

# SINGAPOREAN EDUCATION FOR ECONOMIC GROWTH

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## 1. Introduction

By the 1990s, free market ideas of neocapitalism were put in practical use in all aspects of life including schools. Differing from the laissez-faire traditions of the nineteenth century, the neocapitalism calls for government interventions to promote and protect free markets. According to standards of the neocapitalism, education should be evaluated as an economic investment. In general, new educational proposals for the global economy consist of lifelong learning, learning societies, international and national accreditation of work skills, multiculturalism, international and national academic standards and tests, school choice and economic nationalism. Adherence to free market ideas has resulted in a reliance on the method of human capital accounting and government intervention to influence student decisions in the field of education. The primary groups supporting the global model of schooling are the OECD, the U.S., the U.K., Japan and Singapore (1). Singaporean school system combines an education in skills needed for contributing to economic development with the fostering of emotional attachment to work and to financial achievement. In this paper we will focus on some recent developments of schooling in Singapore for its economic growth.

## 2. Singaporean education system

The main policy objective for the Singaporean education system is to bring out the best in every student for developing sound moral values, good citizenship, and the skills necessary to meet the demands of a rapidly changing world. The national curriculum strives to carry out these goals. Pre-schools and kindergartens generally are private organizations. The education system follows the British model and provides the opportunity for formal education to all





pupils. Most children attend schools for an average of ten years. Entering a primary school at the age of six, a child spends six years learning basic subjects and beginning the study of English and a mother-tongue language. English is the language of instruction in most schools. After passing the Primary School Leaving Examination (PSLE) during the sixth year, the student enters a secondary school for four or five years of education.

At the secondary level, students are sent into one of three courses based on their PSLE results. The Special and Express courses take a four-year approach to preparing students for the Singapore-Cambridge General Certificate of Education "Ordinary" (GCE "O") level examination. The Normal (Academic/Technical) course prepares students to take the GCE "Normal" ("N") after four years of study. Students who do well on the GCE "N" level may continue for a fifth year of secondary school and then, sit for the GCE "O" level examination. Passing the GCE "N" or "O" level examinations, students have three options for post-secondary education depending upon their desires and qualifications. They may specialize in the technical or commercial subjects at the Institute of Technical Education (ITE) and get certificate programs. Students with appropriate GCE "O" levels may attend the polytechnics to pursue diploma courses or they may enroll junior colleges or pre-university centers to prepare for the Singapore-Cambridge General Certificate of Education "Advanced" (GCE "A") level examination. Although junior colleges may be considered part of post-secondary education, no diplomas are awarded. The course work focuses subjects that are usually found in the first year of university education in other countries (2).

The junior college as a form of education was first proposed in 1965 by the then Prime Minister, Mr. Lee Kuan Yew. A special program was set up to cater specifically to pre-university students. It was also felt that students would not only achieve academically but also learn to take on leadership. The first junior college was established in 1969. In the 1970s and 1980s there were seven colleges. Today there are fifteen junior colleges throughout the island nation (3).

In 1990, Lee Kuan Yew made all Chinese schools switch to English as their main language of instruction, with Chinese as their second language. All students had to master

English to be able to continue their studies in the polytechnics and universities. He also wanted to preserve what was good in the Chinese schools such as discipline, self-confidence, and moral and social values that had instilled in students, based on Chinese traditions, values and culture (4).

### 3. Education for a new economy

According to the *Straits Times* of March 16, 2001, in a debate on government's budget, Singaporean Education Minister Teo Chee Hean argued that the rigorous education system of Singapore prepared students well for higher education and a good future in the workplace. He quoted an unpublished study by Dr. Andy Green from the University of London Institute of Education comparing Singaporean data on education with data for the U.K. The study showed that more Singaporean students made it to high levels of education than British students did. In 1998, over 55% of each cohort of Singaporean students made it to the polytechnics and universities, compared with 36% of the student of the 18-20 age bracket in the U.K. The differences are stronger in math and science performance. Twenty percent of each cohort of Singaporean students gains Mathematics A level, compared with 7% of the British students. The Minister said that a strong quantitative grounding gave Singaporean students an edge in economy, and prepared them better for continuing education (5).

