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GLOBALIZATION AND HIGHER EDUCATION

The Changing Context and Landscape in
Singapore

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Introduction

Education policy-making in Singapore has evolved through several phases of reforms in the last 50 years: from a focus to produce basic literacy in a population, to being competitive in the global labour market with an emphasis on high quality, and ultimately to be prepared for 21st century skills, which are critical to succeeding in today's knowledge-based global economy. Singapore has a three-tier public higher education system consisting of universities, polytechnics and the Institute of Technical Education (a system of technical and vocational training consisting of three "colleges"). The Singapore government has also implemented a wide range of neo-liberal reforms to stimulate diversity, autonomy, choice and innovation in education. This is all with the view that the quality of human capital is fundamental to the city-state's success and that competitiveness is linked to the quality assurance across K-12 and Higher education.

With the advent of globalization and the advancement of today's knowledge-based economy in line with its aspirations to be a regional education hub since early 2000's, Singapore's strategy is not just to attract students but to restructure the higher education landscape via a range of policy reforms. Globalization has triggered considerable changes to the higher education landscape in East Asia... "where countries have tried to make use of the globalization discourse to address/justify the local policy/political agendas" (p.15, Mok & Lee, 2003). The Singapore higher education system hosts a number of prestigious institutions and international partnerships. In recent years, research and development spending has been ramped up, specialist research centres have been established and universities have become more research intensive.

The number of students in a cohort attending a university in Singapore annually, has long been kept at only around 25%. This is due to the fact that the government had long resisted calls to expand the number of university places, especially the National University of Singapore (NUS) was established in its present form in 1980, itself the result of a merger of two university.¹ This system has been maintained thus by policy design as both universities are considered elite institutions of learning. More recently, there has been a push by the government to expand the capacity of public universities to take in more students (40% of each cohort) that was largely a reaction to the public demand for increased participation. These additional places will be provided for through the new Singapore University of Technology and Design (SUTD) and Singapore Institute of Technology, and through expanding the existing SIM University (UniSIM).

Acknowledging the fact that the demands for technical skills and proficiency will continue to rise as the workforce becomes more high-tech and globalized, the government is reviewing a set of recommendations from its reform committee on how to improve technical education and career guidance systems, strengthen workplace partnerships, develop better career pathways, and expanding apprenticeship opportunities so graduates can be better placed and prepared for work. All of these

¹ Parliament debates, 1980s

come under the new 2015 “SkillsFuture” initiative and the need for higher education institutions to be plugged into the needs of industries and the real world of work.

This paper examines how Singapore’s Higher Education system has been reformed over the past decades and how a tiny city state in Asia has managed to create world class higher education institutions in the past 50 years, with one of them ranked best in Asia on most major league tables. What contexts are critical to sustaining this for the next 20 years? Looking forward, what challenges Singapore faces in meeting its strategy and vision for higher education. Further, what are the lessons, if any, for other countries in Asia from Singapore’s successful experience and solutions to the problems she faced?

Global Trends and Singapore’s policies

Survival is treated not only as a political slogan but also as a dominant theme for strengthening the political legitimacy of the government and enabling it to mobilize popular support for the implementation of its domestic and foreign policies formulated by the ruling party (Chan, 1971). A strong economy, a commitment to full employment and the availability of high quality social infrastructure such as education, housing and health care, which have been built up over a period of three decades, is a prerequisite for sustaining a stable socio-political environment in Singapore in the face of uncertainties and volatility in the region. The ability of the developmental state in Singapore to generate and implement plans for continued economic growth to improve productivity, and to systemically dismantle the political resistance from such forces as labour unions and employers had smoothed the pathway to rapid economic development in Singapore; Singapore is a case of successful state capitalism. Education and training, which is considered a core element in facilitating economic growth and development, is prized in Singapore as a key driver for improving the educational qualifications and skill levels of the workforce so as to maintain the competitive edge of the Singapore economy in a fiercely competitive global market.

