document provides an analysis and synthesis of three main issues: (1) policy on school autonomy in the six systems; (2) curriculum reform on 21$^{st}$ century skills in each system, and (3) a summary of insights from the six studies and the common challenges faced by the seven systems. These summaries will provide a foundation for the second phase of the study—whose goal is to develop a joint research tool that will take our study further and deeper into the nature and extent of school autonomy and the characteristics of curriculum reform for 21st Century Skills of all the participating systems.

## Part 1: School Autonomy

Since its introduction roughly three decades ago, school based management has evolved surely but steadily from a vague notion about the devolution of centralized power to schools to a much clearer policy. The evolution of this reform may be divided into two main periods:

### *Early period: The initial conceptualization of School Autonomy*

A shift took place around the world, mainly in the 1970s and 1980s, as a reaction to the glaring faults of the centralized approach to education and a clear vision of school autonomy with clear policies for achieving it began to emerge. This section analyzes the early phases of this process, which changed the traditional construction of education management and increased school autonomy by shifting power to the

[1] Including Israel

schools and away from central government, the local authorities, and voluntarily organizations.

## Alberta

In the late 1970s, a neo-liberal ideology of competition along with greater freedom for parents to choose their child's school led to a transformation in Canada's education. This ushered in greater decision-making freedom for schools and the start of the march towards SBM. It was assumed that equity, efficiency, and liberty could only be achieved through freedom of choice, which was predicated on greater self-determination for schools (Newton and Da Costa p.1).

The Canadian public school system was traditionally controlled by centralized management in its ten provinces and three territories, which each had its own curriculum. However, alongside considerable variance between the provinces and territories in terms of requirements, certification, curricula, educational policy, legislation, and teacher training, there was also significant standardization of textbooks, teacher training, and classroom organization. Children were seen as resources to be molded into the desired form with no recognition of differences between individual potential or needs.

The province of Alberta was an extreme case of strong centralized decision-making, with little flexibility and very little consideration for the individual school's needs. Schools controlled only 2% of their budget while the central authorities in Edmonton controlled the rest. This was why Canada's first initiative to decentralize budgetary decision-making was in the school district of Alberta. The province's decision-making pyramid was overturned when "Michal Strembitsky initiated a pilot project in 1977 in which seven schools were given decision making control over 80% of their budget expenditures" (Newton and Da Costa, p.2). Strembitsky's pilot marked the end of an era for Alberta and the introduction of a new conception in educational management, as the next period of the review will show.

## Australia

In Australia in 1973, the Karmel Report proposed a reduction in centralized control over schools while shifting responsibility "as far as possible upon the people involved in the actual task of schooling" (Caldwell p.3). The report explained very clearly that people are more effective when entrusted with decisions.

The devolution of power from the central authorities followed criticism, starting in the 1950s, regarding the level of governmental bureaucracy. Caldwell maintains that the state "should not presume to interfere with the details of their [schools] operations" (p.4) and rather focus on national planning and resource distribution. The financial constraints of the 1970s were an additional factor which encouraged consideration of power devolution in education. The emergence of the "restructuring movement" in the 1980s, which became a common trend in Australia and other education systems, reinforced decentralization ideas and practices.

## England

A 1976 speech by British Prime Minister Edward Callaghan accused British education of operating in a "secret garden". Callaghan argued that to raise education standards, the system had to be open to public scrutiny through a combination of increased school autonomy and accountability. The 1988 Education Reform Act devolved decision-making regarding resources and setting school priorities from Local Authorities to voluntary school governing bodies.

The 1988 Act emplaced the architecture for a national system of accountability by defining a national curriculum for k-10 and age phases (Key Stages) for all pupils in the school system. For the first time in British education, schools had to teach certain subjects and syllabuses. National curriculum assessment was also introduced and is applied today at the end of Key Stage 1, at the age of 7, Key Stage 2, at the age of 11, and Key Stage 4 at 16. As for the national curriculum, this was structured into discrete subjects and organized as three "Core" subjects (Mathematics, English and Science) plus various "foundation" subjects, including History, Geography, and Art. The 1988 Act led to the establishment of the Office for Standards in Education (Ofsted) in 1991 which was given responsibility for school inspection in England. This enabled government ministers to find ways to subvert local education authority influence and revert back from a "national system locally administered" to a more centralized system with worryingly few checks and balances (Greany and Waterhouse p.3).

## Finland

The 1970s and 1980s the system was highly centralized and even the "smallest day-today management decisions were made by the Finnish National Board of Education" (Saarivirta p. 1). Before 1978, schools did not even have a school principal. A teacher was put in charge of the school by an order of the National Board of

Education. The principal's role was only defined in 1978 and became better defined and different from the other teachers. Still, for the rest of the twentieth-century, the principal's role was still largely about taking care of the routine tasks assigned by the Finnish National Board of Education (Saarivirta, p. 2). Finland's Education Reform in 1999 ushered in a new era and the leadership aspect of the principal's role began to take shape.

## Hong Kong

Hong Kong's centralized system has a long history that can be traced back to 1983 when a grant-in-aid scheme for missionary schools was introduced by the government to subsidize their operations (Cheng et al. p.3). The education system's massive expansion during the 1970s and 1980s made school management increasingly challenging. Cheng at al. explain that it was "hard to maintain the quality of a school education system relying on an outdated legal, funding and management framework originally meant for a much smaller number of schools" particularly following the growth in number of voluntary bodies, charities and religious bodies (SSBs) grew. (p.3). In the late 1980s, the rapid expansion of the education system also stretched the human resources and management structure, thus weakening education quality control. As a result, the notion of shifting power from central organizations to the school level began to evolve. According to Cheng et al., weaknesses during the expansion period in the 1970s and 1980s were: (1) Inadequate management structures; (2) Ill-defined roles and responsibilities; (3) Lack of performance measures; (4) Over-emphasis on managerial control rather than establishing a framework for responsibility and accountability, and (5) Overly rigid financial and cost controls. The response to these problems ushered the next stage of the system's evolution. Since the early 1990s, power has gradual shifted towards the schools.

