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Keynote Address: Building excellence in higher education: Singapore's experience

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**Building Excellence in
Higher Education**
Singapore's Experience



Arnoud De Meyer with Jovina Ang



Building Excellence in Higher Education: Singapore's Experience

Arnoud De Meyer
Professor Emeritus and former President
Singapore Management University

17th AUNILLO Meeting
5th of July 2022

Singapore: some selected statistics

	Singapore
Population in Million	5.640
- Nationals	3.471
- Permanent Residents	522
- Overseas	1.645
- Fertility rate (babies/woman)	1.16
GDP in billion	S\$ 533.35 / € 286.06
GDP per capita	S\$ 97,798 / € 50,970
Average life expectancy in years	83.1
Old age dependency in %	20.8%
House ownership in %	90.7%

Can one be inspired by Singapore's development of a system of higher education?

Founding PM Lee Kuan Yew was often quoted as having said that the strategy to develop Singapore was "to develop Singapore's only available natural resource: its people"

Current portfolio of higher learning institutions:

- Institute of Technical Education (1992): three Colleges
- 5 Polytechnics
- Universities:
 - 2 comprehensive research universities:
 - NUS (1905, 1928) and
 - NTU (1991, with roots in Nanda: 1955-1980)
 - 2 specialized research universities:
 - SMU (2000 with Wharton): business, economics, social sciences, IT, Law
 - SUTD (2012 with MIT): engineering
 - 2 applied universities:
 - SIT (2008/2014): applied engineering and technology
 - SUSS (2017, with roots in UniSim 2005): social sciences and business
- Many private institutions (overseas campuses, franchised programmes) offering education and research (CREATE)

Focus on government sponsored universities

Mainly driven by Cohort Participation Rate (CPR): from about 5% in 1980 to >40% in 2020

Offering choice to young Singaporeans and mid-career PMETs

Aiming for excellence: not always top ranked, but always top in what you want to achieve

Favourable research rankings:

- NUS and NTU top ranked in Asia based on STEM
- SMU top ranked in business and accountancy in Asia
- SUTD one of the top ranked young engineering schools

While Singapore as a city state is a very special case, the development of its system of higher education may inspire others

Drivers of Success

- **A system that is fit for purpose**
- **A significant investment in R&D**
- **Good governance: the autonomous university**
- **Active learning from overseas partners**
- **Flexibility in implementation**

Fit for purpose

Aligning the education system with the economic development of the country

Offering choice to a group of young students with a growing appetite for diverse career choices

A holistic approach to education

And now extending the role of the universities in shaping life-long learning and continuing education (SkillsFutures)

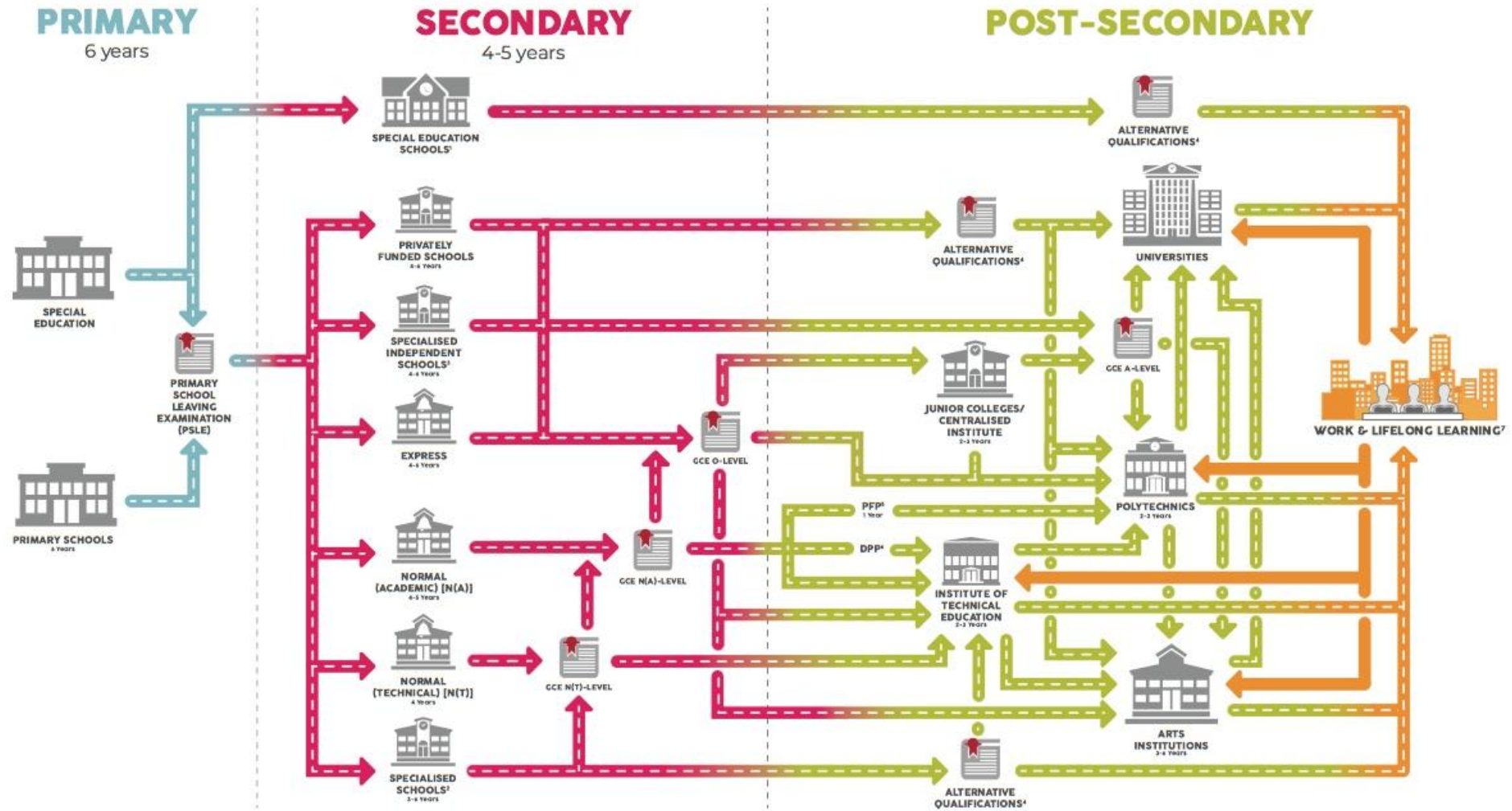
Composition of the Singapore workforce by type 1980-2018

