

Twenty-First Century Education: A Comparative Study of Six Cases

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In the introduction to his book *Comparative education: The dialectic of the global and the local*, Robert Arnove explains the three dimensions of comparative and international education: scientific, pragmatic, and global and the significance of comparative education. These three components are a framework for the study of global education and offer a better understanding of international education systems while contextualizing the systems and determining which aspects to incorporate or avoid to improve educational experiences locally and internationally (Arnove, 2013). The case-studies in *Teaching and learning for the twenty-first century: Educational goals, policies, and curricula from six nations* (Reimers and Chung, 2016) present the context, curricula, and outcomes needed to perform a comparative study of the educational systems of six countries. This paper will review the six case studies in the Reimers and Chung (2016) book with an emphasis on context, trajectory, and character of twenty-first century education in the six countries described in the book.

### Case Studies

#### Singapore

Singapore's education system is focused on 21<sup>st</sup> century skills and has salient characteristics worth discussion. Singapore has gone through several phases since its independence in 1965. In striving to achieve 21<sup>st</sup> Century Competencies (21CC), Singapore approaches student development holistically and has expanded and enhanced educational services to reach all students with an emphasis on citizenship, ethics, and learning to learn.

Some other noticeable characteristics of Singapore's education system include collaboration with all stakeholders and the inclusion of all students. Schools reach out to parents and to the community "involving them in the holistic development of the children" (Tan & Low,

2016). Singapore also increased the quality of vocational education ensuring that education would be equitable and all students could reach their learning potential. As part of holistic education the Ministry of Education created a plan called the desired outcomes of education (DOE) which describes what Singaporeans should embody once completing the education system.

Singapore places a larger emphasis on the 21CC than on content: “to create the space for critical thinking in the classroom, the content of all subjects was reduced by 30%” (Tan & Low, 2016, p. 45). This space for autonomy extends to information and communications technology (ICT), where schools are given autonomy to take ownership of the implementation of ICT in their schools. Additionally, professional development is an important aspect ensuring pre-service preparation produces thinking teachers who are capable of creating learning environments and leading the students into 21CC. Once they are in service, teachers are given the space and time for collaboration and professional planning: up to two hours per week. Stakeholders also visit other schools in order to create comparative case studies and determine what to replicate. We see that the empowerment of teachers school leaders families the collaboration between them all is important and helps shape the students for 21st-century learning.

### **China**

China shares characteristics with Singapore while also being distinctive. Like Singapore, China is currently focused on 21<sup>st</sup> century skills and has a fairly new education system it established “from scratch” (Wang, 2016) following the Cultural Revolution. Both Singapore and China have taken a holistic approach to student development with foci on citizenship, ethics, and learning to learn. Additionally, both have expanded and enhanced educational services to reach all students.

China also has characteristics differing from Singapore. Although China's MOE develops the national curricular framework, there is local autonomy for localities to map out their own pathways to implement the curriculum which allows for local innovation. While China maintains a focus on 21CC, it continues to be textbook driven and with an emphasis on the high-stakes college entrance exam (Wang, 2016). And while Singapore has established high standards for their educators, China has low minimum requirements: primary school teachers need only secondary education. Yet there is pedagogical training eight times a year for teachers and sixteen times a year for master teachers.

### **Chile**

Chile has encountered a few challenges in the implementation of 21CC. First, the market-oriented Chilean education system creates a disparity between schools and enhances inequity. There are three school systems, all drawing funding from the same public resources: public schools, subsidized private schools, and non-subsidized private schools. The market mechanism was put into effect during the Chile's dictatorship. The market/voucher system has been slightly reformed in 2006 due to student protests, over twenty years since the transition to a democratic government in 1990.

Another challenge in Chile's 21CC implementation of intrapersonal and interpersonal skills. Assessments such as SIMCE shift the focus to cognitive competencies and delay the instruction of intrapersonal and interpersonal skills. Moreover, there is a lack of focus on the "soft skills" competencies other than what occurs naturally through citizenship and technology instruction and projects.

Third, vocational education has improved but needs further improvement. Vocational education is stronger through more focused, location-based education implemented in the last

two years of school with a more narrow list of forty-six career programs. However, there is a perception that the careers offered are more global than local – Chile's economy is mostly comprised of “small traditional business and an informal economy” (Bellei and Morawietz, 2016, p.119). Additionally, vocational students are failing to learn how to learn or to develop a love of learning.

Finally, there is a lack of teacher support. Many teachers, particularly in low-income schools, teach basic skills and either do not know how to leapfrog the students or are unable to. Other teachers remain reluctant to adopt the reforms as they have not been well informed of the purpose and were not a part of the development. These teachers continue to subordinate the soft skills to the more “academic” cognitive competencies.

