Integrating Human Capital into National Development Planning in Singapore

Introduction

When Singapore gained independence in 1959, its literacy and morbidity rates—two important measures of human capital—were similar to those of other lower-middle-income countries. In 1960, the port city-state’s per capita gross domestic product was USD428, less than the world average of USD453 and less than one-sixth that of the United States.1 There was little reason to expect that this small country (716 square kilometers in area) would become a world leader in the health and education of its people.

The government of the nascent state inherited an educational system divided along ethnic lines. English, Chinese, Malay, and Tamil schools each had their own curriculum and language of instruction. The country faced a host of epidemic diseases common to tropical countries, such as malaria, dengue, cholera, and viral hepatitis. Poor education and health outcomes were major constraints on economic development.

Modernizing the economy and achieving prosperity required building and harnessing Singapore’s human capital. The government charted a new path for Singapore, adopting a fast-paced industrialization strategy to create employment for an unskilled workforce and generate export earnings. Implementing that plan required overcoming fundamental challenges such as ethnic tension, high unemployment, regional instability, and turmoil caused by Britain’s withdrawal from the former colony. From these difficult and uncertain beginnings, Singapore would attain the highest score of any country in the world in the World Bank’s 2018 Human Capital Index, which took into account several health and education indicators. This delivery note examines some of the strategic decisions and policies that contributed to Singapore’s success (Yusuf 2020).

Singapore’s experience illustrates the “whole of government” approach that, according to the Human Capital Project, can overcome challenges countries face in developing their human capital. The three elements of this approach are continuity (sustaining effort across political cycles), coordination (ensuring that sectoral programs and agencies work together), and evidence (expanding and using the evidence base to improve and update human capital strategies). This delivery note focuses on the continuity and coordination that defined Singapore’s success (Human Capital Project 2019a).

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Development Challenge
In the 1960s, Singapore had limited human capital. Its poor educational system limited its economic development, and its people lacked access to quality, affordable healthcare.

Delivery Challenges
Singapore had to grapple with several delivery challenges as it struggled to improve its health and education systems and develop its human capital. A whole of government approach was essential to the country’s success in overcoming these potential obstacles.

Change in priorities or lack of commitment
To improve human capital, Singapore had to set clear policies to guide ministries and agencies and ensure that those policies were consistently implemented over time. Sustained commitment was important because it could take many years for investment in education and health systems to yield clear results. Political dynamics, resource shortages, and other factors could stand in the way of such continuity.

Inter- and intragovernmental relations
Developing human capital quickly and effectively required strong coordination across the government and among Singapore’s development partners, as well as investments in sectors beyond education and health that can help citizens thrive (Human Capital Project 2019b). This can be difficult, however, as policies could be siloed within a certain ministry or agency that might resist sharing authority with other institutions.

Stakeholder engagement
Singapore wanted to develop its education and health systems to meet the needs of its citizens and to advance its industrialization strategy, which required an educated and healthy workforce. The challenge was how to communicate effectively with beneficiaries and stakeholders about their needs and tailor policies accordingly.

Financing
A fundamental obstacle to developing Singapore’s health and education systems was allocating sufficient money to those systems. Providing high-quality services while controlling costs could be a daunting problem. Singapore did not have reserves of natural resources it could use to fund investment in health and education. The government needed innovative financing arrangements to ensure that its people’s needs were met.

Addressing Delivery Challenges
To develop its human capital, Singapore built its education and health policies on a clear vision of its economic future, focused on coordination within government and with industry, and refined goals and adapted policies accordingly over time.

Building commitment across government
Focused development planning encouraged coordination and commitment among government institutions. Singapore’s leaders built their education and health policies on attracting multinational companies that would bring in jobs and investment. In 1961, Singapore adopted its first four-year State Development Plan. Created in consultation with the World Bank and the United Kingdom, which helped finance the plan, this document spelled out an export-led industrialization strategy to prepare Singapore to manufacture high-value goods (Parliament of Singapore 1960). The plan articulated a clear vision of how the government wanted to develop its human capital. The ideal Singaporean worker would have basic education and technical training to suit the needs of multinational companies and be healthy enough to work in a factory. To create this workforce, Singapore would focus on schooling, inculcating technical skills, and eradicating endemic diseases. Forty percent of the roughly USD870 million committed to the development plan was earmarked for the education and health sectors (Lim 2017). Singapore allocated approximately 26 percent of its USD358 million budget for 1965 to education and...
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14 percent to health services and public health (Lee 2018).²

Within the context of the development plan, there was institutionalized coordination within the government. Each month, permanent secretaries of each ministry met to focus on matters that required cooperation of more than one ministry. The government established a culture of teamwork, expecting that ministers would work together on matters that required interagency cooperation (Haseltine 2013).

