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1. PREAMBLE

The term “21st century competencies” has not been formally used in the policy arena in Hong Kong’s education. However, being a free market (ranked as the freest in 2015) and a metropolitan city, Hong Kong has felt the changes in society perhaps more sensitively than many other cities in the region. Meanwhile, since China’s open door policy in the early 1980s, Hong Kong has lost almost its entire manufacturing sector, with its service sector escalated to 92% of GDP growth, and hence has experienced the most significant challenges of a post-industrial era earlier than many other cities.

The challenge to education is therefore substantial. This is felt by almost all sectors of society, and there is a tremendous outcry for changes in education. This has led to an overhauling reform, which was launched in 1999, of the structure of the education system and fundamental changes in the curriculum. The whole concept of the reform is to face the new future, and hence to do education differently. Rather than just to improve teaching, the reform concentrates on *learning* as the unparalleled focus. It is a comprehensive movement in addressing what would otherwise be called “21st century competencies.” As will be seen, it is not so much adding more to the education agenda, but to start changing the system to embrace richer learning experiences. The first group of students who went through the new curriculum and new system graduated in summer 2016.

However, to move from a conventional system of education, which has been deeply rooted in the industrial era and in a strong cultural heritage, to a new system entails change in the culture, which is about the basic assumptions and values of education. Such a culture will not change overnight, but the change may take place over a few decades.

2. HISTORY AND BACKGROUND

Hong Kong was no more than an island with a few fishing villages before its cession to Britain in 1842 after the Sino-British War. The first schools were established by foreign missionaries. Hong Kong was developed into a prosperous colonial city until the Japanese occupation in 1941, and was further developed into an international port after the Second World War.

The changeover of government on the Mainland, in 1949, caused tides of migration across the border. During the 1950s and 1960s, Hong Kong was further developed into an industrial metropolis. By that time, there was a school system comprising a few government schools, a handful of missionary schools, and a large number of private schools (often of low quality).

In the 1950s, 22 schools, belonging to Christian and Catholic bodies, were the first to become subsidized by the government. These schools largely followed the model of British “public schools” (grammar schools and boarding schools), and aimed at producing elite graduates. Many such schools targeted children from deprived families, and enabled them to enter universities. Many of the students became professionals and civil servants.

Modeled after elite schools in Britain, these schools, known as Grant Schools, offered very comprehensive learning experiences to their students. Three features stood out: plenty of extracurricular activities, an emphasis on pastoral care, and the commitment to student self-governance. They trained top-level athletes and musicians, where entrance into universities was taken for granted. Most of them became community leaders later in life.

However, the Grant Schools also succeeded in integrating traditional Chinese values into school life.

First, the pastoral care element was developed into “moral education,” which has always been the first of five dimensions of traditional Chinese education values: moral, intellectual, physical, social, and aesthetic. Moral education here covers a broad scope of learning apart from the formal curriculum for academic studies, and is not limited to “morality” as is understood elsewhere. Under the principal, there were often two deputies: the prefect of studies and the prefect of discipline. The latter often took care of moral education in the broad sense of the term.

Second, the notion of a teacher followed the Chinese tradition, being much more than an instructor in the classroom. Teachers are comprehensive “mentors” who are committed to the overall holistic development of the students. Each class is assigned a class-teacher (similar to a class-master in British schools), who is responsible for the comprehensive development of each student in the class.

Third, they followed the Chinese education culture, where effort and hard work were cherished, and innate ability and individual needs were played down. In the report card in those days, apart from the scores in various subjects, there was always a box on “Conduct” and another on “Application,” often filled in by the class-teachers in the form of written comments.

The characteristics of the Grant Schools have been sustained until today, and have fundamentally influenced the nature of Hong Kong schools, most of which came into existence only in later decades.

The mode of subsidy to the Grant Schools also has become the basic mode of funding for the majority of schools in Hong Kong—the government provides funding, and non-government bodies, known as “school sponsoring bodies,” manage the schools. This has given schools a large degree of autonomy and perhaps explains the success of the “school-based” model, where schools develop in diverse directions, all with strong initiatives of their own.

The first milestone of education development in Hong Kong was the legislation of universal primary education in 1970. The relevant ordinance stipulated that every child could enjoy a free six-year primary education. It is noticeable that, in 1970, the actual gross enrollment ratio of primary education was higher than 100% (because of the attendance of over-age children). Hence, the legislation is an endorsement of the situation and a reinforcement of the situation by way of government commitment.

The legislation also reflected the reality that by 1970, there were already enough public schools for children of all age groups. Such schools included a small percentage of government schools (financed and managed by the government, where teachers are civil servants) and subsidized schools (financed by the government and operated by sponsoring bodies). There were few private schools at the primary level.

Compulsory nine-year schooling was introduced in 1979 after legislation the previous year. This led to the mushrooming of public schools (government and subsidized schools, the latter then renamed “aided schools”), with standard school buildings, facilities, and staff structure.

In a way, the newly established public schools are all modeled after the Grant Schools as mentioned above. Typically, they again have two major divisions in administration: academic affairs and moral affairs. The former refers to activities related to the formal curriculum. The latter refers to all other activities beyond the formal curriculum. Over the years, the activities in schools have expanded tremendously. These activities have extended beyond the traditional sports and musical activities, to include services and visits to deprived areas, as well as scientific projects and innovations. It is not unusual for a school of around 1,000 students to host 40–50 student clubs or associations for various learning experiences.

Schools generally hold the philosophy that extracurricular activities are crucial for the development of students' personality, social attributes, as well as values. Schools believe that such activities are essential for students' comprehensive development.