## Singapore

During the 1960s to early 1990s, the Singapore education system was highly centralized, and "followed a centrally instructed curriculum and teaching practices, administered by the Ministry of Education" (Hung et al. p.1). The system has always been the main vehicle for serving and supporting political agendas and meeting economic targets. The approach to achieving the government's primary objective of a unified national system was rigidly prescriptive and "efficiency-driven". The declared goal of Singapore's education policy was to "provide a stock of basic education, skills and attitudes required for industrialization" (Hung et al. p.5) that would meet the need

of the economy and encourage social cohesion. That vision led to a centralized, standardized, top-down system in Singapore schools, which was characterized by "rote learning" (p.5).

In 1979, a ministerial report recommended "streaming" of students into ability groups. In other words, people with similar abilities and types of ability were "given the appropriate curriculum, pace and method of teaching…to reduce wastage, maximize everyone's talent, so that every person counts" (p.5).  The Curriculum Development Institute, established in 1980, intensified centralized control of school life.  All classes in a grade level and subject were allocated exactly the same resources. This tight rein enabled "standardization of curriculum materials…[and] uniformity and efficiencies of education in Singapore school system" (p.6).

Responding to Singapore's high level of standardization, erosion of individuality, and worrying drop-out rate, some degree of school autonomy was introduced in an attempt to strengthen the system's weaknesses, as seen in the next period of the review.


## *Second Period: Towards more explicit school autonomy*

### Alberta

The school autonomy pilot scheme was a change in the Alberta's approach to education management.. The 1978 pilot scheme was so successful that many schools switched to SBM. Newton and Da Costa describe two phases in SBM development in Canada: First, a significant portion of the education budget was transferred to schools as a block grant; second, decisions regarding the best way to use that budget to meet learners' needs were made at the school level. In Alberta, SBM tends to emphasize efficiency and freedom in student learning and choice. The shift to SBM meant reorganizing functions at the Central Office of the Ministry of Education and districts in order to give schools autonomy in decisions regarding funding. These decisions related to funding for the development of professional and support staff, funding for equipment, and funding for other support services.

The goal of Alberta's SBM vision was to enhance student learning and the job satisfaction of teachers, school-based leaders, and support staff (p.3). It also sought to encourage meaningful participation and engagement of parents and other community members.

SBM is strongly linked to school of choice. The SBM reform removed existing obstacles and allowed students to move to schools which offered the best programming for their learning needs. Charter schools (namely schools run by non-profit organizations) were included in this pool.

## Australia

During the 1990s, one important change in the state of Victoria in Australia created a turning point in the movement towards SBM. This change meant that 90% of Victoria's annual recurring budget was devolved to schools for local decision-making. Principals were empowered to hire staff and decide school priorities school councils consisting of parents and other members of the community.

The objectives of this reform, which have since been adopted in several Australian states and territories, included: Encouraging professional development of school staff; enhancing student learning outcomes; allowing principals to become the real leader in their school; establishing guidelines which allowed schools to develop their own programs to meet individual student needs; recognizing teachers as real professionals with freedom to exercise their professional skills and judgments in the classroom; making schools accountable to the community for their progress and student achievements; encouraging parents to participate directly in decisions affecting their child's education (Caldwell, p.7).

## England

England's 1988 Education Act marked a radical ideological shift in terms of reducing the power of the central authorities and giving parents' choice in their children's schools outside  traditional catchment areas. The Education Act created competition between schools, increased school autonomy and decision-making and established rules governing school funding and accountability. As noted above, three years later the Office for Standards in Education (Ofsted) was introduced as an inspection framework.  The new inspection regime involved using pupil performance to measure school and school leadership effectiveness. Annual pupil performance data was published nationally and then translated into a league table by commentators and the media, providing a school rating based on summative pupil performance data (Greany and Waterhouse p.14).

The importance of effective school leadership in autonomous schools was recognized at the policy level and led to the establishment of the National College for School Leadership in 2000 in order to help maximize the benefits of school autonomy.

The idea of the "self-improving school" represents another expression (and more precise definition) of school autonomy.  Over time, the conception of a "self-improving system" became the more relevant and actual term used for training head teachers and school leaders. Greany (2014) lists four main aims of the self-improving system:

- Responsibility of teachers and schools for their own improvement

- Ability of teachers and schools to learn from each other and from research in order to spread effective practice.

- The best schools and leaders must try to share their ideas and practices with other schools so that schools improve.

- Minimal government support and intervention.

The self-improving system can thus be seen as an attempt to take the 1988 Education Reform Act to its natural conclusion by making schools wholly autonomous and allowing the quasi-market to function more effectively. The quasi-market in education aims to replace competition between schools with collaboration. Greany and Waterhouse explain that a "self-improving system does appear to differ from previous quasi-market policies through its emphasis on school networks, collaboration and 'system leadership'" (Greany and Waterhouse, p.7). The aim of the self-improving system is to establish solidarity-through-collaboration between more able school leaders and less able school leaders in an effort to improve the capability and self-efficacy of the less successful schools.

