

Commentary

Singapore's Educational Reforms: The Case for Un-Standardizing Curriculum and Reducing Testing

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Abstract

Is there validity to the claim that national standardized curriculum and testing will bring about the necessary education reform in the United States? To answer this question, the author has looked at and learned from Singapore, a country that has traditionally excelled and outperformed U.S. students in the international comparative studies. This commentary seeks to address the notion that if we could set high nation-wide standards, it will improve the quality of education that students get, close the achievement gap, and make the U.S. a more competitive player in the 21st century. Through examining the past and present educational reforms in Singapore, this commentary will expose the hidden costs associated with obtaining and sustaining high academic achievement in standardized curriculum and assessment.

Keywords

National Standards, Assessment, Singapore

Introduction

One phenomenon with competing in the 21st century globalized economy has led government, education and economic leaders to become concerned with improving the workforce in America. This is exacerbated by discouraging results in the ranking of the U.S. on international comparative studies of academic achievement, such as Trends In Mathematics and Science Study (TIMSS) and

Program for International Student Assessment (PISA). These studies, as many point out, indicate the failure of the U.S. educators, one well-known problem being achievement gaps. U.S. President Obama (2009) said in an address to Congress in early 2009, "This is a prescription for economic decline, because we know the countries that out-teach us today will out-compete us tomorrow."

The latest statistics from the “Nation’s Report Card,” the National Assessment of Education Progress (NAEP), show that the No Child Left Behind Act (NCLB) has not narrowed achievement gaps, which have stayed about the same since 1970 (Dillan, 2009). Meanwhile, data from SAT scores (Marklein, 2009) suggest that since NCLB was officially signed in 2002, achievement gaps in the United

States have widened. The data in Table 1 show the most recent SAT scores of the different ethnic groups and how they have changed over the last ten years. Some groups have remained unchanged, whereas other groups have increased significantly. These reflect SAT scores before NCLB, and 7 years after NCLB was passed as cited in USA Today on August 26, 2009.

Table 1

Gains in SAT Scores for Different Ethnic Groups in the Last 10 Years

	1999	2009	+/-
Asian	1058	1103	+45
White	1055	1064	+9
Latino	927	916	-11
Black	856	855	-1

The No Child Left Behind Act was passed in part to raise the standards of education and to close achievement gaps in the U.S. through greater accountability. This led to the implementation of state curriculum standards and assessments, which manifested obvious flaws in the last few years without evident results. Since individual states specify their own curricula, they could set the bar lower for their schools, which is the opposite of what the NCLB goal was—to raise standards.

To correct this, there are now (2009) ideas on standardizing curriculum at the national level. Proponents of national standards often make the argument that if we set high nation-wide standards, surely, it will improve the quality of education that students get, close the achievement gap, and make the U.S. a more competitive player in the 21st century.

Is there validity to the claim that national standardized curriculum and testing will bring about the necessary education reform in the United States? To answer this question, the author reviewed and learned from education policy in a country that has traditionally excelled and outperformed U.S. students on international academic comparative studies.

Singapore Case: Educational Reform

Singapore has long been recognized internationally as a nation whose tested students have excelled on international comparative studies of academic achievement (Barber & Mourshed, 2007). Singapore math outcomes have gained recognition around the world, and “Singapore Math” is currently (2010) adopted by different school districts in states such as California, Illinois, New Jersey, and Massachusetts. Since its independence in 1965, Singapore’s students have been able to

achieve impressive educational feats. Singapore's students have improved the tested literacy rate from 68.9% in one language in 1970 to 92.5% in 2000 (Yamashita, 2002). Some have attributed the accomplishments to a tradition of a very well defined national curriculum in language.

With such an excellent academic reputation, Singapore must surely be content with its education system, academic outcomes, and workforce. If so, why has the government been aggressively pushing education reform?

As the United States is moving toward centralization, standardization, and nationalized curricula, Singapore has implemented an educational reform of moving away from a centralized approach toward decentralizing its education system and giving greater autonomy to school leaders.

Schools are now moved toward "independence," and can also be "autonomous," as well as "government aided," signaling various degrees of autonomy. By 2006 Singapore leaders had moved away from emphasis on standardized testing through their "Teach Less, Learn More" vision, and preparing students for life, rather than teaching more for tests and examinations. Most recently (2009) in an effort to promote the "Teach, Learn More" vision, primary 1 students no longer need to take semestral examinations, and primary 2 students will be slowly "eased into it."

The Ministry of Education described their effort on www.moe.gov.sg:

It is about shifting the focus from "quantity" to "quality" in education. "More quality" in terms of classroom interaction, opportunities for expression, the learning of life-long

skills and the building of character through innovative and effective teaching approaches and strategies. "Less quantity" in terms of rote learning, repetitive tests, and following prescribed answers and set formulae.