Therefore, there has been a traditional infrastructure in Hong Kong schools to foster students' comprehensive development. This enables schools to easily adopt the quest for so-called 21st century competencies (though not using this formal term) in the later reform.

3. EXAMINATIONS

The picture is perhaps incomplete without mentioning the overriding effect of public examinations on education in Hong Kong. Examinations deserve a special section, since they have overwhelming effects on the entire education system.

Given the basic concept and infrastructures in schools for dimensions beyond academic studies, the public examinations have overwhelmed the entire school system. There used to be a Secondary School Entrance Examination (SSEE) that allocated primary school graduates to different secondary schools. In effect, that was a severe selection process, where the academically strongest students were enrolled in the best schools. The SSEE was abolished in 1979 with the introduction of nine-year compulsory education. The replacement, which combined school internal assessment, parental choice, and an aptitude test, was introduced for student allocation purposes. It was a rather complicated system where, in the end, students were divided into five bands, and allocated to schools according to randomized allocation within each band. However, the net effect is still that the academically stronger students ended up in the better schools. As will be mentioned later, the allocation mechanism was modified later in the reform in order to reduce the labeling and discrimination effects.

However, the most influential public assessment was the Hong Kong Certificate of Education Examination (HKCEE), which was the critical assessment that decided the paths the students would pursue after secondary schooling. HKCEE lasted until the 2009 reform. The HKCEE was hosted by the Hong Kong Examinations Authority, which issued examination syllabuses for the respective subjects. This was the critical factor that led to the examination-orientation in secondary schools in Hong Kong, particularly in the senior grades. About one-third of the students who finished the 11th grade proceeded to study in the 12th and 13th grades, and would further sit for the Hong Kong Advanced Level Examination, which was also known as the “matriculation examination” because it provided credentials for entrance to higher education.

Typically, students in senior grades, which used to be the 10th and 11th grades, were engaged only in preparation for the HKCEE. Teachers would try to cover the entire syllabus, drill the students through the past examination papers, and tried to facilitate students to achieve the highest possible scores. Then, for those who were promoted to the 12th and 13th grades, the study was almost purely preparation for university entrance, with only two to three subjects that matched university entrance examinations.

In a way, in the senior grades of secondary schooling, students' lives were overwhelmingly dictated by examination preparation. These are the critical and precious years for young people who enjoy learning about life with a wide spectrum of experiences.

The above rather meticulous account of the examination system (before the reform) was to highlight the need for and essence of the reform, which aims at liberating students for learning experiences that they deserve. This will be further discussed below.

4. THE REFORM

The term “21st century competencies” did not enter the education policy discourse in Hong Kong. However, there has been a major education reform, launched in 1999, that was unpinned by the basic statement “Society has changed!” The understatement was “Education has to be different!”

The reform was launched against the background that education at the time was experiencing “total dissatisfaction”—teachers were dissatisfied with the students, parents were dissatisfied with the schools, and employers were dissatisfied with local graduates. Such dissatisfaction existed despite improvements in the system as covered by the more than 270 recommendations made by seven Education Commission Reports since its establishment in 1986. The EC Reports covered almost every aspect of the education system, ranging from school finance and school management to moral education and language education.

The changeover of sovereignty from Britain to China in 1997 created a climate of change. The Education Commission, since 1998, decided to give education an overall review. The one-year review marked the launching of the reform in early 1999. The theme was to revisit the “aims of education,” which resulted in more than 40,000 submissions from all sectors of society. The summarizing document published in 2000, *Learning through Life*, shifted the aims of education from “knowledge and skills” to attributes tentatively summarized as “eager to learn, good at communicating, ready to commit, bold to innovate.” These were later elaborated in the subsequent curriculum reform.

The government Education Bureau further focused on four priority areas (with resources)—reading, moral education, project work, and ICT—as handy measures for teachers to initially engage in new dimensions of school learning.

Reading was something teachers felt was weak in Hong Kong.¹ Moral education refers to its broad meaning, which embraces development in the affective domain. Project work is an integration of group learning and creativity. ICT is an umbrella term covering all new learning technologies. In hindsight, these four areas did indicate the crucial areas where education could achieve initial breakthroughs.

The review of the aims of education resulted in the document *Learning through Life*. The title carries the dual meaning of “life learning” and “learning in real life.” The year’s review was also a learning exercise for the policymakers in the Education Commission. Two points became distinct.

FACING A CHANGED SOCIETY

First, society has changed, and the change is fundamental. The change is overhauling. It was recognized that school education as a national system was initiated in the mid-19th century at the height of the industrial era. At that time, knowledge and skills were essential in order to secure a job in the cities, and in order to engage in wage-earning. In particular, reading, writing, and arithmetic (often known as literacy and numeracy) were the basic requirements. And such capabilities were reflected in the academic credentials, which were used as a proxy for knowledge and skills.

¹However, in PIRLS, an international comparison study of reading literacy, Hong Kong’s “ranking” moved from 14th in 2001 to 2nd in 2006 and 1st in 2011, very much due to an innovative reform in the learning of the Chinese language.

In Hong Kong, following the Chinese tradition of emphasis on examinations for social mobility,² schools are overwhelmed by examination pressures. Apart from the few elite schools where scoring high marks in public examinations did not pose any difficulties, most students have to struggle in order to pass the public examination, so as to secure the “ticket” for further education or employment.