In a speech delivered at the Teachers' Day Rally on Aug. 13, 2001, Prime Minister Goh Chok Tong said that education was the key to the success of the new economy. It is vital for the national survival because they do not have natural resources. They need to be entrepreneurial, innovative and global-minded. They will increase education spending from the current 3.6% of their GDP to 4.5%. This translates into US\$1.5 billion a year, or an additional US\$2,500 per student. They have a good and high-quality education today. In the 2001 World Competitiveness Report, Singapore was ranked third in top 40 countries. In the Third International Math and Science Study (1999), their two secondary students were ranked first in math and second in science, out of 38 selected countries. In the last three years of Thinkquest, an international competition in which students design educational websites, they had the largest number of finalists after the United States. More re-

cently, their team of students emerged first in terms of number of awards won at the Thirteenth International Olympiad in informatics. Addressing 7,000 teachers at the Rally, the Prime Minister challenged the teachers to find new ways to imbue their charges with a creative and entrepreneurial spirit. They should, he said, come up with new methods of assessment which would encourage students to exercise their minds. The school project work must make the students more inquiring and self-reliant. As role models, the teachers must be innovative to shape lives and mould the nation (6).

### 4. Educational strategies

Singapore has always placed a premium on education and will continue to invest sufficiently in young people to prepare them for a future characterized by globalization. Emphasis on elementary and secondary is accompanied by the founding of universities. National University of Singapore was formally established in 1980 by merging Nanyang University (1955) and University of Singapore (1962). Since 1990 Singaporeans have had more opportunities to pursue tertiary education. Two new polytechnics, Tamasek and Nanyang, and two new universities, Nanyang Technological University and Singapore Management University, have been set up. In addition, working adults are now able to obtain a degree through the Open University Degree Program run by the Singapore Institute of Management. The Singaporean leadership has attracted to Singapore seven world class universities which have either set up independent branch campuses or partnered local universities in offering joint postgraduate programs. The seven foreign universities in Singapore are French Institute INSEAD, Technische Universitat Eindhoven of the Netherlands, Georgia Institute of Technology, MIT, Johns Hopkins University, University of Chicago Graduate School of Business and University of Pennsylvania Wharton School (7). Singapore has also lured training institutes that reflect a vocational approach such as the New York Institute of Finance and Motorola University. Waseda University, one of Japanese most prestigious universities, plans to offer courses in Asian business, entrepreneurial development and technology, which would be running by 2003. The city-state is growing closer to achieving its goals of attracting at least ten of the world's top universities, with expertise in



fields such as business and management, medicine, health care management and engineering. It has claimed to be Asia's leading education hub (8).

To make the environment in Singapore more pro-enterprise the authorities removed barriers and regulatory hurdles and put in place a more conducive tax regime to smooth the path for technopreneurs. They have made available world class research and development facilities. These are key to attracting investment and highly skilled researchers. Over the last decade the National Science and Technology Board (NSTB) has funded 13 research institutes to build technological capabilities in key clusters such as electronics, information technology and life sciences. In building up their pool of talent to drive the knowledge-based economy, they emphasize on teaching math and sciences in primary schools. Their universities have done well in producing graduates who meet industrial standards. The Ministry of Education has implemented the Masterplan for IT in education which would help students in process and create new knowledge (9).

To deal with the increasing economic competition resulting from free trade and easy flow of information, Singaporean leadership has envisioned the educational system of the United States, Europe and Japan as the benchmarks (10). Many Singaporean leading educators have graduated from the American universities. Tony Tan Keng Yam is one of the best-educated leaders. After graduating from the University of Singapore in physics, he earned a Master of Science in operations research from the MIT in 1964, and then he got a Ph.D. in applied mathematics in 1967 from the University of Adelaide. He held a number of important ministries including education, trade and industry, and finance (11). And he has been the second Deputy Prime Minister since 1955.

In his illuminating historical book, *From Third World to First*, Lee Kuan Yew told us that his generation was Anglocentric, and his son's one was more focused on America. His sons, Lee Hsien Loong and Lee Hsien Yang have been trained in the American military institutions and done postgraduate studies in colleges like Harvard and Stanford. Mr. Lee said that he lived under Pax Britanica and his younger generation had to cope with the Pax Americana (12) Lee Hsien Loong has been the first Deputy Prime Minister since

1990, and he is also the first assistant secretary general of the ruling party, the People's Action Party (PAP).