In 1997, the policy makers in Singapore promulgated the "thinking schools, learning nation" vision. After a visit to the U.K. and the U.S., the then prime minister of Singapore, inspired by the United States, a paragon of individuality and creativity, stated in a speech (Goh, 1997):

Their best schools produced well-rounded, innovative students by putting them through a diverse and challenging curriculum. Their academic institution and research laboratories are at the forefront of ideas and scientific breakthroughs, infused with entrepreneurial spirit. And they have developed strong links between academia and industry, society and government. We in Singapore should learn from these strengths of the American system.

During 2004, the Ministry further fine tuned the "thinking schools, learning nation" vision to "Innovation and enterprise" and in the new focus, Singapore leaders are pushing "Innovation and Enterprise," which they defined as:

... an attitude of mind, developing habits of mind. At the core of it, innovation and enterprise is firstly, about developing intellectual curiosity amongst all our children, a willingness to think originally. Second: a spirit of initiative, and a willingness to do something differently, even if there is a risk of failure ...

Why would a nation with academic excellence decide on such a drastic shift in education policy? Did years of sustaining high academic outcomes nationally and at the top of international comparative studies accumulate associated costs, some of which are exceedingly high and perhaps irretrievable?

Costs of National Standardized Curriculum and Testing

Whether Singapore will succeed in its present (2010) education reform remains to be seen. However, the price of high academic performance can be staggering (Belfield & Levin, 2002). The author examines the price of obtaining and sustaining high academic achievement in standardized curriculum and assessment and should give pause to leaders in the United States about rushing to pursue national standards and national testing.

Creativity

The government leaders in Singapore “are united in lamenting the apparent lack of creativity and thinking skills among students and members of the workforce.” (Tan & Gopinatham, 2000), and have noted Singaporeans’ general “inability to perform without clearly defined goals” (Gross 1999). With the up and coming nations around Singapore, such as China and India, Singapore businesses can no longer remain competitive in a mechanical and manufacturing economy. Reproduction of goods and services are available in other countries at a fraction of the cost it takes to make the same goods in Singapore.

Policy makers recognize that in order for them to thrive in the future, they would have to create and innovate. In the face of fierce international competition, Tharman (2004) said that they had to learn to create new opportunities, which will be crucial to Singapore’s survival. In a speech on the impact of globalization, Tharman, the then Minister of

Education said, “... the societies that come out ahead will be those that look forward, and look for ways of creating opportunities, new opportunities, for their populations...”

The new Singapore education reform focuses much on creativity, in which thinking skills were taught under the “thinking program”, and no grades were given. However, critics have suggested that the exam-oriented culture in Singapore is too prevalent to ignore the likelihood that thinking skills may eventually be assessed through standardized tests, and students are prepared for these tests through drilling (Tan, 2006). From this perspective, many Singaporeans seem to believe that the perfunctory implementation of a new subject to the national curriculum will not precipitate a cultural change, even if the subject was “Creativity.”

Howard Gardner (2008) said at an oral presentation that creativity could be prevented by “saying that there is only one right answer and by punishing the student if she or he offers the wrong answer. That never fosters creativity.” Tharman also acknowledged this in a 2004 speech, and stated that Innovation and Enterprise will not happen unless Singapore’s current culture changes:

But this may go against the general culture of wanting ‘orderliness’ within the classroom, where students take copious notes from the teacher or get copies of prescribed answers to memorize for the examinations. This is unlikely to groom a generation of young Singaporeans who can think on the move and seize opportunities.

Needless to say, it is challenging to move away from the prevalent and institutionalized culture of standardization, to more freedom of expression, creativity, and innovation. “Creativity cannot be taught, but it can be killed” (Zhao, 2006, p. 30). Creativity is

now part of the national curriculum in Singapore, implemented with the same rigidity already in place, with limits on curricula time, and boundaries on topics.

Critical Thinking

Singaporeans are uncomfortable with “questioning assumptions”, and are “more conforming than independent. They are not curious about most things” (Tharman, 2004). Only about a third of science teachers teach problem solving regularly, as they are more concerned about covering the science syllabus (Lee, Tan, Goh, Chia, & Chin, 2000). Teachers in Singapore focus on drilling and getting their students to pass their exams (Ho & Lin, 2004). If this trend of testing continues, “it is doubtful that thinking schools – where there is a culture of searching and learning inside and outside of schools, can be created” (Tan, 2006, p. 93).

The nature of a standardized curriculum and testing program necessitates a follower’s mentality, rather than a leader’s. It does not serve students well to question authority, question assumptions, or to discover alternatives to solutions. The result of standardized testing is that people will learn that it will best serve their self-interest by observing the national curriculum, and just doing what they are told. In other words, it is likely that a standardized curriculum produces “standardized workers.”