After the government built a strong and well-resourced K-12 (kindergarten to year 12) system of education, its attention was directed towards positioning and strengthening post-secondary education. In fact, Singapore in the decades since the 1980s, has witnessed a particularly rapid development of both polytechnic and university development. Singapore’s non-degree institutions, the five polytechnics and the Institute of Technical Education, are credible and well-resourced institutions attracting a healthy share of students seeking relevant post-secondary education. Given the prioritizing of economic development, higher education is used instrumentally as a tool of economic development.

Singapore’s objective to restructure itself into an innovation-driven and knowledge-based economy with world-class capabilities since the 1990s has opened new opportunities and challenges. A driving force here was an economic recession in 1985, and the government’s landmark review of economic policy the subsequent

year,² which sparked off more rapid transformation of the economy oriented more towards the services sector (“the knowledge economy”). A viable state via value added economic development in the context of the global knowledge economy can only be accomplished, the state believes, with a sufficiently large pool of high quality workforce. In today’s knowledge economy, knowledge is now regarded as the most important factor contributing to the unprecedented and rapid, if uneven, pace of economic growth and development around the world.

There has been a great deal of policy changes over the last decade to position the university and research sectors so they can meet the knowledge challenge. The Global SchoolHouse project, for instance, aimed to transform Singapore into a “global knowledge enterprise”. A recent decision to establish a fourth university, the Singapore University of Technology and Design (SUTD), in collaboration with MIT, Cambridge, is but one example. State spending on research and development (R&D) activities is being ramped up and universities have become noticeably more research intensive in the last two decades.

Increasing the gross enrolment ratio (GER) for university education

All these developments in Higher Education took place while the gross enrolment ratio (GER) for university students was capped at 25%. This rate, sustained until about 2011, stood in stark contrast with other similarly developed countries, including South Korea (almost 70%) and Taiwan (32%)³ in the Asian neighbourhood over the same period– the four were often dubbed the “Asian tigers” in the 1990s in recognition of their economic prowess. There is of course a qualification to be made here: while the GER for university stood at 25%, the rest of the population went to polytechnics and Institutes of Technical Education – institutions regarded as some of the best in the world – for their post-secondary education. Inspired by the renowned German and Swiss models of technical education. When one considers the phenomenon of graduate unemployment and under-employment in South Korea and Taiwan, which have been linked to the “over-massified” university systems in those countries, this would appear to have been a blessing in disguise. Except that the vast majority of these diploma holders graduating from polytechnics still felt the need to “upgrade” (to use the popular local colloquialism in the educational context) to degrees. Part of this is usually explained by the “Confucian” socio-cultural contexts of these East Asian countries that place a premium on educational qualifications.

But more likely, Singaporean polytechnic diploma holders are competing with degree holders in the globalised marketplace of jobs that is Singapore. Some of the degree holders from other countries, with whom Singaporean polytechnic diploma holders are competing for jobs, hail from universities that were themselves converted from polytechnics. For instance, some of these include the 35 universities in England that were created, or converted, from polytechnics as a result of the British government’s 1992 exercise of ending the “binary divide” between universities and polytechnics. It therefore seemed unfair for Singaporean diploma holders. If unable

² MTI, *Report of the Economic Committee: The Singapore Economy: New Directions, 1986*. <https://www.mti.gov.sg/ResearchRoom/Documents/app.mti.gov.sg/data/pages/885/doc/econ.pdf>

³ SUNY Buffalo, Bruce Johnstone database

to obtain a place at the (prestigious) public universities after polytechnic, they would fork out large sums towards the tuition fees towards private degree institutions which, while not being outright degree mills, were dubious in instructional quality. Some of such institutions were shut down abruptly with very detrimental effects on the academic pathways of their students. Singapore higher education market is undeniably becoming more competitive. Singapore remains one of the largest markets for transnational higher education in the world and is a particularly important market for Australian and U.K. universities (Garrett, 2015). Several private institutions, such as the UniSIM, are key local partners and have been drawn to foreign partnerships as a way of offering degrees.