In the 1990s, Hong Kong moved almost completely away from manufacturing industry. Over 90% of the GDP growth was due to the service sector. Unlike the pyramidal organizations for a fine division of labor and mass production, the service sector works in small, flat, and loose work units, often toward a one-stop setup for personalized services and customized products. Even in large organizations, such as investment banks or accounting firms, people work in one-stop deal teams, account teams, task forces, or otherwise, for designated clients.

The attributes expected in such small work units are very different from the attributes expected in large-scale pyramids. In the latter, workers were expected to follow the designed procedures, rules, and regulations, in a tight structure with a fine division of labor. In the contemporary workplace, front-line workers have to directly face clients, to work in teams with a blurred division of expertise, to design and innovate for solutions on the front, to improvise for unexpected circumstances, to experiment and run the risk of failure, to face ethical and moral challenges, and so forth.

Overall, while the workplace in a typical industrial organization tried to depersonalize the processes, the “post-industrial” workplace places high expectations on personal attributes.

Accompanying the change in the workplace is the change in individuals’ career life. Work units are fragile, and jobs are no longer secure. People change jobs and occupations, either by obligation or by will. It is no longer possible to expect young people to learn a specific set of knowledge and skills, and live with such for a lifelong career.

The Education Commission was enlightened that (a) it is no longer possible to see education as vocational training; (b) it is no longer sensible to take a purely economic approach, and to focus education on the manpower needs in society; and (c) it is not only a matter of adding new contents to students’ learning, but taking a fundamentally different view about the quality of people in a new world.

Here is where the notion of 21st century competencies came in, although the term was not used. There was a startling awareness of the change of expectations for young people, but not expressed as new sets of skills or competencies that emerge because of a changed society.

The general approach of the reform was therefore not to add new items in terms of knowledge and skills, but to liberate students as learners. Hence the first act, even before meticulous deliberation, was the elimination of the public assessment at the end of primary schooling (grade 6). There was a further change from a 5+ secondary school structure 2 (5 years O-level plus 2 years A-level) to a 3+3 structure (3 years junior secondary plus 3 years senior secondary), with no interim public assessments. In the end, three public assessments were reduced to one.

The removal of the assessment at the end of grade 6 has changed the ecology in the entire primary school sector. Much more splendid learning activities now take place in senior primary grades, which used to be occupied by assessment preparation.

²This was due to the Civil Examination (lasting from 603 to 1905 AD), which was the major mechanism to select officials, mainly by testing reading and writing abilities. That was the sole path for social mobility in ancient China.

FOCUSING ON LEARNING

At this juncture, the Education Commission received input from the development of the Learning Science. The Learning Science in the 2000s was not as mature and well known as it is 15 years later. However, the Education Commission was convinced that instead of credentials and examination scores, school education should focus on students' learning.

As a consequence of such an awareness, the Education Commission went ahead to start a reform in the curriculum. The essence of the curriculum reform, conveyed in the document *Learning to Learn*, was (a) to move away from a purely economic discourse—GDP growth, global competitiveness, employability—and to start from what students should need in order to face unpredictable challenges in the future; and (b) in the belief that learning is a matter of learning experiences, to compress the conventional formal disciplinary “subjects,” so as to give room for other types of learning experiences.

The Curriculum Development Institute identified five types of learning experiences: *moral and civic education*, *intellectual development*, *community services*, *physical and aesthetic development*, and *workplace experience*. It is reckoned that traditionally, there had been too much emphasis on *intellectual development*, some doses of *moral and civic education* and *physical and aesthetic learning*, but very little of *community services*, and practically none of *workplace experience*.

Note that in this case, the approach is not on learning outcomes, but on learning experience. This is perhaps based on a different approach to *learning*. The emphasis is not so much on “what they have learned,” but “what learning experience they have had.”

The curriculum reform, which concentrates on 10th–12th grades, was a calculated move to accommodate all these learning experiences in students' school life. The net effect was to introduce eight “key learning areas” (KLA) as “compulsory” elements in the school curriculum: Chinese Language, English Language, Mathematics, Humanities, Science, Technology, Arts (music and fine arts), and Physical Education.

These key learning areas are supposed to be indispensable in any school curriculum. This is meaningful in the context that the Hong Kong system works on a “school-based” model, where the government only provides a vague framework, and the individual schools work out the details, specific to the respective schools.

It is noticeable that (a) there is a deliberate change in the nomenclature, from “subjects” to “key learning areas,” as part of the strategies to change the discourse in schools; and (b) compared with the old “subjects,” these key learning areas constituted a “compressed” formal curriculum; other learning activities were introduced to occupy the “vacancy.”

Universities were deliberately not involved during this design process, but entered the negotiation about the entrance requirements after the design. This is because universities would see preparation for academic work as of prime importance, but such requirements would unfavorably dictate the learning and teaching in schools, and that is the source of exam-orientation in schools. The negotiation, interestingly and expectedly, was a bargaining of the universities requiring more specific papers, against the intention of the curriculum developer to reduce such required papers.

In the end, the actual curriculum evolved in two directions. On the one hand, schools still maintain conventional subjects such as Physics, Chemistry, Geography, and Commerce, and these are required by universities for entrance to specific disciplines (e.g., Chemistry for Medicine, Physics for Engineering).

On the other hand, schools have developed learning opportunities for students' experience beyond the traditional academic studies. Three items stand out.

First, *Liberal Studies*. Negotiations came to the agreement that passing in Liberal Studies is compulsory for university entrance. Liberal Studies are basically free discussions among students, about current affairs, often about policies and politics, but also about issues of global concern, such as sustainability.

Second, *Applied Learning*. This is about workplace experience, which is less about skills than a sense of responsibility and commitment to real productive work. This is often done with the support of the Vocational Training Council and collaboration with various employers. Applied Learning is not another kind of vocational training. It caters to all students, including those with strong academic abilities.