Diversity

One of the transformations in Singapore’s education policy is “flexibility and diversity” (Ministry of Education, 2009). The government recognizes what has long been its citizen’s complaint about the education system – the lack of diversity and flexibility. When students’ advancement and schools’ reputations depend on their academic achievement on standardized tests, schools’ resources are

usually directed at the tested content, leaving little time for exploration of diverse interests. It is much more efficient for everyone to get on the same bandwagon, learn the same things, in the same ways, and in the same amount of time, than to cater to individual needs, interests, and abilities.

When many resources are spent on getting students ready for national standardized testing, and there is little or no time for exploration of anything outside the national curriculum, it sends a signal to students and parents that the tested curriculum is more important than the untested. The result is more uniformity, and less diversity. For example, despite years of effort to promote arts and culture in Singapore, it is still largely lifeless and uninspired. Few people appreciate arts and design; perhaps they are not part of the national curriculum.

Mediocrity

Singapore does not produce Picassos, or Fumihiko Maki’s, who, though born in Asia, studied Architecture in the United States. These are outstanding people in their fields – the top 1% of people in their fields, whose contributions are world renowned and legendary. It is unlikely for a country to produce outstanding people in the area of arts and humanities, which they have had to deemphasize in their curriculum in order to make time for other subjects.

What about producing excellent mathematicians and scientists – the areas in which Singapore has been focusing on intensely and have proudly outperformed other countries. The list of Fields Medals shows t(outstanding mathematicians below 40) has only been awarded to one person from Japan, which is considered to be one of the countries whose students consistently top international

standardized tests in Mathematics. This man, Shigefume Mori, also happens to have spent a significant amount of time in the United States. Comparatively, there are 11 American mathematicians who have won the medal.

With all the tested academic brilliance in Singapore, one would think that the top earning people in Singapore are Singaporeans, and that the top positions and “talents” come from the local pool.

On the contrary, the Singapore government has recognized Singapore’s lack of talents, and has implemented the “foreign talent program”, which aggressively recruits “foreign talents” mostly from the west, who take up the top executive positions in various professional arenas in Singapore (Yao, 2007, p. 145). Much to the dismay of locals with equivalent credentials, the government leaders seem to believe that “... Singaporeans have to sharpen their entrepreneurial skills by learning from expatriate professionals” (Yao, 2007, p. 147) who are paid higher salaries in positions similar to those held by Singapore natives.

Equity

A major strength in the Singapore education system is the equitable amount of funding and high quality resources that get allocated to every public school, despite geographic region, or academic performance. One could argue that this may be a primary reason that educators have been able to narrow the achievement gap rapidly since the 1970’s (Quentin, 2003).

However, imposing the same set of standards across the board is not the same as providing equal opportunity. When a school's reputation or survival is based on standardized testing, the educators will likely aim most of its resources at students who are just below the baseline because they are the ones who will have the most influence on the school's statistics at the end of the day. That is, they are most likely to increase the percent of passes or any other point of reference, such as the percent of A’s.

The group of students at the bottom will likely get fewer resources because the students are deemed to have little influence on the overall statistics of the school. Similarly, the group at the top who are already way above the baseline will have fewer resources directed at them because they will not influence the statistics too much either. In this case, it looks like the educators and students in the school are doing well statistically, but the gap remains the same.

The 2007 TIMSS testing results showed that Singapore has a consistently wider gap (90th-10th percentile) than America in both the 4th grade and the 8th grade results, and in both Math and Science. The largest gap seems to be in 8th grade science, which is 273 points between the 10th percentile and the 90th percentile in Singapore, while the gap is only 213 in the U.S.

See Table 2.

Table 2

2007 TIMSS Results for 4th and 8th Math and Science at the 10th and 90th Percentile

		4th Grade			8th Grade			
	Country	90 th percentile	10 th percentile	90th-10 th percentile	Country	90 th percentile	10 th percentile	90th-10 th percentile
Math	Singapore	702	487	215	Singapore	706	463	243
	United States	625	430	195	United States	607	408	199
Science	Singapore	701	464	237	Singapore	694	421	273
	United States	643	427	216	United States	623	410	213

Conclusion

Considering the price for standardized curriculum and testing, the United States might be better served by preserving the creative elements that its education system and students seem to bring about. The Singapore examples show the erroneous notion that excellent academic achievement on standardized tests will make the U.S. a significant player in today's global economy. Despite a world renowned reputation, Singapore has set itself on the arduous course of education reform to

reduce national standardization and testing, and to reverse the adverse effect the present standardization seems to have had on Singaporeans' ability to be creative, innovative, and to think critically. While standardization may have brought about enormous and quick results to the academic achievements in Singapore in the last three decades, national standardized curricula and testing are not a "one size fits all" solution for every country, and will certainly not propel every country into being a key player in the 21st Century economy.

Author Biography

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