The government stepped up regulatory measures for such private institutions, introducing a regulatory body for that purpose. The government also stepped up its investment and support for SIM University (UniSIM), a private college which subsequently grew into a university with significant state support. And finally, the government decided to raise the GER of university places from the long-held 25% to 40%, in 2011. Some observers read it as a reaction to the results of the 2011 general election in Singapore, at which the long-ruling People's Action Party (PAP) took a drubbing at the polls (though still a rather impressive performance by international standards). Concerns in the area of educational qualifications and job prospects were read as possible factors for the less-than-stellar PAP results, though one should not interpret it as such too deeply. To raise the numbers of university places, two new "public-autonomous" universities were established by acts of Parliament – Singapore University of Technology and Design (SUTD) and the Singapore Institute of Technology (SIT).

Another feature of globalization is the global auction for talent (Brown & Lauder, 2013). This is particularly relevant for Singapore given its limited human resources. The Singapore state has used the regional hub and internationalization strategy, both in terms of the recruitment of a higher proportion of non-local or international students and also the forging of alliances and partnerships between local and renowned overseas universities to collaborate in offering postgraduate programmes and carrying out R&D. These developments suggest that the government recognizes that universities and research laboratories are the engines of knowledge creation and dissemination, and Singapore's aspirations to be a world class economy and state cannot be sustained without this focus and investment in Higher Education.

Fortunately, Singapore's citizens see that economic development has been facilitated by investment in human capital; solid economic growth over the last two decades has meant that resources are available for investment in higher education. Together with the provision of high quality infrastructure, the developmental state in Singapore has been successful in developing the city-state as an advanced economy with a GDP per capita of over US\$ 55,000 (World Bank, 2013), and where its citizens have benefitted from rapid economic growth and social stability. In order to become a global city, there needs to be a diversified economic structure, comprised not only of trading and financial industries but also other innovation and knowledge-based economic sectors, to improve the city's comparative advantage in the global economy.

Current Challenges in Singapore and its Responses

Worldwide, countries are not immune from the influence of globalization, especially economic impacts, and the rise of the global knowledge-based economy, in which information and knowledge are the main drivers of different kinds of activities.

Globalization presents Singapore with its own policy challenges: has globalization destabilised Singapore's development state's strategies? What strategies are needed to transform the nation in preparation for a fourth industrial revolution? According to Boston Consulting Group's report, this new revolution "will affect the very foundations of a society: economic growth, education, global trade, health, poverty, and much more". And given that the global economy is in many ways a knowledge economy, what roles do the higher education institutions and other knowledge using and producing centres have?

The numerous education reform initiatives globally suggests that policymakers recognize that this more unpredictable and vulnerable context will require well-educated and innovative workers to give the country crucial economic advantages. The reform rhetoric stresses that fundamental changes to curriculum and assessment methods are necessary in order to facilitate the education of students to be equipped with creative thinking skills and innovative ideas. From the perspective of the Singapore government, investment in the higher education sector is both necessary and can be justified on the clear evidence that this sector has contributed well to economic growth. The willingness of the government to continuously increase its public expenditure in higher education is thus understandable; in comparative terms support for higher education in Singapore is both steady and robust.

Since the mid-1990s, there have been two strategies for the development of higher education in Singapore. On the one hand, the government has constantly demonstrated its strong determination to develop the state or publicly-funded universities into the ones whose academic standards, research quality, resource endowment, and managerial efficiency can be comparable with world renowned higher education institutions. This aspect is obviously more concerned with the desire to create world-class universities in Singapore and to serve as a magnet for talent. The government's commitment is to develop Singapore as a regional education hub capable of drawing in talented non-local students as well as fee-paying students to study and eventually settle and work in the city-state.

Policy makers recognized that Singapore can enhance its competitive edge by crafting a regional education hub to expand her market share in the growing global education market for students. These two strategies gradually became the two most important guiding principles for developing higher education in Singapore. Though manufacturing continues to be a significant part of the economy, building upon petrochemical, electronics, and information and communications technology, there is acknowledgment among policy makers that the economy that Singapore needs for the future must also model on the Silicon Valley experience, high technology hot spot clusters that provide the critical mass of advanced knowledge sources (universities, advanced public and corporate research laboratories), venture capital,

entrepreneurial talents, knowledge workers, specialized professional services, sophisticated end users and enabling institutions.