### **Mexico**

Mexico's challenges also seem to stem from inconsistency. With almost two million teachers serving over 33.6 million students in over 250, 000 schools, 21CC is still not common or even familiar (Cardenas, 2016). Cardenas (2016) writes of this lack of familiarity, “94 percent of parents reported they have never heard about this concept, nearly 46% of teachers and approximately 40 percent of school principals reported the same” (p. 133). However, when advised of what 21CC entailed, the majority of parents, teachers, and principals surveyed agreed that 21CC skills are important (Cardenas, 2016). This positive view of 21CC is promising for implementation of competencies such as “creativity, innovation, critical thinking, technological literacy, assertive communication, and even metacognition” (Cardenas, 2016, p. 134), however Mexico is not consistent with implementation. Public opinion of soft skills is favorable, but the instructional focus is on technology education. Indeed, 21CC are addressed in the curriculum however, there is no clear mapping between competency or goal and instructional methodology.

**India**

India's education system is the National Curriculum Framework (NCF2005). The NCF2005 education model offers a balance between 21CC and holistic values, such as dignity of labor, which is meant to help transition a vast and traditional nation into globalism. The NCF2005 includes frameworks to transition students from academia to work, social and economic empowerment, dignity of labor, critical thinking., aesthetic appreciation, democratic citizenship, autonomy, and peace. NCF2005 is a tool for social change and the smooth transition for autonomy and prosperity in an increasingly globalized world. While NCF2005 prioritizes social change over employability. However, as with many sweeping educational reforms, a lack of consistency and contextualization of the curriculum impedes success.

**United States**

The United States has an educational system influenced by federal mandates while maintaining local autonomy which continues to focus on high stakes tests. This focus on testing contradicts the 21CC in Massachusetts (and by extrapolation, the US) focus on cognitive, interpersonal, and intrapersonal skills with an obvious lack of leadership skills (Reimers & Chung, 2016).

Reimers and Chung (2016) found that many of the standards being implemented in Massachusetts require lower cognitive “most of these standards would fall under the lower category of Comprehension or Knowledge rather than the higher order activities “ (p. 202). Furthermore, the authors found that a number of Massachusetts leaders agreed that the 21CC were important, but were aware of two challenges. According to Reimers and Chung (2016), one major challenge was the 21CC “were not the focus of the assessment instruments used to establish accountability” (p. 201); the other was that the school day was too short.

### **Comparison**

There are many similarities among the six cases. All six countries understand new skills are needed for the future in a global economy where the skills have shifted to interpersonal and intrapersonal skills. Countries such as China and Chile are working against the effects of previous regimes. Mexico and Chile struggle with poverty and those students who perform below age level or need to work rather than go to school (Cardenas, 2016; Bellei, C. & Morawietz, 2016).

One issue similar in many countries is the lack of clarity, transparency and ownership between all the stakeholders. While very specific with its competencies, even Singapore is hindered by the parental focus on high-stakes testing. One cause of the disenfranchisement of stakeholders and poor implementation is the lack of teacher development, preparation, and pedagogical strategies to implement the 21CC rather than to teach basic skills. Singapore is an outlier as they have high standards, training and preparation for their teachers. Additionally, the continued focus on high stakes testing in Singapore, China, and the United States is an unfortunate commonality. Yet, the holistic and civic foci espoused by Singapore, India, Mexico, and Chile are hopeful.

### **Conclusion**

Reimers and Chung (2016b), state the implementation of 21CC as evidenced by the countries in the book is weak. Singapore finds it challenging to engage parents and students to a system different from what they believe is a meritocracy. China continues high stakes testing leading to weak efforts towards 21CC in the classroom. Chile's teachers are pedagogically unprepared to teach 21CC while teachers in India have clear curricular goals but maintain a colonial mindset and, therefore, hierarchy. Mexico lacks curriculum design and consistency and

ownership from parents. Of the United States, Reimers and Chung (2016b) “suggest that the difficulty in achieving the goals of a twenty-first-century education, as expressed in the many documents produced in recent decades calling for such reform, is due to the lack of an explicit and effective systems theory that support an adequate implementation strategy” (p. 239).

Clearly, the need for an effective systems theory is necessary globally. Arnove provides a framework. According to Arnove, there are three dimensions of comparative and international education: scientific, pragmatic, and global. The Scientific Dimension focuses on building theories about the relationship between school systems and their local societies: family, school variables, educational achievement and attainment, and socioeconomic status. All of the nations studied made assumptions of school-society relations. How can Singapore encourage parental acceptance of 21CC? Why does Chile offer vocational training when it is a small business economy? How will 21CC or the pedagogical methods used to implement them affect income inequality? Arnove’s Pragmatic Dimension involves researching what works well or what mistakes were made to implement or avoid those policies and processes in one’s own society. Of course, not everything is transferable cross-culturally. But some can be generalized and appropriated. Mexico and Chile both attempt to develop citizenship competencies, but in different ways. Arnove explains that International Education: The Global Dimension is concerned with contributing to international understanding and global peace. As boundaries become more fluid and globalization increases, it is vital to understand how socio-economic forces in one locale affect others. This seems to be the least relevant for the case studies presented.

Regardless of theoretical frameworks or implementation strategies, 21CC skills reflect attributes desired by 21<sup>st</sup> century employers. As change from 20<sup>th</sup> century models ensues,



stakeholders may be resistant to the change even when they admit to its urgency. Clearly, consistent implementation with instruction and support to all levels of stakeholders is crucial as is communication and preparation.

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