Greany and Waterhouse focused on two periods in the pedagogical development of the 1988 Education Act. They believe that the 1988 Act's curriculum review policy encouraged schools to focus excessively on passing exams instead of helping students become successful learners, a problem which we elaborate on in the next section.

### Finland
In terms of timing and practices, the Finnish National Board of Education introduced a similar process in 1999, when it launched a school autonomy reform. The resulting shift recognized principals as the real leaders of schools and authorized them to

manage the daily practices of school life as they saw fit. Principals were also given the pedagogical leadership of their school. In other words, they had the task of motivating and supporting teachers professionally. Required principals' skills included: identifying teachers' emotions and reflecting on them with teachers and supporting teachers' professional development. This shift reflected a vision of school leadership which was directed towards leading staff pedagogically rather than simply managing them as in the traditional way, while stressing the value of shared leadership (Saarivirta p.2). Finland's **s**chool principals feel that they have freedom in their daily tasks and much more financial autonomy than before and "operate in a totally different world now than decades ago" (p.3).

Although Finland has a "national curriculum," devised by the National Board of Education, and although each municipality (there are about 300) is required to create their own school curriculum, Finnish schools have freedom in their emphasis on different subjects including mathematics and languages studies. Principals and teachers now determine how the curriculum subjects are scheduled or organized and how many the teaching hours they receive; the national and municipal curriculum "do not say anything about how to teach or what teaching methods should be used" (p.4). This reflects the popular current view which is more customer-oriented and focuses on individual and local needs. Teachers are hired by the municipal board of education although school principals usually discuss the selection with the board prior to a decision.

### Hong Kong

In 1991, recognizing the global trend towards school autonomy, the Hong Kong government developed a program to relax tight government controls and devolve a certain amount of authority to state-aided primary and secondary schools. The School Management Initiative (SMI) included accountability measures and laid down the cornerstone for six consecutive steps towards greater school autonomy. Besides the school accountability framework, Hong Kong also gave schools increased control of their finances.

From 1992-1994, a pilot scheme in which 21 aided schools participated revealed that only about half the teachers increased their involvement in their school's administration and felt positively about change. Mainly, they were very skeptical about the "feasibility of improving the classroom teaching quality through changes in school management" (Cheng et al. p. 4). In 1997, Education Commission Report No.

7 concluded that all aided schools should implement SBM. Unlike the 1991 School Management Initiative (SMI), in which participation was not compulsory, the 1997 Report (ECR7) required all local government and subsidized schools to implement SBM in line with the School Management Initiative. The Education Commission Report roadmap stressed the twin goals of school autonomy and an accountability framework, calling for:

1. Formal procedures to establish school goals and evaluate progress towards them;
2. School development plans, profiles, and budgets, and methods for evaluating progress;
3. Written constitution for School Management Committees;
4. Participation of teachers, parents, and alumni in school management, development, planning, evaluation, and decision-making, and
5. Formal procedures and resources for staff appraisal and development according to teacher needs.

SBM reform was followed by curriculum reform in 2001 which gave schools "flexibility to design their school-based curricula as long as the requirements such as choice of options, contents. Flexible use of time and life-wide learning opportunities…" (p.8). SBM at the school level meant increased participation from other stakeholders and more transparent school governance. Schools no longer answered to a central authority but to the public, and were accountable to the school community and its stakeholders. In 2000, SBM implementation was introduced into state-aided schools. In 2004 it became mandatory for all schools to have an Incorporated Management Committee. A basic law was also enacted in 2004, which ruled, "Educational institutions of all kinds may retain their autonomy and enjoy academic freedom" (Cheng et al. P. 7). In 2009, a further step was taken towards increasing school flexibility and autonomy in managing their own work and resources in response to student needs, and towards increased accountability in the spending of public funds. Cheng et al. think that although in principle school principals, teachers, and supervisors have accepted the idea of SBM, there is a lack of research data and examples of practices for improvement learning and teaching outcomes.

**Singapore**

Towards the end of the 1990s, Singapore's prime minister relaxed centralized control over Singapore's rigid curriculum. Policy makers agreed that a radical transformation in education was vital for a culture that would enable society to compete in a global world. They argued that greater school-based creativity and autonomy would make Singapore society more creative. They sought to empower principals and teachers by providing them with leadership skills that would help them foster student innovation and creativity.

The understanding that creativity and innovation were prized by the world's knowledge-based economy encouraged the government to relax centralized pressure and allow greater freedom to school decisions. The government sought to stimulate educational innovation and "enable schools to respond more promptly to the needs and aspiration of pupils and parents" (Hung et al. p.7).

Since the 1980s pilot scheme, Singapore has experienced an incremental process towards school autonomy. Another sphere that underwent liberalization en route to decentralization was curriculum planning. In 1996, the Singapore government tasked publishers with the development and publication of textbooks. In addition, the Ministry of Education rewarded schools that proved academically successful by granting them greater administrative autonomy to develop an enriched curriculum with "program design pedagogy and school-based assessment" (p.7).

Today, Singapore schools are pedagogically autonomous but generally have only limited autonomy over how they spend their resources.

The system has been described as a closed network whose three main arms—the Ministry of Education, the National Institute of Education, and schools—are jointly responsible and accountable for education together with the local school leadership and work towards a holistic goal.