Tiny Singapore encountered many problems when it was granted independence in 1965. Today the former colonial trading post of Great Britain is a thriving Asian metropolis with not only the world class airline, best airport, and busiest port of trade, but also the world's fourth highest per capita real income. In the account of his extraordinary achievements, former Prime Minister Lee told us that when he took office as the Prime Minister in 1959, Singapore's per capita GDP was US\$400. It climbed to more than US\$12,200 in 1990 when he stepped down. And it kept increasing to US\$22,000 in 1999 at a time of immense political and economic changes in the world (13).

Noting the economic uncertainty of the world today, the ruling party pledge on Oct. 19, 2001 to launch a new economic plan to secure the future of Singaporeans. Its new economic programs will sustain growth, create jobs and increase wealth. It will invest an extra \$1.5 billion every year in education. The government will open a fourth university and a fifth polytechnic (14)

## 5. Conclusion

Singapore is a small island nation with no natural resources. It has overcome many odds to create a society which many historians have never seen. Now it is one of the world's biggest trading nations. Its citizens enjoy a very high living standard in a safe and secure environment. This achievement has been obtained through education for economic development. The success of a school is achieved by the concerted effort of the school advisory committee, principals, teachers, parents, students and alumni. The school learns that it gets involved in and contributes to the development of community. It is no longer a passive entity. It helps realize the Singapore Vision in the Twenty-first Century, or Singapore 21 (15).

Over the years Singaporean education system has undergone many changes as its economy developed. In a global economy which is more knowledge-based, innovation and new ideas will play a very important role in creating wealth for Singapore. They need to be responsive to changes and pick up new knowledge and higher-value skills required by the new economy. The world economy is now experiencing a slowdown.

Singapore is an open economy that is vulnerable to changes. They have begun to feel the effects of the economic challenges. One of the biggest concerns facing them today is to stay employable. They have tried to adjust their experience accordingly. The Singaporean government is striving to upgrade and revitalize their economy. ■

## Notes

(1) Spring, Joel, *Education and the Rise of the Global Economy*, NJ, 1998, p.x.

(2) Southeast Asian Minister of Education Organization website, "Republic of Singapore Education System" <http://www.seameo.org/members/singapore.htm>

(3) Singapore: Ministry of Education, "How the Junior College Started" <http://www.moe.edu.sg/preU.htm>

(4) Lee Kuan Yew, *From Third World to First: The Singapore Story, 1965-2000*, New York, 2000, p. 152-53.

(5) <http://strait-times.asia1.com.sg/prime-news/0,1870,30105,00.html>

(6) Speech by Prime Minister Goh Chok Tong at the Teachers' Day Rally at the Singapore Expo on Friday, Aug. 31, 2001, "Shaping Lives, Moulding Nation"

(7) Supplement to PM Goh's National Day Rally Speech 2001, "ore Tertiary Educational Institutions" <http://www.gov.sg/SGIP/NDR/p33.htm>

(8) Alan Brender, "Singapore Adds Value with Elite Japanese University" *South China Morning Post*, Sep. 29, 2001.

(9) Ministry of Education, Keynote address by Peter Chen, Senior Minister of State for Education and Trade and Industry at the 10<sup>th</sup> Global Conference on the Harvard Project for Asian and International Relations, Aug. 27, 2001, <http://www1.moe.edu.sg/speech/2001/sp28082001.htm>

(10) Spring, J, Ibid. pp. 81-82

(11) K. Mulliner and Lian The-Mulliner, *Historical Dictionary of Singapore*, London, 1991, p. 147.

(12) Lee Kuan Yew, Ibid, p. 384

(13) Lee Kuan Yew, Ibid, p. XIV-XV.

(14) Lydia Lim, "Economic Plan Part of PAP Manifesto," <http://strait-times.asia1.com.sg/prime-news/story/0,1870,78354,00.html>

(15) Wong Kan Seng, "Singapore Education in the 21<sup>st</sup> Century" *Presidents & Prime Ministers*, Jul/Aug 99, vol.8, Issue 4, p.19, 2p, 1bw. Database: Business Source Elite.