The Biopolis and Fusionpolis cluster is Singapore's emerging Silicon Valley. These hubs are attempts to create an intellectually stimulating and creative physical environment for academics, researchers and entrepreneurs to gather to interact and share ideas. The Agency for Science, Technology and Research (A*STAR) is Singapore's lead public sector agency that spearheads economic oriented research to advance scientific discovery and develop innovative technologies. A*STAR attempts to bridge the gap between academia and industry. A*STAR oversees 18 biomedical sciences and physical sciences and engineering research entities primarily located in Biopolis and Fusionopolis. A*STAR strives to help Singapore develop into a world-class scientific research hub by building up three types of capital: human, intellectual and industrial.

Critics argue that innovation spirit cannot be "engineered" top-down but what is required is a fundamental change in culture and a risk-taking society. The R and D investments of over \$16 B the past half-decade has helped to create several jobs. The Director of Higher Education Policy in Singapore attributed this success to a combination of factors that include the reputations of local Higher Education institutions. The keys to successful innovation (Inc.com) follows four essential phases.

1. The initial stage--investigation--is the research and development of an idea, and it usually happens at large universities and research labs.
2. The incubation stage is about spinning these early findings into a workable prototype that might actually function.
3. In the acceleration stage, building start-ups happens that will realize its full potential.
4. The final stage, commercialization, entails bringing the innovation to scale, building and selling as the industry needs or the consumers want.

The United States focuses on the first and the last stages emphasizing early research and taking things to scale. High-ranked nations like Korea, Finland, and Israel have a welfare state model, where the government invests in creative initiatives. This is essentially government intervened match-making: the government gives start-ups capital and connects them with universities and research labs. Welfare states like Singapore, Korea and Finland usually depend on a vertically integrated model of growth. Singapore began this in the 1970s, when its government integrated the National University, the Science and Technology Board, and Temasek holdings, and tasked them together to facilitate and fund start-ups.

The challenge ahead for the sector is to scale these inventions and ideas so as to generate impact from the knowledge. In order to maintain the city-state's geo-economic and geo-political viability, the Singaporean government has progressively linked its economic interests with its multilevel free trade activities. Singaporean

leaders and policymakers are known for their ability to stay competitive, responsive and constantly seizing economic opportunities to stay relevant. The pursuit of economic development and free trade has become the heart of its national policy and strategy.

Singapore as a model for other countries in Asia?

Singapore's vision for pursuing world-class status for its universities was a systematic pursuit which was part of a grand nation-building strategy. It would seem that the lessons for other middle-income Asian countries, for example, would be to model on Singapore and believe that significant government intervention, funding and proactive measures to support implementation will result in a well-managed higher education hub. "The Singapore case shows how strategic thinking directed toward national development economic growth can become a driver for academic excellence, enabling universities from a newly industrialized economy to rapidly ascend into the league of leading global universities" (p.162, Altbach & Salmi, 2011). It takes years to build institutional and infrastructure capacity in Higher Education and also requires the political will, bringing together "national policies, institutional capabilities, and knowledge integration" (Bhaskaran, 2009, 141). Mok (2011) argues that the story of the development of world-class universities in Singapore provides other universities in emerging economies an exemplar of development. As an active "market generator" (Mok, p.29), the governments set strategic directions for economic development and how Higher Education institutions would orchestrate the reform process to meet the national goals.

In this regard, it might be more gainful to distil the right "lessons" in comparison to even Asian cases – Hong Kong and South Korea. Hong Kong, like Singapore, is a city-state; but the Hong Kong SAR government's late and relatively lower investments into making the territory a centre for high-technology industries, and investing in the requisite educational infrastructure to support that has benefitted key cities in the Chinese mainland like Shanghai (Postiglione 2013, p. 65⁴). This could be to the detriment of Hong Kong's economy in the long run. South Korea, where the predominant national narrative has been that of a resource-scare country facing an existential threat from North Korea, bears some similarities to Singapore in its model of state-led developmentalism; but its over-massification of university education, and insufficient coordination with the skill needs of the economy, has now led to a glut in degrees in the job market and to graduate unemployment.