Singapore's answer to the new millennium's needs were two important schemes for school empowerment—*Thinking Schools, Learning Nation* (TSLN) (launched 1997), and *Teach Less, Learn More* (TLLM) (launched 2005). Empowerment was achieved by freeing the national curriculum to respond to individual students' talents and abilities through customization. A new assessment system, introduced to 18 Integrated Programme (IP) schools also tried to move away from the standard, centrally-administered high-stakes examinations by de-emphasizing the use of traditional methods such as GCE "O" Level examination to measure student

performance. These schools offer an enriched curriculum that addresses the differentiated needs of learners as well as nurture learners to solve complex problems. Such school-based initiatives are meant to develop critical, creative and self-directed learners. Depending on the context of the IP schools, these integrated programmes can lead to the GCE "A" level exams or in some cases, alternative assessments such as the International Baccalaureate diploma. [Text continues. It was hoped by educational planners that offering schools greater autonomy would enable them to equip students with innovative capabilities and arm them with necessary creative thinking skills for the future. For its part, the *Teach Less, Learn More* program tried to introduce a similar pedagogic openness and flexibility within the teaching and learning environment by encouraging students to understand material rather than simply learning for tests. It has accomplished this by "shifting the focus from quantity to quality" (p. 10) and from project-based learning to self-directed learning.

In their report, Hung et al. conclude that finally, despite tremendous efforts and a national initiative aimed at shifting power to schools and empowering the teaching profession, the government sees education as too important for society to be left entirely to schools. Singapore's present control system which has emerged can best be described as a "centralised-decentralisation" system.

## *Benefits of school autonomy*

### Alberta

The main motive for introducing SBM in Alberta was to improve student learning outcomes and enhance teacher job satisfaction. Another added value was meaningful participation and engagement of parents and the local business community in school life. This included involvement in school decision-making in various facets of education and supporting school-based initiatives. Newton and Da Costa point out that the high ranking of Alberta schools in international student achievement measures indicates the success of the SBM reform. Yet despite this positive indicator, there are still some critics: (1) the policy's competitive nature and increased competition between schools causes principals to waste time and effort on public relations instead of concentrating on instructional leadership; (2) Parental choice is another key feature of SMB. However, parental choice has led to homogeneity of social classes in certain schools since not all parents are capable of

making an informed choice and some parents may be prevented from sending their child to a preferred school in another neighborhood for economic reasons. Schools with a preponderance of middle and upper-middle class students then tend to perform better on different standardized measures than schools with students from educationally impoverished families, (3) Another critical observation is that SBM is not driven by efficiency and choice in sparsely populated areas for the simple reason that choice is not possible (only one school).

## Australia

Since Self-Managing School (SMS) is becoming the norm in Australia, the term SMS is rarely used. In the 1990s, however, after several major reforms, the majority of principals in Victoria who were questioned in annual surveys which were conducted over a period of five years said that they would not wish to return to a more centralized arrangement.

The final report on the reform in Victoria in 1998 provided a synthesis of the findings and put forward an explanatory model which describes the direct and indirect impact of the factors influencing principal perceptions of curriculum and learning benefits. The report concluded that "decentralization of decision-making in planning and resource allocation does not of and in itself result in improved learning for students. There is no direct cause-and-effect link between the two. What the model does suggest, however, is that if the linkages are made in an appropriate way, then an indirect effect is realized through action in the personnel and professional domain and also confidence in the efficacy of the reform" (Caldwell, p.5).

Regarding school autonomy initiatives, Caldwell found that the long-term impact of school autonomy on student outcomes depends on how local power is used and the capacities of principals and other leaders. One of the three factors directly linked to curriculum and learning enhancement is the way local power affects school staffing and personnel and professional benefits and principal capacity to select staff (p.6).

**England**

Greany and Waterhouse quote international research findings such as PISA 2009, which show that UK schools are among the most autonomous in the world (OECD, 2011). They report that although international research on the impact of increased school autonomy shows that it only leads to a small gain in performance, the most recent OECD review (TALIS, 2014) provides different evidence: "A general reading of the research seems to show that greater levels of autonomy for schools would…improve learning outcomes" (p. 8). Greany and Waterhouse comment that on closer inspection the impact of school autonomy on student achievement does seem to vary across countries (p.8).

Greany and Waterhouse touched on the variances in school autonomy implementation.  They noted that in some systems school leaders may have formal decision-making rights for hiring and firing staff but in practice they do not have the freedom to do this. On the other hand a survey of Academy School leaders showed that they do not fully capitalize on the freedoms they have over the curriculum (p.16).

According to Greany and Waterhouse, strength lies in combining school autonomy with accountability; they see the challenge as designing accountability systems that incentivize appropriate improvement efforts by schools. They maintain that the downside of a punitive accountability regime is that "it can flatten the very freedom and autonomy that governments want to encourage: schools can teach to the test; they can look up to second guess what they think the inspectorate wants to see (rather than at the evidence base); and they can game the system by changing the socio-economic nature of their intake or by massaging their exam performance through various subtle tricks" (p.9).

Their report highlights two important factors which led to successful school improvement in England: 1) school-to-school support which involves collaboration between two or more schools aimed at improving pupil outcomes, where a stronger school supports a less successful schools (pp. 9-10) and (2) the capacity of school leaders to initiate and sustain improvement by creating cultures of collaboration and innovation. The report stresses that innovative leaders are typically those who can initiate and drive bottom-up changes, especially after 25 years of top-down imposed change. This type of leader might be a brave maverick or even a risk-taker willing to take action against the system.