Third, *Other Learning Experiences* or *OLE*. This provides schools with the space to introduce a variety of unconventional learning. It could include overseas exchange, visits to rural villages, service learning (e.g., in developing countries), exploration, scientific research, organizing musicals, etc.

5. IMPLEMENTATION

It is perhaps meaningful to describe the “school-based” model in Hong Kong, because it is crucial to the implementation of the reform.

Hong Kong’s school system runs on a “school-based” model. The curriculum reform provides only a framework, which allows schools to design their learning activities according to their respective contexts. The only boundaries are the admissions requirements posed by tertiary institutions.

Hence, the reform that started about 17 years ago was a top-down exercise as a strong government initiative, but the implementation was designed by individual schools as part of the “school-based” model. The government initiatives forced open the doors of reform, by doing vigorous dissemination of the visions of the reform, and conducting numerous (more than a thousand) discussion sessions, each with hundreds of teachers or parents. However, the government never dictated what should eventually be done in schools.

The Curriculum Development Institute (CDI), headed by a Deputy Secretary of Education, has been instrumental in the design and implementation of the curricular reform. The development of curriculum and pedagogy is taken care of by the CDI, which is the executive and research arm of the decision-making Curriculum Development Council. There are subdivisions within the CDI that take care of the respective key learning areas. In particular, there is a team that looks after moral education, which embraces moral education, citizenship education, and other areas in the affective domain. There is also a team that looks after Applied Learning, Other Learning Experiences, and Liberal Studies, respectively.

Four years ahead of the forthcoming implementation of the new curriculum in 2009, in 2005 the CDI organized 45 training sessions among schools. Typically, each session invited 12 schools, each with six representatives, to gather in a hotel for one full day. The six representatives from the school comprised the principal, a vice-principal, two senior teachers, the supervisor (often the chairman of the governing body), and one governor. This was to make sure that the representatives would bring home a critical mass for change in the respective schools. The day typically started with an opening talk by a non-educator, from other social sectors, and the theme was “Society has changed.” This was followed by the Deputy Secretary, who talked about the essence of the forthcoming curriculum change. The six members from each school then discussed the possible challenges and preparations in their respective schools. The participants then met in groups with their counterparts from other schools, to make sure that each school would not feel alone. The rather meticulous description above is to reflect how reforms into new modes of education are prepared. Often the design is only a small 5–10% of the process; the devil is in the details of implementation.

Nonetheless, the government did contribute a lot of efforts in designing the new public examination (Diploma of Secondary Education, or DSE) and negotiated with tertiary institutions, which redesigned their admissions criteria to reduce the number of required papers. In hindsight, the change in the DSE was not strong enough to reflect the overhauling nature of the reform. Since it is the only “ticket” to higher education and employment (in fact, more of the former, because of the almost-universal pursuit of postsecondary education), it still overrules other expectations in schools.

The picture of implementation would be far from complete if we did not mention the syllabuses. However, the role of the CDI teams is more of a designer of the curriculum framework, advisor to schools in the realm of teaching, coordinator with the Examinations and Assessment Authority (HKEAA), and systemwide monitor of development in the respective areas.

The actual teaching and learning of the key learning areas are governed by the examination syllabuses that are constructed by the HKEAA. Despite all the good intentions to move schools away from examinations pressure, the examination syllabuses, which lay out the contents and the expected levels of understanding, dictate classroom teaching. This is further reinforced during the years just prior to the public examination, when teachers and students also study past exam papers and their marking schemes, which are all publicly available.

There are also many other initiatives that are not due to the government. For example, there are professional teachers’ organizations in the realms of counseling, and extracurricular activities that cover almost all schools. As another example, in the past 20 years, student unions have been set up in almost all secondary schools, with varied degrees of democratic election to their leadership. These indicated a move toward student governance of extracurricular activities in Hong Kong schools.

Meanwhile, because of the reform, parent associations were established in practically all schools. There were joint associations in districts, and there is an umbrella committee (Home-School Cooperation Committee) that oversees all parent associations, which are nonetheless autonomous.

In order to facilitate the broadening of learning experiences, in 1998 the government set up a Quality Education Fund (QEF) that, on top of the normal general appropriation, encourages schools to apply for special funding to improve students’ learning opportunities. Most of the time, money from QEF goes to learning beyond the formal curriculum (e.g., establishment of an orchestra, organization of overseas student exchange). The QEF further reinforces the school-based model, where schools set up programs of their own choosing. This is of prime importance, because in many cases, the cost associated with broadening students’ experiences would place students from poor families in an even more deprived situation. The QEF has successfully changed the outlook of lives in schools, particularly those in deprived neighborhoods.

6. NON-COGNITIVE LEARNING

It is perhaps meaningful to mention the dimension of non-cognitive learning, or learning in the affective domain.

It is a tradition in Chinese communities that education comprises five dimensions: moral, intellectual, physical, social, and aesthetic. Apart from intellectual and physical, the other dimensions all belong to the affective domain (according to Bloom’s taxonomy). Since ancient times, the moral and intellectual dimensions always come side by side as expectations of the attributes of a sound personality (a good person and an able person), and the moral dimension always comes first.

This is translated to schools in Hong Kong, where most schools traditionally had a prefect of discipline parallel to the prefect of studies, as one of the two fundamental divisions right under the principal. “Discipline” in the older days was representative of all learning activities in the non-cognitive domain. The post is now sometimes changed to prefect of moral education, using another proxy for learning activities in the affective domain. Those include daily and/or weekly assemblies, thematic weeks (a theme for a week, e.g., politeness), organizations of school prefects (who are all-around leaders), etc. The coordination of class teachers is another major task. There are coordinators of extracurricular activities, who may or may not belong to the moral education team.