Over the years, Singapore refined its development plans, reassessing needs and setting new goals to guide government institutions. As the economy grew, the government adopted more-ambitious goals for its workforce and adapted economic and health policies accordingly. Initially, Singapore’s focus was on the quantity of workers with necessary skills, ensuring that there were enough healthy people with a basic education to prepare them for work in light manufacturing. As industrialization advanced, the quality of education became more critical, and the health needs of citizens changed. Through it all, a common vision for the country’s future guided policymaking and encouraged coordination within government.

Coordinating within government and with industry to build the education sector

In the early 1960s, Singapore began to lay the groundwork for an education and training system to teach the skills needed to underpin a modern industrial economy, with a focus on serving the needs of multinational companies. The primary objective during the 1960s and 1970s was free primary education for all. The government began unifying the country’s school system by introducing a common syllabus, with an emphasis on mathematics, science, and technical subjects, and mandated six years of primary schooling for all children (Yusuf and Nabeshima 2012). After six years, students took an exam to determine whether they would continue to secondary school or enroll in a vocational training program. The government began a school construction program to provide the infrastructure needed to educate a growing number of students. Singapore also recruited and trained teachers to meet increasing demands for skilled educators and improved vocational training (Human Capital Project 2019a).

The education ministry, schools, polytechnic institutions, economic development board, and other official institutions coordinated in developing the education sector. They tracked trends in labor demand and consulted with businesses to match the skills that the education system taught with the market’s needs. The government cooperated with foreign investors on the training of technicians for their factories, persuading them to train twice the number of technicians needed; the investors chose from among the pool of graduates, and the remaining qualified technicians helped attract new investors. As the number of training centers grew, the government consolidated them under what became the Institute of Technical Education (under the authority of the education ministry), which determined the number needed to be trained based on projections of labor demands and students’ desires (Yusuf and Nabeshima 2012). In 1980, the education ministry established the Curriculum Development Institute of Singapore to bring what was taught in schools in line with Singapore’s long-term industrial ambitions. The ministry also installed an information-gathering mechanism that helped school administrators assess the strengths and weaknesses of their institutions and track student performance.

As Singapore’s development plan succeeded in attracting investment and employing people in factories, the government changed its focus to attracting higher-value manufacturing. To achieve this goal, the country needed a workforce with better literacy, numeracy, and language skills. By the late 1970s, it was clear that learning outcomes were falling short of expectations. A majority of students were unable to master English as a second language, literacy scores were low, the dropout rate was high, fewer students went to secondary school than the government intended, and teacher morale was low. A 1979 report from Deputy Prime Minister Goh Keng Swee initiated a set of education reforms implemented throughout the 1980s. The objectives of these reforms were to improve the quality of education, enhance language aptitude, and foster science and engineering skills. These reforms addressed management of schools, pedagogical practices, curriculum content, teacher training, performance assessment, and government oversight.

Teacher recruitment evolved, with the government making the pay scales of teachers comparable with those of engineers and lawyers. The government also developed a certification program for teachers and provided continuous training (Yusuf 2020).

**Integrating health into urban planning and advancing the health system**

The 1961 development plan and subsequent government policies set clear goals for improving health outcomes. Singapore recognized that healthcare was an integral part of overall development planning, but this meant more than simply building hospitals and clinics. Because Singapore was a densely populated city-state, many aspects of urban life affected people’s health, such as housing, water supply, food supply, air quality, and waste disposal (Yusuf 2020).

Singapore considered health conditions in every aspect of urban planning, taking a comprehensive approach that required the cooperation of numerous ministries (Haseltine 2013). A vital institution in this effort was the Housing and Development Board, set up in 1960, which invested in clean, affordable housing to replace the unhealthy slums and squatter settlements many Singaporeans lived in. By 1965, it had built nearly 55,000 apartments, and the housing problem was solved by 1970. By 2013, almost 85 percent of Singaporeans lived in flats created by the HDB (Haseltine 2013).

The government placed a high priority on bringing diseases under control and expanding access to clinics and hospitals. By 1966, Singapore had instituted vector control, inoculation, and other measures such as reducing pools of brackish water where mosquitos bred. The government’s focus on this was such that it permitted inspectors to enter homes to search for and remove items that could collect water and attract dengue-causing mosquitos. Households where mosquito larvae were found in containers could be fined (Yusuf 2020).

Another early move was to develop a network of outpatient dispensaries and maternal and child health clinics to make primary healthcare services more accessible. These clinics gradually evolved into well-equipped modern medical centers, a foundation of the health system (Haseltine 2013). The government initiated a nationwide program to make primary health services widely available for a nominal fee, which helped keep overall health costs down through screening and prevention. Evolving public health efforts, environmental management, vaccines, and treatment helped control infectious diseases (Yusuf 2020).

As Singapore’s economic development progressed, it had more resources to invest in its health system. In the 1980s, the government initiated the Healthcare Manpower Development Program to train doctors locally and abroad to serve in health facilities. Singapore partnered with foreign health organizations and hospitals to address the lack of specialists. This program largely erased medical personnel shortages and allowed the government to create specialist healthcare centers (Yusuf 2020).