Looking Forward: Policy challenges and directions for Singapore 2035

The Singapore government has lately been changing the narrative around higher education that a diploma alone will not guarantee jobs. Much of this was driven by the government's realisation that productivity in the domestic labour market was not improving,⁵ despite investments in various credit schemes, and was even stagnating

⁴ <http://siteresources.worldbank.org/EDUCATION/Resources/278200-1099079877269/547664-1099079956815/547670-1317659123740/Chapter3.pdf>

⁵ <http://www.straitstimes.com/singapore/wages-may-stagnate-or-even-fall-if-productivity-does-not-keep-pace-pm-lee>

for years.⁶ There is a heavy emphasis around the skills and attitudes required by young Singaporeans to succeed in the workplace. The new storyline revolves around the importance to help the youth succeed as "talent rather than capital" will drive productivity. The government sees the need for employers to help the "millennial generation" succeed at work and at home, as they are the ones who will shape Singapore's next 50 years. Singapore envisions the need to evolve to keep up with the changing world in order to reinvent its economy. As the country enters its next phase of development, it recognizes the need to relook its economic growth strategies. There is a message to exercise greater discretion in decision-making in a changing complex world.

The government has also been indicating its desire to reduce dependence on foreign higher education. There are numerous private colleges and companies partnering with foreign universities to offer degrees in Singapore but a few like Johns Hopkins have left the country due to a mismatch in objectives. Others like New York University's Tisch School of the Arts campus in Singapore have shut down due to huge losses in spite of subsidies,⁷ while the Asia campus of the University of Chicago's Booth School of Business in Singapore moved to Hong Kong, ostensibly to be closer to the mainland China market of potential students.⁸ The underlying danger is that if providers such as SIM decide (or are required) to abandon foreign degree programmes, then a significant portion of the current market will shift from transnational to domestic status (Altbach, 2015). As Garrett (2015) puts it, "for mainstream transnational delivery the "golden age" may soon be coming to an end in Singapore".

On the other hand, as Singapore's only privately-funded university dedicated to adult learners, UniSIM has a unique place in the tertiary education landscape in Singapore. UniSIM plays an important role of supporting Singapore's economic growth by equipping working adults with skills and knowledge upgrading pathways. Expanding the multiple pathways for higher education, the establishment of the Yale-NUS College, Singapore's first liberal arts college, is a move in this direction. It would initially appear counterintuitive to the Singapore government's thrust in aligning education to economic prerogatives; but such education as afforded by a liberal arts education has been regarded a step towards the development of soft skills also highly prized by employers in the 21st century. Concerns over issues of academic freedom in Singapore marred the fanfare when Yale-NUS College was opened, in which some of Yale University's own faculty in New Haven have protested over. This was sparked off again recently this year (2016) when the Yale-NS College student community protested the continued presence of a government-affiliated ambassador-at-large on the institution's board of governors, due to her views on homosexuality in Singapore.

Singapore's five polytechnics and retail companies recently signed a Memorandum of Understanding (MOU) to integrate student internships with the SkillsFuture Programme. Under this new initiative, the objective is to invest in talent

⁶ <http://sbr.com.sg/economy/news/locally-oriented-sectors-culprit-behind-singapore%E2%80%99s-productivity-stagnation-nti>

⁷ <http://www.universityworldnews.com/article.php?story=20121116104624469>

⁸ <http://www.ft.com/cms/s/2/e30e88e0-e8a5-11e2-aead-00144feabdc0.html#axzz3ytMLquis>

management and retention programmes during students' internships. Students who successfully complete at least 20 weeks of the Enhanced Internship with the organisations may now be offered employment through the SkillsFuture Earn and Learn Programme.