The infrastructure seems to fit the purpose of the development of 21st century competencies, which is often interpreted as all-around development of students. In other words, the extension of education beyond knowledge and skills is something the schools are quite used to, and always think should be the case. However, also under almost constant discussion is the relevance of traditional norms and virtues to modern society, and the extent that such norms and virtues should be adjusted to contemporary expectations. However, there is often attention to the methodology in which effective learning in these areas takes place. Some of the traditional ways of “teaching” of such attributes are often seen as *indoctrination* in the modern understanding of pedagogy.

It has to be mentioned that the Hong Kong government did try to promote “moral education” and “citizenship education” about 10 years ago. CDI has developed a rather comprehensive framework for learning in these domains. It did receive considerable attention, but perhaps did not cause any excitement to schools and teachers, because they all thought the framework was not very different from what they were practicing. However, the reform has created a new overall framework for a new mission. That has given the schools new impetus to rethink and reorganize learning in these domains from a refreshed perspective.

7. MEASUREMENT OF LEARNING OUTCOMES

Readers will naturally ask: How is the learning process monitored and how is the learning outcome measured?

The overall vision is that all students could become active learners, have a broad knowledge base, be equipped with strong generic capacities, and have sound attributes in the affective domain. The functions of the reform are (a) to reduce the unwanted pressure of public assessment and (b) to create room for the formation of attributes beyond academic learning.

This pertains to the general perspective about student learning. As mentioned earlier, the emphasis is on providing students with learning opportunities and learning resources, and expecting students to be active learners, which implies that different students may have different learning goals and may take different learning paths. As a consequence, the learning outcomes are expectedly diverse. Such a notion is particularly true in the realm of non-academic dimensions (i.e., the affective domain), although it is rather difficult in the formal academic curriculum, which is largely dictated by unified expectations in high-stakes public examinations.

This is also related to the notion of accountability in Hong Kong’s education. There are rigorous systems of accountability in almost all aspects of the education system. However, the accountability measures are taken for granted as threshold expectations, and seldom present threats to schools and teachers.

Readers may also want to know the gaps between what the government intends and what actually happens.

It is now perhaps obvious that this question is not totally appropriate to the Hong Kong situation. First, the government only provides the framework and resources. It is more a matter of how the visions are realized in

different schools (in a school-based system), rather than how government initiatives are implemented. Second, since the major concerns are learning opportunities and processes of learning, there are bound to be diverse learning outcomes, and the measurement of them always poses a challenge. Third, the real challenge is the disparity among schools because of the school-based model. This is the major challenge facing the Hong Kong school system, but this is not limited to the issue of 21st century competencies.

8. THE CHANGED CONTEXT

Seventeen years passed, and the first cohort of students who went through the new curriculum graduated in 2016. However, in these 17 years, things evolved. New challenges and unintended mutations emerge. This is summarized by a newly emerged non-governmental initiative, Education 2.1, launched in early July 2016, which also made “suggestions” about the ways ahead.

The following changes in the context are observable.

- (a) Society has changed even more dramatically. The political framework of “one country, two systems” within which Hong Kong’s polity is constituted has met with ongoing confrontational interpretation, and Hong Kong society has seen a serious split over its relationship with the Beijing government.
- (b) The political confrontation reached its climax in 2014 in the “Occupy Central” movement. In the 79-day political movement, political parties and student groups took to the streets, and occupied and blocked the Central district. This had an immense impact on secondary school students, many of whom joined the movement, and practically all schools were affected.
- (c) Meanwhile, the economy has further evolved with greater uncertainty and greater disintegration. For young people, there are fewer employment opportunities and more precarious incomes. The evaporating hopes for a stable home are further severed because of high land prices. Protectionism, localization, and extremist ideologies prevail among the young.
- (d) There has also been a dramatic decline of the school-age population. The annual cohort of around 80,000 in the 1980s is now reduced to only around 40,000. This poses a crisis to schools, which face closure possibilities. The demographic change has prompted many schools to work harder in order to keep themselves open in spite of a shortage of students, but has also caused them to be more pragmatic in order to attract more students.

9. ACHIEVEMENTS AND CHALLENGES

Nevertheless, there are fundamental changes that have gone along with the intended orientation of the reform. Many of these changes, however, are accompanied by new challenges.

- (a) The notion of “learning” as the core concern of education is widespread among educators, and very much so among parents. The term “learning experiences,” for example, has been widely adopted in the public discourse about education. As can be seen below, the three newly introduced learning areas—Liberal Studies, Applied Learning, and Other Learning Experiences—all seem to have borne fruit.
- (b) There have been basic changes in schools in the first nine grades, which are less affected by the public examination (Diploma of Secondary Education, DSE, which takes place only at the end of 12th

grade). There are more integrated studies in the sciences and humanities, which is the design of the reform. Overall, almost all principals of primary schools admit that schools are now enjoying much more flexibility, and school life is much more lively.

However, a Territory-wide System Assessment (TSA), introduced in third, sixth, and ninth grades, which is meant to be a study of systemwide performance, has been perceived by schools and parents as another kind of public assessment of individual students. Often pressured by parents, schools drilled students hard in preparation for the TSA. The preparation unnecessarily consumed students' time and energy, which led to no real learning. The TSA eventually caused a controversy in the community in 2015. This is a typical example that demonstrates how the examination-orientation culture could distort school lives even though there was no public examination at these levels. An ad hoc committee was established, which suggested that only selected students should take the assessment.