A milestone in Singapore’s health system development was the 1983 National Health Plan, which provided all citizens with affordable healthcare. The government helped dampen rising costs by giving public hospitals some independence in managing their own operations. The health ministry set up a holding company in 1985 that took ownership of public hospitals, giving the ministry oversight and guidance while granting hospitals significant autonomy (Haseltine 2013).

**Promoting citizen savings as a pillar of health and education financing**

One tactic that helped Singapore overcome financing challenges was the government’s focus on mandatory savings accounts and means-tested subsidies, which helped keep the government’s health and education costs down. In the 1970s, the government spent more than 40 percent of its budget on education as it built infrastructure and recruited and trained a teaching workforce. That level of expenditure gradually dropped as it shifted more of the spending burden to citizens, whose incomes were increasing as the country developed. From 2000 to 2013 (the most recent datapoint), Singapore’s public expenditure on education ranged from 17 percent to 22 percent of the national budget.

The government created a system in which households that could afford to pay out of pocket for education did so, with government help. Starting in 1993, every child in Singapore received an education savings account into which the government paid USD200 annually during primary school education and USD240 during secondary education, as long as the child was enrolled in a fulltime school, vocational program, or special education program. The government also matched any payments
made into a post-secondary education account, up to a certain limit (Yusuf 2020).

For healthcare, Singapore avoided entitlement programs and evolved a mixed healthcare financing system that featured extensive means-tested government subsidies to ensure equitable access to basic healthcare. The government tailored subsidies to patient age and ability to pay, and users incurred high co-payments from mandatory health savings accounts. Beginning in 1990, a basic health insurance program protected citizens against large hospital bills and certain costly outpatient treatments. Employees and employers contributed to mandatory savings accounts for medical expenses, and the government established an endowment fund to help those who had difficulty paying medical bills. As of 2017, Singapore's current health expenditures were 4.4 percent of gross domestic product, lower than the East Asia and Pacific average of 6.7 percent and the world average of 9.9 percent.³ Public expenditure on healthcare constituted only one-third of overall expenditures on health, compared with more than 81 percent in Japan and the United Kingdom. The health system evolved to the point that the country became the premier medical destination in Southeast Asia (Yusuf 2020).

Outcomes

Over decades, Singapore developed from a country with a low-skilled workforce and high incidence of tropical diseases to the best-performing state in the World Bank 2018 Human Capital Index, which derived a score based on a set of health and education indicators. The index reported that the probability of survival to age five was 99.7 percent, Singaporean students could expect to have attended 13.9 years of school by the age of 18, and student test scores were the highest in the world. Ninety-five percent of people who attained the age of 15 were expected to survive to age 60. These metrics were all far above the East Asia and Pacific regional average and the world average.⁴ A focus on developing human capital allowed Singapore to leapfrog from production of low-value items in the early 1960s to assembly of high-value items such as hard disk drives and precision machine tools in less than two decades.

Lessons Learned

Singapore’s strategy for building its education and health sectors, specifically its emphasis on continuity and coordination, demonstrated how a whole of government approach contributes to strong human capital development.

An overarching national development plan encouraged continuity and coordination in government policies

Singapore overcame potential coordination and commitment challenges in part by, early in its existence as an independent country, setting clear national goals to guide the work of all government institutions. Regular meetings encouraged coordination by bringing together institutions whose cooperation was necessary for implementing health and education policies.

The government sustained commitment to its human capital development strategy over time, adapting its goals to meet its evolving needs as the government sought to attract higher-value manufacturing.

Coordinating with industry helped optimize education and training

Singapore configured its education system around the needs of employers. The government coordinated with companies to understand the skills and backgrounds they needed in potential employees and collaborated on training programs that filled company needs while producing excess capacity to help attract new companies. This policy was effective in reducing unemployment and drawing foreign capital into Singapore that could fund its broader development goals.

Improving health outcomes requires the contribution of many institutions

In the early years of independence, before Singapore had the resources to invest heavily in its formal health system, it took measures to improve health outcomes that cut across different sectors, such as housing, food supply, and waste disposal. Realizing these goals required

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³ Data from the World Bank: https://data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS
coordination among various institutions outside the formal health sector, for example the Housing and Development Board. Such efforts helped reduce the incidence of tropical diseases and other maladies that had affected the population at the time of independence. These early gains paved the way for building a modern health system in subsequent decades.

References


The Human Capital Project is a global effort to accelerate more and better investments in people for greater equity and economic growth. The Project is helping create the political space for national leaders to prioritize transformational investments in health, education, and social protection. The objective is rapid progress toward a world in which all children are wellnourished and ready to learn, can attain real learning in the classroom, and can enter the job market as healthy, skilled, and productive adults.

For more information on the Human Capital Project, please visit www.worldbank.org/humancapital.