Source: several Yearbook of Statistics, Singapore

Occupation	1980	1990	1999	2009	2018
Legislative, senior officials & managers	6.3	8.6	12.4	15.6	14.6
Professionals	0	4.2	9.9	16.1	20.4
Associate professionals and technicians	11.7	11.5	18	20.3	21.8
Clerical support workers	13.8	13.1	14	12.7	10.8
Service and sales workers	14.6	13.8	13.1	11.2	12.1
Craftsmen, trades workers, plant and machine operators, cleaners, labourers, etc.	46.3	44.5	29.1	20.7	17.1
Others (including agriculture and fishery)	7.4	4.3	3.5	3.4	3.2

Sectorial employment	1980	1990	1999	2009	2018
Manufacturing	30.1	29.1	21.0	15.7	10.4
Construction	6.6	6.7	6.9	6.1	4.7
Services				77.1	83.9
Wholesale and trade	21.3	22.0	21.8	14.6	16.0
Transportation and Storage	11.2	9.5	9.5	9.6	9.0
Accommodation and food services				6.7	6.1
Information and communications				5.0	4.2
Financial and insurance activities				6.5	8.9
Business services	0.0			13.0	15.8
Community, social and personal services	0.0			21.6	23.9
Others	23.1	20.6		1.1	1.0

The Singapore Education Landscape



¹ Students in special education schools which offer the national primary curriculum will sit for PSLE. Some students in Pathlight School who take the national secondary curriculum may also sit for the GCE N- or O-Level examinations. Note: This has not been fully represented in the graphic.

² Specialised schools offer customised programmes for students who are inclined towards hands-on and practical learning. Some also offer N(T)-level exams. These schools are Northlight School, Assumption Pathway School, Crest Secondary School and Spectra Secondary School.

³ Specialised Independent Schools offer specialised education catering to students with talents and strong interests in specific fields, such as the arts, sports, mathematics and science, and applied learning. These schools are the School of the Arts, Singapore Sports School, NUS High School of Mathematics and Science, and the School of Science and Technology. Eligible students of the Singapore Sports School can progress directly to Republic Polytechnic. Eligible students of the School of the Arts can pursue a diploma programme at the Nanyang Academy of Fine Arts via special admissions after their fourth year of study.

⁴ Alternative Qualifications refer to qualifications not traditionally offered at mainstream schools in Singapore.

⁵ The Polytechnic Foundation Programme (PFP) is a diploma-specific foundation programme conducted by the polytechnics over two academic semesters for students who have completed Secondary 4N(A). Students who successfully complete the PFP may progress directly into the first year of their respective polytechnic diploma courses.

⁶ The Direct-Entry Scheme to Polytechnic Programme (DPP) is a through-train pathway to polytechnics via ITE, for students who have completed Secondary 4N(A). DPP students who successfully complete a two-year Higher Nitec programme at ITE and attain the required qualifying Grade Point Average (GPA) scores are guaranteed a place in a polytechnic diploma course mapped to their Higher Nitec course.