**Finland**

Changing the principal's role in terms of pedagogical and shared leadership is one of the most important factors in Finland's school reform today. In Finnish schools, the trend is towards improving teachers' pedagogical leadership. This simply means motivating and supporting teachers instead of the more traditional top-down approach. Saarivirta also explained that unlike other countries, Finland's school system is not publicly evaluated by external or central measures, giving principals increased autonomy to lead professional development in their schools' aimed at school improvement and better learning results (Lahtero, 2011 and Kunnary in Saarivirta, p.3).

**Hong Kong**

According to Cheung and Cheng, teachers are "more flexible, adaptable and effective in performing their work" as a result of SBM (Cheng et al. p.9). However, they found that whereas individual self-management strengths are positively linked to teacher individual performance in areas such as: job commitment, job challenge, job meaning, self-report of effort, and job responsibility, they are not necessarily linked positively with school performance and group performance (p.9).

Teacher participation in decision-making may offer increased opportunities for cooperative learning and development and empower and motivate teachers' professional autonomy. This is because participation in decision-making fulfills teachers' innate psychological needs and enhances their functional ability in their professional growth and development. However, research evidence regarding SBM shows that most principals tend to adopt a consultative style rather than a collegial style and emphasize managerial over instructional roles. Cheung and Cheng found that significant longitudinal growth in academic improvement only occurs when restructuring motivates teachers by offering them greater curriculum control and learning opportunities (p.9). They note that while autonomy may exist at different levels in the school, its strongest positive effect is on the department or team level. In Hong Kong, a flattened leadership pattern as a result of greater teacher participation and/or teacher leadership provided more room for negotiation among members of the school curriculum development team and greater ability to generate and implement innovations and school-based policies. However, structural changes were not found to produce increased autonomy for those in the lower rank in school and devolution of management responsibility was not necessarily found to empower others.

According to Cheng and Mok (p.10), SBM has a positive impact on student learning if a school makes a paradigm shift in its teaching and learning, "The marriage of SBM and paradigm shift is thus realized as SBM can provide the necessary conditions such as autonomy and flexibility in making decisions and using resource and members' strong commitment and active roles for facilitating paradigm shift in facing up to the challenges" (p.10). The review of developments in Hong Kong shows that the system has developed a path towards enhancing education at both the school and system levels.

## Singapore

Hung et al found no large-scale studies in Singapore concerning the impact of school autonomy on student learning gains / school improvement performance.

School autonomy in Singapore does not mean carte blanche to implement reforms. Hung et al. describe the Singapore system as a "centralized-decentralized" approach. They offer considerable evidence that the persistent effort towards shifting power to the schools has strongly impacted on learning methods and teaching style. A discernible shift in curriculum flexibility, changing assessment methods, and emphasis on professional development have caused a paradigm shift towards a more student-centered approach, student engagement in the learning process, and more active student learning. Schools today can initiate project-based-learning and school self-directed curriculum development. Student admission to higher levels on the educational ladder is no longer based on standardized national testing but on criteria laid down by their own schools and on academic and non-academic standards such as artistic and sporting talents. Universities have also had to broaden their admissions criteria to include interdisciplinary project work submitted by university candidates based on a different admission yardstick. According to Hung et al., these transformations all point to a fundamental change in teacher and student identity and  disposition and to a change in Singapore's learning culture and conceptualization of the successful school (p.11).

Another value which SBM has brought to Singapore's education is the growth and development of learning networks which create opportunities for teachers to share, collaborate, and co-develop new and better teaching methods.

# Part 2: Characteristics of the twenty-first century curriculum reforms

The notion of 21$^{st}$ Century skills, which became a buzz word in the language of Knowledge Society and Knowledge Economy of the early 1990s, quickly influenced curriculum thought. When the notion was translated into policy planning it was interpreted relatively widely by psychologists, curriculum designers, curriculum theorists, motivation theorists, researchers in knowledge restructuring, and experts in knowledge economy and technology.

The next section of the 6 reports synthesis will analyze and try to understand the meaning of 21$^{st}$ Century Skills (a.k.a. the Paradigm Shift in Education Reform or the Third Wave of Reform) by analyzing the policies of the six participating education systems.

## Alberta

21$^{st}$ century learning in Canada is part of a nationwide educational discourse in which Alberta is identified as one of the leading 21$^{st}$ century learning policy developers. Alberta's policy framework is based mainly on a reform proposal published in 2010 called *Inspiring Education,* which seeks more learner-centered education with shared responsibility and accountability regarding learners' needs. It is believed that this paradigm shift towards student-centered learning methods and practices could take about 15-20 years.

The *Inspiring Education* report discusses the use of technology to support student-centered learning. It argues that "learning does not exclusively take place in a school building" (Newton and Da Costa, p. 6) and that this allows greater flexibility of opportunities for residency and use of community learning resources,  The Education Act of 2013 saw the paradigm shift as not only relevant for the k-12 sector but for the post-secondary sector as well.

After preparing schools for curriculum redesign the Ministry of Education called for Alberta schools to submit proposals based on the *Inspiring Education* document. Several school authorities were chosen to be involved in the curriculum redesign and asked to develop school partnership networks to prototype new curricula in line with

the new learning and teaching methods. The goal of the new policy was to explore innovative and creative approaches regarding:

- New curricula

- Classroom based assessment

- Learning and teaching resources

Various schools were identified as demonstration sites and funding was provided to enable the refinement and documentation of practices. One of the main goals of schools participating in the demonstration project was to facilitate learning with the learner as active learner.