In an effort to bridge the Higher Education institutions with the economy and industry needs, and to create flexible pathways and to increase employability for young Singaporeans, the government has been focusing on increased access to upgrading skills. There is a renewed call to the local workforce not to blindly chase paper qualifications, and to ensure that the skills they choose to pursue are relevant to industry needs and translate to gainful employment outcomes. Through SkillsFuture initiative, the government has begun to engage individuals, employers, industry, and educators to facilitate the creation of multiple pathways for success by building an integrated system for education and training for Singaporeans to advance their education and skills throughout life.

In conclusion, Singapore's labour market policies since 1965 have been shaped by the state-driven, foreign investment-led, export-oriented, manufacturing-focused development model, staying responsive to constant global challenges. Emerging into the future, the government is pursuing renewed economic restructuring, targeting Higher Education investments more selectively, and heavily promoting innovation, underpinning skills and sustainability. The strategy is not just to focus on educational qualifications but the "right" skills and innovation spirit to advance the economy. Additionally, in its vision for being a first SmartNation, (a nation where people live meaningful lives enabled by technology) and to become a modern and technologically advanced society, Singapore plans to equip its human resource talent and capabilities in the fields of Science, Technology, Engineering and Mathematics (STEM). The SUTD's new campus is a step forward in that direction.

Note

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References

- Altbach, P. G., & Salmi, J. (Eds.). (2011). *The road to academic excellence: The making of world-class research universities*. World Bank Publications.
- Altbach, P. (2015). Why branch campuses may be unsustainable. *International Higher Education*, (58).
- Chan, H. C. (1971). *Singapore: the politics of survival, 1965-1967*. Oxford University Press.
- Channel News Asia (2015). <http://www.channelnewsasia.com/news/singapore/as-graduate-numbers-grow/1866808.html>
- Channel News Asia (2015) <http://www.channelnewsasia.com/news/singapore/many-opportunities-for/1834130.html>

- Daquila, T. C. (2013). Internationalizing Higher Education in Singapore Government Policies and the NUS Experience. *Journal of Studies in International Education*, 17(5), 629-647.
- Garrett, R. (2015). The rise and fall of transnational higher education in Singapore. *International Higher Education*, (39).
- Gopinathan, S. (2007). Globalisation, the Singapore developmental state and education policy: A thesis revisited. *Globalisation, Societies and Education*, 5(1), 53-70.
- Gopinathan, S. L. M. H., & Lee, M. H. (2011). Challenging and co-opting globalisation: Singapore's strategies in higher education. *Journal of Higher Education Policy and Management*, 33(3), 287-299.
- Iswaran, S. (2015). Singapore Economy: Strategies for the Next 50 Years. Singapore 2065: Leading Insights on Economy and Environment from 50 Singapore Icons and Beyond, 2065102.
- Lauder, H. and Brown, P. (2013) IPR Policy Brief - The global auction for high skilled work: implications for economic policy. University of Bath.
- Lim, K. M. (2015). Bridging higher education and vocational education and training to create flexible education pathways and to improve students' employability.
- Mok, J. K., & Lee, M. H. (2003). Globalization or glocalization? Higher education reforms in Singapore. *Asia Pacific Journal of Education*, 23(1), 15-42.
- Mok, K. H. (2012). Global Aspirations and Strategizing for World-Class Status: New modes of higher-education governance and the emergence of regulatory regionalism in East Asia. Nelson, A & Wei, P. (Eds.), *The global university: past, present and future perspectives*, 1, 25-54.
- Sidhu, R., Ho, K. C., & Yeoh, B. (2011). Emerging education hubs: The case of Singapore. *Higher Education*, 61(1), 23-40.
- The Boston Consulting Group (2015).
<https://www.bcgperspectives.com/content/commentary/strategy-technology-digital-three-ways-companies-success-fourth-industrial-revolution/>
- The Straits Times Newspaper (2015). <http://www.straitstimes.com/opinion/for-singapore-to-innovate-ambitions-values-need-to-change>
<http://www.straitstimes.com/print-edition/20160126>
- Urata, S., & Lall, S. (Eds.). (2003). *Competitiveness, FDI and technological activity in East Asia*. E. Elgar Pub. www.worldbank.org