⁷ Adults and working professionals are encouraged to upskill and reskill through quality learning options in lifelong learning provided by our Institutes of Higher Learning as well as Singapore Workforce Skills Qualifications (WSQ) training providers accredited by SkillsFuture Singapore.

Note: Students can opt to transfer laterally between Express, N(A) and N(T), if they are assessed to be more suitable for these courses. (This has not been fully represented in the graphic).

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Significant research funding (in S\$M)

Actors in R&D	2000	2005	2010	2015	2017
Total	3,009	4,569	6,315	9,239	9,086
Private sector	1,866	3,018	3,774	5,512	5,423
Higher education	338	478	968	1,573	1,704
Government sector	424	443	672	1,028	997
Public Research Institutes	381	630	901	1,127	962

Personalities , policies and managing the public opinion

- **Strong and experienced leadership at the government and university levels;**
- **The creation of an environment that was favourable for R&D at the universities that included a community of top researchers who could groom the next generation of researchers. Attracting top performing researchers and the establishment of CREATE both inculcated this environment;**
- **A very open policy to attract foreign specialists who were willing and able to contribute to the development of the R&D landscape in Singapore;**
- **Changes in the university performance evaluation system, promotion and tenure processes, and the recognition and incentives for high-quality research;**
- **A resolute adoption of international research performance standards; and**
- **Careful management of public opinion in explaining the importance of R&D to the country's success and the need to attract foreign specialists.**

Appropriate governance: autonomous universities

- **Not exclusive to Singapore: New Public Management (NPM), inspired by UK, has been implemented in several East Asian countries**
- **Perhaps implementation was more effective in Singapore:**
 - **Good preparation and piloted with SMU**
 - **Selection of appropriate chair and trustees**
 - **Commitment to real autonomy at the highest level of government**
 - **Trust building**
 - **Policies by MOE that were perceived to be reasonable**
 - **Effective quality assurance system (QAFU)**
- **Generous support to build endowments**
- **Leading to differentiation among universities**

Active and adaptive learning from partners

- No hesitation to work with foreign partners:
 - SMU with Wharton
 - NUS with Peabody (conservatory), Duke (medical), Yale (liberal arts)
 - SUTD with MIT
 - NTU with Imperial (medical)
 - SIT with a slew of partners
 - ...
- Active and two-way learning
 - Careful choice of partners, but also some serendipity
 - Open to new ideas and transforming them to fit local needs
 - Institutional partnerships and individual commitments
 - Willingness to mature from the partnership, when learning is decreasing

Long term view Flexibility in implementation

- **A remarkable continuity in key players in the government**
- **Early detection of issues and quick adjustment:**
 - “We had a rough terrain map. But along the way, the map evolved and was adjusted.”*
- **Strong and committed leadership with strong international experience**

Future Challenges

Specific to Singapore:

- **Demographic evolution: low fertility rates and an ageing population**
- **The need for a Singapore core**
- **Degree of internationalisation of student body**
- **Arts & design education**
- **Insufficient understanding of our neighbours**

More general

- **The role of technology**
- **Changing nature of work, jobs and careers: what do we prepare graduates for?**
- **The challenge of life-long learning: what is the role of universities?**
- **Translating research into innovation**

The role of technology

- A shift from a teacher centric to a student centric paradigm
- More experience-based learning
- Flipped classrooms
- Virtual and boundary-less classrooms
- Increased role for learning analytics
- More interdisciplinary programmes
- Radical internationalisation of research
- Big data and analytics may make inductive research methods acceptable
- Social technology
- Risk of an extreme commercialisation of higher education

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Universities and life long learning

“It is really the broader re-envisioning of education, to provide for learning throughout life. Our publicly funded universities have to be anchors in this system, and have the high standards and credibility in the minds of the Singapore public that is needed to play such roles. They are taking this on as part of their core mission. We will need some flexibility in the system, so it’s not about receiving a single shot of higher education that is counted on for a lifetime, or about each institution catering to only its own alumni. The new capability of higher education in Singapore must be to enable people to acquire knowledge and skills through a mix of programmes over time, coming in for short or extended periods each time. It is an important new approach, still being developed, and part of our future.”

SM Tharman Shanmugaratnam

Universities and life-long learning: the challenges

Andragogy

Role of research faculty?

Specialisation of each institution?

Business models?

Translating research into innovation:

“I see a lot of great research results, but I see little impact on our GDP”

Creating better performing intermediaries between universities and industry

Go beyond entrepreneurship and create an ecosystem in which entrepreneurs can and want to grow

Invest in design competencies

Universities need to embrace a culture of innovation

We need a much better understanding of the role of social sciences in innovation

And invest in R&D where there is an absorptive capacity in the country

Thank you