A Principal Quality Standard Guideline was also introduced in 2009, which contained seven leadership dimensions: Fostering effective relations; Embodying visionary leadership; Leading learning community; Providing instructional leadership; Developing and facilitating leadership; Managing school operations and resources, and Responding to the larger societal context. At the heart of the policy lay a plan for preparing Alberta schools for teacher professional development using a variety of methods and approaches. These included online development, networking with teachers, and making teachers aware of different professional development opportunities.

Finally, the 2014 Task Force document spoke of the need for teaching practice standards be revised in line with *Inspiring Education* and for school and district leaders to adopt proactive standards.

**Australia**

According to the Melbourne Declaration on the Educational Goals for Young Australians in 2008, successful learners are ones who develop their capacity to learn and play an active role in their own learning; have essential skills in literacy and numeracy and are creative and productive users of technology, especially ICT, as a foundation for success in all areas of learning; can think deeply and evaluate evidence; are creative, innovative, and resourceful and able to solve problems; can plan activities independently, collaborate, work in teams share ideas, and are motivated to achieve their full potential (Caldwell p. 10).

The recently completed Australian Curriculum lists seven generic capabilities that are linked to the notion of 21$^{st}$ Century Skills: literacy, numeracy, information and communication technology (ICT) capability, critical and creative thinking, personal and social capability, ethical understanding and intercultural understanding.

Caldwell discusses the following professional dilemmas which are tied to the linkage between Australia's national curriculum implementation policy and the skills for the 21$^{st}$ century skills which need to be developed at the school level. The dilemmas are: Do schools have the authority to adapt the curriculum? Do teachers have the capacity to adapt a local version of the curriculum to their students' needs? Do schools and their staff have the capacity to tailor the curriculum to personalized learning?  Caldwell concludes this part of his report by stressing that the implementation of 21 century skills policy needs some degree of affirmative action such as allowing schools considerable autonomy to tailor their curriculum to their mix of student needs and the needs of local priorities/ job specializations, while ensuring that teachers have the capacity to personalize learning.

**England**

In England, the new national curriculum of 2014 retains a commitment to a balanced, broad-based curriculum aimed at promoting the spiritual, moral, cultural, mental and physical development of pupils.  One of its new aims is to raise the bar in order to achieve more academically rigorous so that curriculum demands in England matched in high performing jurisdictions as a way to stretch more able children but also to provide 'core knowledge' for those from more deprived backgrounds.

The 2014 curriculum seeks to minimize prescription for schools and allow schools more space to innovate by reducing the detail in curriculum specification. It also introduces radical changes that reflect the discourse for deepening the scope of school autonomy and accountability. From 2015, pupils' school reports will provide their parents with absolute scores as a relative measure along with a measure of their child's progress. The new curriculum also required schools to design effective assessment systems of their own and follow three national core principles aimed at:

- Providing parents with reliable information about the performance of their children and the school.
- Helping to drive improvement for pupils and teachers

- Making sure that the school keeps up with externally determined best practice and innovation.

Greany and Waterhouse conclude that future development of the English education system will include a reform of the accountability system aimed at reducing constraints on schools that will actually change the model of the 1988 Education Reform Act. The authors predict that the architects of the new accountability structure, "are moving away from standard-based centralized improvement to strengthening decentralized local new roads of schools that exchange knowledge about effective practices and support each other in finding and developing innovative solutions for complex educational problems" (p.18).

In terms of the job market and employers' expectations, the authors think that England's new national curriculum does very little to address the 21st century skills agenda, such as developing students' creativity, teamwork, and adaptability, except in relatively minor ways such as replacing ICT with computing.

**Finland**

The new national curriculum published by the Finnish National Board of Education, which comes into force in 2016, does not refer directly to 21st Century Skills. Instead, it focuses broadly on the values and skills needed in teaching and learning for the new millennium. The document includes three main themes:

(1) *Learning and Skills in Changing World* — The authorities clearly see the realities of our rapidly changing world and the importance for education to stay ahead. The document conceptualizes students as active players, wants learning to be fun for youngsters, and stresses learning with others to achieve the goal of enjoyable learning (Saarivirta, p. 6);

(2) *Learning Environment*—The document emphasizes socio-cultural learning, information technology (IT), and the well-being of the whole school community irrespective of students' socio-economic background / discriminatory factors;

(3) *Teaching Methods*—The new policy stresses the importance of provision for both students with learning difficulties and above-average students. It also seeks to empower teachers to motivate and enrich students and improve use of existing technology.

The New National Curriculum provides greater freedom to municipalities and schools. School principal has freedom to approve the school-based curriculum, which must be

in synchronized with Finland's kindergarten curriculums, and municipal-level curriculums.   Finnish school curriculums have traditionally stressed two main subjects: mathematics and native language. However, the new 2016 curriculum also includes what are known as "soft skills", which includes the arts, music, social studies, and physical education.

In concluding the Finnish report, Saarivirta describes the changes in the curriculum as: extending learning choice and options by "combining traditional subjects into bigger, more complex ensembles…"(p.6).

## Hong Kong

In 2001 in the early stages of planning the new curriculum reform, it was already clear to everyone that it would take about 10 year to implement this radical reform. The spectrum of the reform covered from early childhood to tertiary education. The Curriculum Development Council of Hong Kong published a holistic curriculum proposal aimed at:

- offering students a school curriculum that would allow them to construct knowledge and develop a global outlook for coping with changes in the 21st century.
- developing students' lifelong learning skills (enjoyment of learning, improved communication skills, creativity, sense of commitment), for a knowledge-based economy and society.
- setting the directions for developing an open, flexible and coherent framework for the curriculum…in order to improve the quality of students through effective teaching and learning.