- (c) The original, already-rich extracurricular activities are further enriched by more activities, stronger student governance, and learning opportunities outside Hong Kong. This is very much under the umbrella of the new learning area Other Learning Experiences. The activities are now perceived as part of students' learning life. This is witnessed in the dramatically increased number of clubs and other activities in schools, the large number of local competitions and the largely increased participation in international competitions, and the incredible number of newly emerging partnership projects between other sectors of the community (mainly business firms and NGOs) and schools.
- (d) The Quality Education Fund (QEF), which provides funding for school-specific projects, has played an essential role in creating new learning experiences in schools. For example, many school orchestras have been set up even in deprived areas, where students otherwise would have little opportunity to learn to play a serious musical instrument. Many schools organize their own dance shows, musicals, or Cantonese opera, all with the rather expensive costumes, supported by QEF. Participation in international competitions is very common among schools, and many win prizes.

However, the QEF has also encountered difficulties when teachers feel overwhelmed with the administrative workload associated with QEF projects, and hence shun taking on new projects. The QEF, which started with 5 billion Hong Kong dollars (650 million USD), has grown to 6.5 billion (due to investment), and is sometimes criticized for not spending enough.

- (e) There are also an increasing number of business firms, non-government agencies, and tertiary institutions that partner with schools and work on out-of-school learning activities.

A recent survey reckoned that in a sample of 228 schools (secondary, primary, kindergarten, and special schools) there are an average of 9.8 projects per school where the business sector and NGOs collaborate with schools in providing students with a large variety of learning experiences.

Such experiences include sports, music, art, drama, dance, as well as activities that are not available in the school setting, such as social service, career preparation, etiquette, farming, or simply workplace experience. The partnering organizations include business firms, NGOs, charitable bodies, church bodies, sports and arts organizations, and higher-education institutions. In this small sample of 228 schools (out of a total of around 1,500 schools), more than 1,000 partner organizations are involved.

Many schools also started overseas programs such as exchange, summer outdoor experiences, and activities with sister schools overseas. It is noticeable that the richness of extracurricular activities is widespread across all schools of varying student abilities and neighborhood income.

There are also schools, which do not belong to the traditional “elite” and some in deprived neighborhoods, that start advanced programs such as 3D animation, biotechnology, genetic analysis, and so forth. All these have added new dimensions of student learning to schools, on top of academic studies, in response to new demands in a changing society.

Case: 3D Animation in Yung Yao School

Yung Yao Secondary School is a government-aided school sponsored³ by Yung Yao, the late industrialist. Billy Yung, his son, inherited the sponsorship and is keen to introduce 3D technologies to the school.

Hong Kong secondary schools (7–12 grades) are perceived as classified according to the academic performance of the students they admit at seventh grade, who are divided into three “bands.” Yung Yao School takes in almost all Band 3 students, who are supposed to be the lowest in terms of academic abilities.

However, Yung Yao School is now known for the programs in 3D computer animation. In groups, students work extremely hard in producing first-rate 3D cartoons. They won many international prizes in their cartoon productions. They have three 3D printers, also used for other design work. They also collaborate with How Man Wong, a seasoned *National Geographic* explorer, in presenting his adventures in cartoons.

The activities are not limited only to design and production of cartoons. With ample sponsorship from the Yung family, students go ahead with scientific investigations allowed by these resources. A 10th grade boy, for example, invented a device that could detect the state of the brain and transmit it to a clearing station, thereby monitoring the state of sleep or consciousness of elderly people, for example. He referred to a long list of real academic papers. There are about 20–30 such projects going on at any one time in the schools of around 1,000 students.

Alex Kai, the principal, said that many students may still remain poor in their academic examination scores, but they have found values in themselves and have become optimistic about life. Because of their achievement in design and science inventions, others may change their outlook, become motivated, and achieve higher scores in their academic examination.

A recent highlight is about three high-level science experiments, initiated by student teams, that were carried out by Chinese astronauts in a satellite under microgravity. These student teams came from three schools all situated in deprived neighborhoods.

- (f) As mentioned above, Hong Kong practices a genuine school-based model where most curriculum and administration decisions are made at the school level within schools. For example, the curriculum is only a guideline, and schools have to decide what to teach, how to select and use textbooks (which are becoming less important), how to assess, and how to organize school activities. Schools recruit teachers, and the School Management Committee selects the principal. This has allowed favorable diversity among schools, and hence reflects the specific needs of students in respective schools, as well as the vision of the schools and the styles of school management. In the end, teachers make many decisions, and hence engage in many professional deliberations. They are by no means simply workers.

However, the school-based model has also led to disparity among schools. For example, although all schools are in a culture of rich extracurricular activities, the number, quality, and actual effects of such activities may differ tremendously. More proactive schools may have a more creative partnership with non-educational organizations; others may be bogged down by administrative details such as parental approval and student insurance. The other adverse effect is that teachers are suffering from a heavy workload. It is not unusual that teachers leave school at 7 or 8 o'clock in the evening on a regular day (whereas classes normally end at around 3:30, and school activities end around 5:30 or 6).

³Most of Hong Kong schools are “aided schools” that are financed by the government according to rather standard formulas of funding, but are managed by school-sponsoring bodies. The school-sponsoring bodies also chip in resources in the initial capital investment (20%) and are free to inject resources for non-standard items or projects.