In 2000, an Education Commission document described the inadequacies of the current education system. It criticized the fact that, "...despite the huge resource put into education and the heavy workload endured by teachers, learning effectiveness of students remains not very promising; learning is still examination-driven and scant attention is paid to 'learning to learn'" (Cheng et al.p.13).  The document also focused on the need for a new culture of learning and teaching. The same year saw a consultation document which described the way forward for curriculum development. It explained that in order to eliminate the outdated learning approach of spoon-feeding students, the curriculum reform needed to focus on "learning how to learn," the importance of "life-long learning," and" all round development". The new curriculum listed nine generic skills: collaboration skills, critical thinking skills,

problem-solving skills, communication skills, information technology skills, self-management skills, creativity, numeracy skills, and study skills. The curriculum reformers believed that this open framework would encourage the flexible use of different strategies and styles to suit different learners' aptitudes, abilities, strength and curiosity— while striving to achieve learning targets (CDC 2001) (Cheng et.al p. 13).

The new curriculum ushered in several improvements. It reduced the unnecessary administrative workload for teachers; eliminated excessive quizzes, examinations, and dictations; it encouraged teachers to share their good practices and learning and teaching materials with peers. Soft policies such as project learning allowed curriculum implementers maximum space to explore the curriculum reform.

Cheng et al. describe the challenges facing HK's education system in its paradigm shifting reform. These include: freeing bottlenecks such as the policy on school closure; reducing structural difficulties and bureaucracy; rebuilding the image and confidence of the teaching profession; strengthening the knowledge-base for leadership and policy. More specifically, they explain that the reform should address teachers' concerns regarding: the effect of inadequate professional teacher development on nurturing students' critical thinking skills; how it affects student diversity, and its effect on the challenges in the implementation stage. Finally, they argue that the reform should pay more attention to students' voices and that steps should be taken to implement it a student-centered pedagogic approach.

## Singapore
The two titles, "Teach Less Learn More" and "Every Student an Engaged Learner" summarize Singapore's reform conceptualization of 21$^{st}$ Century Skills.

Singapore's curriculum reform targeted three broad areas of change: (1) Communication, Collaboration and Information Skills (CCI); (2) Critical and Inventive Thinking Skills (CIT), and (3) Civic and Global Awareness and Cross-Cultural (CGC) Skills. The academic curriculum, co-curricular activities, citizenship education, and applied learning programs in schools all try to establish transdisciplinary links (Hung et al. p.11).

In addition, Singapore's information and communication technology (ICT) master plan espouses and is a central tool in promoting the above skills. The master plan entails (A) integrating more technology into the curriculum, (B) ensuring that assessment

and pedagogy equip students with critical competencies in communication skills, self-directed skills, and collaborative skills (recognized as the basic talents to succeed in the 21$^{st}$ century). More use of technology in the curriculum has also enabled an education reform taskforce to introduce formative assessment more aligned with the spirit of 21$^{st}$ century learning. Unless reform planners seek to exploit local and technological opportunities, Singapore's curriculum reform and skills development will only have limited effectiveness and poor sustainability.

Finally, teacher professional development through learning networks allows teachers to share, collaborate, and co-develop new and better ways of teaching. A centralized internet portal for teaching resources was also developed and white space for innovation and action research with the joint purpose of enhancing conditions for implementing the new curriculum policy in the 21$^{st}$ century.

# Synthesis and Conclusions

The six reports on the evolution of the two interconnected and fundamental policy issues—school autonomy and curriculum reform—will help us in clarifying our shared mission and the challenges of a comparative study of school autonomy (which can be regarded as a prerequisite for curriculum reform in the 21$^{st}$ century) in six education systems.

### *Early stage:*

In most of the six countries, school autonomy has been a gradual process ushered in by an initial pilot scheme.

There were three main reasons for the gradual shift of power from central authorities such as government / local education authorities / charities / voluntary religious bodies to the school level:

1.  Neo-liberal ideology, which aspired to decentralize government services, including education, and replace government bureaucracy and clumsy services with private or semi-private entities. Proponents of this view mainly wanted to promote human development, free choice, individuality, and lower the student attrition stemming from a rigid, standardized system.

2. The world economic crisis of the 1970s and resulting financial constraints on government spending was the second reason for the shift in power from central government to the school level.

3. The school population explosion due to the post-war baby boom peaking in the 1970s and 1980s.

In addition to these main three reasons, there were other reasons for the shift to school-based management during this period, namely: the influence of the restructuring movement's argument (which was that inadequate management structures hampered improvements in education); a lack of performance measures and learning standards; ill-defined roles and responsibilities of schools and school leaders; excess emphasis on managerial control as opposed to having a framework of responsibility and accountability; and the rigid financial and cost controls (where the smallest day-to-day management decisions were managed by remote central authorities handing down standardized and top-down decisions with little flexibility to allow consideration of individual schools' needs). These factors account for the strong movement towards decentralization and the decision to decentralize education system at roughly the same time across the six education systems.

## *School autonomy in practice*

When school budget decisions shifted from the center to schools (with their diverse considerations and priorities) schools became publicly accountable. For example, regarding budgetary autonomy in Australia, schools receive about 90% of public education funding. In Alberta, the block amount to autonomous schools for school-based decision-making is 80% of Alberta's funding for education.

Moreover, depending on the level of authority which school principals receive in the participating systems, from this point on, principals' pedagogical leadership also increased. Principals could now appoint staff, control staff development, and work to improve student learning outcomes. Thus principals became the real leaders in their schools and could work autonomously within guidelines to tailor the school programs' to local and school needs. School autonomy gave principals the power to control their school's daily practices and encouraged increase customer orientation. Pedagogical leadership also meant motivating and supporting teacher efforts to meet students' needs as individuals leading to the recognition of teachers as true professionals.