(g) The newly introduced Liberal Studies, controversial though they are, seem to have brought about unusual effects. Liberal Studies were designed to be time allotted to learning critical thinking and rational analysis about various issues of social concern. Liberal Studies have been established as a compulsory paper for university admissions, hence guaranteed to occupy a space in student learning experiences. However, the examination requirement has prompted teachers to ask for a scope, and hence Liberal Studies are now conducted in four areas:

- Self- and Personal Development (personal development and interpersonal relationships)
- Society and Culture (Hong Kong and today; modern China; globalization)
- Science, Technology, and Environment (public health; energy, technology, and the environment)
- Independent Enquiry Studies (students' self-directed learning projects)

In practice, much of Liberal Studies class time is spent discussing current affairs. Students enter debates, where they learn to analyze and to debate. What teachers see as most important is the respect for differences in views. In a retrospective study of the political movement “Occupy Central” (2014, mentioned above), teachers in most schools are proud that, despite the severe split in society over political ideas, there was no split in schools, though debates were very serious. Teachers see this as the result of learning in Liberal Studies. However, there are voices that protest against Liberal Studies because of their critical nature, which is accused of politicizing the students.

10. CHALLENGES WITHIN EDUCATION

However, apart from the challenges mentioned above, there have been unfavorable evolutions within the education system:

- (a) The government is seen to be rather weak in advancing Hong Kong society at the social front. Education is no exception. The education platform of the incumbent Chief Executive, when he ran for the position in 2012, was “rest and relax.” That was perhaps meant to be a placation for the teacher groups (e.g., the unions) who complained about teachers' workload, and attributed that very much to the reform. In reality, little has been done in the last 5–10 years in order to continue the momentum of the reform, as will be explained below.
- (b) The promised reform in assessment, namely the public examination at the end of 12th grade, was successful only in securing foreign recognition for its quality and standards (mainly for admissions by overseas institutions), but has not done enough to match the changed curriculum ideology. Teachers complained that the expectations for the Diploma for Secondary Education (DSE, at the end of 12th grade) were too much and too difficult. On all counts, the DSE examination syllabuses, which are meant to be only curriculum guidelines (and involve little memorization, unlike what is commonly believed), have still preoccupied all students' time and energy at the senior secondary level. This defeats the intention of compressing the engagement in formal learning.
- (c) As was mentioned, the curriculum reform was decided first, and university admissions were negotiated according to the intention of the reform. All the tertiary institutions concurred that they would modify the admissions criteria in order to give room to broader learning experiences, and would use the additional year for common core, generic learning. Over time, universities have maintained keen competition for students with higher scores. There have been mutations of admissions criteria, which virtually pay only a little attention to student achievements beyond

examination scores. This has not only added to the pressure for examination scores, but also sent a very bad message to secondary school students.

- (d) There is also a generational issue among teachers and principals. Most of them who experienced the rather dramatic curriculum reform over the past decade are largely “baby boomers.” They are the retiring generation. Their successors are those who went through the old curriculum (the first cohort since the reform graduated in 2016), and hence did not experience the transformation process. There is a high probability of things going back to what they were, and there is an urgent need to reiterate the basics of the reform among new teachers and new principals.

11. THE EDUCATION 2.1 INITIATIVE

It is in this context that a group of 17 individuals came together and launched an initiative named Education 2.1. The initiative reflects further developments of the change in society, but also addresses the major obstacles for further development of education. Although the initiative was just launched in July 2016, it has attracted the widest media coverage, and has received no attack (which is rather unusual in today’s Hong Kong). Hence, it is promising that the initiative will bring some impacts. Meanwhile, the initiative also reflects the major concerns (mentioned above) and the directions for the breakthrough. The following are the basic features of the initiative.

- (a) The 17, chaired by the former Financial Secretary of Hong Kong (who was also the chairman of the Education Commission when it led the last reform), includes two prominent CEOs in the business sector, five academics, five principals, one early childhood expert, two retired senior government officials, one seasoned researcher, and one known leader in public relations. The five academics come from different areas of expertise—education policies, technology and learning science, social welfare, economics, and lifelong learning, with two of them a leader or former leader of universities. The powerful “cast” of the group reflects a broad spectrum of non-government expertise, and the tacit aspiration that “Hong Kong should succeed despite the government!”
- (b) In what is nicknamed its “manifesto,” the initiative’s statement started by delineating the mind-boggling change in society. “Society has changed” is still the main theme. Rather different from the last reform, the group is this time more specific about the challenges.

Society has changed! The World has changed! Globalization, economy transformation, technology advancements, social disparity, generational difference, a rising China, have all contributed to a future which is volatile, uncertain, complex and ambiguous.

The change in the economic dynamics, unpredictability of careers, rapid changes in family relations, lightning breakthroughs in technologies, infiltration of the new media, and so on, have posed unprecedented challenges to human lives, and indeed has caused changed values and norms in the new era. Meanwhile, the changes have also brought about new horizons and new hopes for life.

- (c) Meanwhile, compared with the last reform,⁴ Education 2.1 is also more explicit in laying out the relationship between a changed society and the development needed for education.

[T]o the younger generation, all these have created new opportunities to breaking away from the conventions, finding their own selves, exploring new possibilities, and identifying new ways of serving society. They are emerging as a new generation with new meaning of life, living with new

aspirations. They face tasks of learning apt to the new era. They look forward to education of a different kind.