As schools became accountable, they were expected to set their own goals, evaluate their own progress, draw up their own pedagogic and budgetary plan, and ensure their stakeholders' involvement in decision-making. Parental involvement and greater transparency in school governance indicated that schools no longer belonged to a central authority—but to the public.

But the main research question is: To what extent does greater management flexibility lead to initiative, pedagogic flexibility, and leadership measures that indeed help to enhance learning outcomes? For example, Finnish principals can decide which subjects should be given priority besides the core subjects.

And the comparison of the six systems raises other questions: What is the link between school autonomy and school resources? How free do principals feel to maximize their managerial autonomy and initiate new pedagogic approaches? And regarding accountability policy: In terms of the effect on schools' capacity for self-improvement—how do assessment methods in Finland and Singapore's IP schools differ from systems that see assessment and publishing a Schools Results Table as a tool for competition in terms of school accountability? Is competition between schools and ranking schools by performance the best way to improve school performance or is it a two-edged sword?

Question: Do our comparative studies help us to shed further light on the linkages between school autonomy and learning improvement?

Caldwell concluded that decentralized planning and resource allocation do not themselves improve student learning but when appropriate linkages are made between decentralizing and resource allocation and action in the personnel and professional domain — that leads to an indirect effect on student learning. Cheng et al. also thought that structural change and school empowerment through autonomous decision-making does not mean that lower ranked schools should be given autonomy necessarily, and that devolution of management responsibility does not necessarily lead to empowerment.

Saarivirta found that unlike external assessment, school-based assessment gives principals greater autonomy to lead professional development and school improvement. The question then is: Is this view valuable for our comparative study? What does it teach us about school accountability and improvement?

Cheng et al. found that SBM increases teacher' flexibility and effectiveness. (Do the other education systems find this?) The HK report also concludes that SMB has a very strong positive effect on schools at the team level—a valuable finding which may serve our quest for school improvement. Both Cheng et al. and Hung et al. think that learning networks are useful for increasing teachers' opportunities for collaboration and for helping each other co-develop new and improved teaching methods. Cheng et al's report describes a paradigm shift towards 21$^{st}$ century skills reform and school autonomy (SBM) which together establish the conditions needed to meet the challenges of educational improvement.

Newton and Da Costa in Alberta and Greany and Waterhouse in England voiced similar reservations about the negative effect of the competitive nature of the new educational policy. All scholars argued that schools and students all paid the price for competition and teachers and principals spent too much time on competition in and between schools instead of on instructional leadership. Greany and Waterhouse also thought that encouraging collaboration and solidarity between schools is much more important for self-improvement than encouraging them to compete.

Having produced these reports, the next step is to develop an effective research plan. This will allow each of the education systems involved to glean additional insights and knowledge that can contribute to developing the two interrelated reforms—school autonomy and curriculum reform in 21$^{st}$ Century skills—and improve the outcome of learning in our systems.

## Challenges in the 21st Century

The partners in this collaborative research have many common hopes for curriculum reform in the 21$^{st}$ century. We are all fully cognizant of the changing nature of our employment markets, the rapid changes in technology, the exponential increase in the volume of available data and knowledge, and the need to keep up with these changes in educational reform. We are aware not only know that the world is changing, but that our youth culture is changing as well—and with terrific speed. The diverse perspectives of the calls for curriculum reform around the world reflect these changes.

The popular view of education reform is that we should equip our students with tools for *Learning to Learn* as in HK, Alberta, and Finland and strive to *Teach Less* and *Learn More* as in Singapore, rather than teach them to learn by rote as suggested by

the more formal and orthodox learning methods. Most of the reports in this study contend that the new curriculums should teach generic skills such as: collaboration; critical thinking; problem solving; communication; creativity; numeracy; study and IT. The Finnish report also discusses soft-skills such as arts, music, social studies and physical education while the subjects in the new Australian curriculum are tailored to the mix of students needs.

The various report authors treat changes in the curriculum and learning with an amount of suspicion. Caldwell asks: Are schools authorized to adapt the curriculum? Are teachers capable of creating a local curriculum for their students' needs? Are schools and their staff capable of customizing the curriculum for personalized learning? Saarivirta raises a similar question, namely how should teaching be led in order to differentiate and cater for students with learning difficulties / above-average students? Cheng et.al. writes that student learning today is examination driven with little focus on "learning to learn".

The report authors also discuss the importance of freeing reform bottlenecks in several crucial areas: school flexibility and the scope of leader decision-making; rebuilding the image and confidence of the teaching profession; acknowledging student diversity, and identifying weak student thinking skills, etc. Greany and Waterhouse also discuss the difficulties and complexities facing schools that are required to design an effective assessment system.

As we reach the end of our collaborative study, a number of questions remain. For example, almost all the authors if we have really grasped the complexity of the challenge of curriculum reform in the 21$^{st}$ century. Do we really see the different threads of this complex reform with sufficient clarity? What can we learn from the failed implementation during the 20th century (which lasted about 50 years), of the Progressive Education approach, which was a central approach in active learning, and is comparable in many ways to the new curriculum reform challenge in the 21$^{st}$ century? Can we develop a research tool sensitive enough for us to learn from each other which can equip us to improve our systems for the challenge that lies ahead in our common goal? That was the goal of our collaboration and we look forward with hope to many successful results in our common journey.