- (d) In addition to the general visions about education in view of a changing society, the initiative put forward four suggestions. The four suggestions represent areas where (i) breakthroughs are necessary and urgent, (ii) breakthroughs are possible, and (iii) any change will not add to the workload of teachers or “rock the boat” as was the case in the last reform. They are entry points rather than comprehensive plans. These will be further elaborated below.
- (e) Given that this group is non-governmental, the initiative does not target only the government, and has taken the government as one of the stakeholders. There are elements of change that could happen only at the school level, and others that are due to cultural traditions as reflected in parents’ perceptions. The groups seem to be rather conscious of their own positions, try to “bite the bullet,” and try to tackle difficult issues such as the culture’s examination-orientation. Again, the reform is shaped along the lines of “despite the government.” In a way, it is a test case for a non-government initiative for macroscopic changes.

Unlike the last reform, the initiative lays out the relationship between learning goals and the means/modes of learning. The overall target goal is to focus on “people quality,” which comprises three dimensions—*knowledge and skills*, *attributes*, and *values*—in order from outside to inside a person.

Substantial Knowledge

Purpose: to form the rational basis for work and life

Examples of targets: trilingual and biliteral competency; T-shaped knowledge—broad knowledge base and deep understanding of a specific knowledge area; knowledge to master technologies, but also to go beyond technologies; knowledge of geography, economy, history, and culture of the society, the nation, and the world

Learning mode: Knowledge is largely learned through the formal curriculum, but is now learned also through the media, by self-learning.

Comprehensive Attributes

Purpose: to survive, serve, thrive, and reform

Examples of targets: critical thinking, team spirit, appreciation of differences, perseverance, creativity, humility and self-confidence, self-management and self-control, and so forth

Learning mode: Attributes are basically learned through experiential learning, in classrooms and schools and beyond, in society, and also through cross-society learning in Mainland China and overseas.

Respectable Values

Purpose: to create a better future and lead a meaningful life

Examples of targets: integrity, responsibility, commitment, caring, respect for different values, tolerance of diversity, justice, rule of law, peace, and so on

Learning mode: Values are acquired through implicit learning, influenced by school cultures, teachers’ role models, the media, and other tacit exposures.

⁴It should be noted that three of the 17 were leaders in the last reform.

12. THE SUGGESTIONS

Education 2.1 offered four suggestions.

Suggestion 1: Crack the examination-oriented culture.

This involves basically two dimensions. First, simplify the public examination (DSE, Diploma of Secondary Education) by reducing the unnecessary contents in the syllabus and elements in the school-based assessments. Some papers should change from “graded” to “pass/fail.”

Second, convince universities to consider examination scores as only one of the many criteria. Although the last reform, giving an additional year to universities, was to provide room for generic competencies and humanities across the board, and this has been agreed to and practiced by all universities, there are mutations of the situation that have caused concerns. For example, some programs have played down elements beyond scores, such as interview results and student learning portfolios. Some institutions tried to play down the weighting of Liberal Studies, Applied Learning, and Other Learning Experiences during admissions. All these have sent very unfavorable signals to secondary school students, and discouraged non-academic learning experiences.

Suggestion 2: Create an equitable path to higher education.

This is to rectify the present situation, where students admitted to the eight public universities receive handsome government subsidies, whereas students in private institutions receive zero subsidy, simply because their examination scores are not good enough. There are two major parts of the suggestion. First, to create vouchers to all higher education students who are not in public universities. Second, to allow credit transfer across institutions in Hong Kong (which is not possible at present). This suggestion is underpinned by the fact that every year, only about 6% of the secondary school graduates seek employment. Higher education has already become massive.

Suggestion 3: Enhance professional support for student learning.

This suggestion comprises three dimensions: to construct schools into learning hubs, and to be a coordinator of all kinds of student learning experiences; to provide support and resources to teachers to allow them to play a strong professional role as learning facilitators; and to build Hong Kong into an education hub.

The basic theme in this suggestion is to unleash schools’ and teachers’ professional capacities, and allow them to face the unprecedented enormous task of students’ diverse learning experiences. This includes substantially increasing the number of professional teachers, as well as expanding the paraprofessional, support, and administrative staff.

Suggestion 4: Construct a “Big Education” platform for wider participation of the community in education.

This is to build upon the existing community/school partnerships, to expand to all students, and to create more partners for students’ experiential learning. This would embrace the business sector and NGOs, and other organizations that would take on education as a social responsibility.

This suggestion also includes an element of positive discrimination toward the deprived. This is essential, because if experiential learning becomes prominently necessary, children from deprived families or with special needs would suffer.

The Education 2.1 initiative was just launched at the beginning of July 2016. As mentioned, it has aroused broad interest from the media and the general public. However, what impact it would bring about, and how that would happen, are yet to be realized. At least, as some responses indicate, this is first a wake-up call about the existing and forthcoming challenges to education and second a “positive voice” amid negative sentiments against education in society.

13. CONCLUSION

Hong Kong has been among the top in international comparisons, both at basic education (PISA, PIRLS, TIMSS) and higher education (e.g., QS) levels. The last Reform, launched in 1999 and just completing its first cycle in 2016, has attracted international attention for its vision and strong conceptual unpinning, the alliance built among all sectors of society, and its meticulous and sustained implementation process. The school-based model also distinguishes the system from both Singapore’s and Shanghai’s, the other two “top performers” in education. Hence there are rich professional resources embedded in the Hong Kong system.

However, the Hong Kong case also illustrates that there is no end to reforms in education. Society keeps on changing, and at an increasingly faster pace. Social environments are not always conducive to a peaceful and steady development of education. Meanwhile, there are huge generational gaps among teachers, and between teachers and students, and there are often differences between parents and educators. People change, governments change, but education has to move forward.

Meanwhile, it is increasingly felt that, facing the 21st century, what is expected of our next generation is much more than skills or competencies. They have to be different people facing a different world.

