



2020-21

Legislative International Education Study Group

BRIEF ON HIGH-PERFORMING SYSTEMS: SINGAPORE

Overview

Singapore is an extraordinary success story. Since becoming an independent republic in 1965, it has gone from an impoverished island with no natural resources and a population a majority of whom were illiterate to a country of 5.8 million people with living standards that match those of the most highly developed industrial nations. From the very beginning, Lee Kuan Yew, the world-famous prime minister who led Singapore to this achievement, understood that education would be an essential element in the creation of a single unified nation from a group of clashing ethnic and religious groups and in the development of the kind of world-class workforce that would be required to fulfill the very ambitious economic goals he had set for Singapore.

The results of these efforts became clear in 2009 when the nation participated for the first time in the Programme for International Student Assessment (PISA). Singapore's 15-year-olds performed first in the world in mathematics, third in science, and fourth in reading. And in 2015 the nation was first in the world in all three subjects; in 2018, four Chinese provinces outperformed Singapore, but the small island nation continued to outperform every other nation, improving its score in mathematics and reading.

The improvement in performance illustrates a key feature of Singapore's education system: the country does not rest on its laurels. Rather, its leaders continually scour research and benchmark best practices from around the world to improve the education system and enable it to respond to changes in the economy and society. In the 1990s, the government implemented the "Thinking Schools, Learning Nation" program. The government had recognized that global economic leadership required not just a highly educated and skilled workforce capable of doing high value-added work but a workforce that would have the habits of mind, values, attitudes, and skills needed to develop leading edge products and services. So they focused in this stage on improving even further the quality of their workforce and on curriculum and instruction that would support the creativity and capacity for innovation of their students.

In 2004, the government developed the "Teach Less, Learn More" initiative, which moved instruction further away from the rote memorization and repetitive tasks on which it had originally focused to deeper conceptual understanding and problem-based learning. In 2008, the practice of grouping students into ability-based tracks was abandoned, with students now sorted into three different "bands" in secondary school

based on their ultimate educational goal. Although students take the majority of their classes within their bands, they can take classes in other bands depending on their aptitude. The goal is to achieve full subject-based banding, allowing students to mix and match classes from different bands freely, by 2024.

Singapore’s current priorities for its education system are reflected in the title of the initiative “Every School a Good School.” This set of reforms is aimed at ensuring that all schools have the resources they need to develop customized programs for their students, at raising professional standards for teachers, at encouraging innovation, and at fostering partnerships between schools and communities. In addition, Singapore launched a “Learn for Life” initiative in 2018 to promote lifelong learning among every Singaporean by promoting flexibility in teaching, learning, and assessment, and opportunities for students to choose more self-directed learning in ways that bring them satisfaction and meaning.

Population	5,839,785
GDP	\$363 billion; \$63,987 per capita
Employment	Unemployment: 3.6%; Youth Unemployment: 8.43%
Ethnic Makeup	Chinese 74%, Malay, 13%, Indian 9%, Other 3%
Major Industries	Manufacturing: 20.9%; Wholesale and Retail Trade: 17.3%; Business Services: 14.8%; Finance and Insurance: 13.9%; Other Services: 11.3%
Educational Attainment	Upper Secondary School Graduation Rate: 99.3%

Governance and Accountability

Governance System

The education system is highly centralized. The Ministry of Education is responsible for education for kindergarten (ages four to five) through higher education. The Ministry allocates funding for all schools, sets course syllabi and national examinations, oversees teacher credentialing, manages the teacher and principal evaluation and promotion system, and hires and assigns principals and teachers to schools. Schools are grouped

into geographic clusters, each overseen by a cluster superintendent, to provide local support for the Ministry's education policies and initiatives. The cluster superintendents, who are successful former principals, work with principals in their cluster to jointly determine how the curriculum will be implemented and choose teaching materials, though the Ministry makes recommendations. The cluster superintendents also facilitate the sharing of resources and best practices between cluster schools.

While the Ministry sets the framework for the system, other entities operate within that framework. At the cluster and school level, there is discretion granted to teachers and administrators. The independent or semi-autonomous agencies that partner with the system—like the National Institute of Education (teacher training), the Examinations and Assessment Board (national assessments), and the Institute of Technical Education (developing course syllabi for vocational education)—have clearly defined areas of responsibility and work closely with the Ministry.

Planning and Goal Setting

Singapore has articulated comprehensive and clear system-wide goals for education. These goals, which are revisited regularly, emerge after widespread discussion with partners in the system and with the public, as well as extensive benchmarking of other leading education systems. The goals are then used to structure policy initiatives and create benchmarks to measure progress. For example, a National Conversation was held in 2013 to gather input on a vision for the education system in 2030 before the latest strategic plan was developed. Goals for 2020 include improving character and citizen education, strengthening digital literacy, building more knowledge and understanding of the history and cultures throughout Asia, expanding supports for disadvantaged students, and building more adult education opportunities.

Education Funding

The Ministry of Education directly funds all schools equitably based on the number of pupils. All schools receive a set grant (called an Opportunity Fund) to use for their low-income students and students from ethnic minority groups. Although this supplemental funding is distributed by the Ministry, schools have the authority to choose how to spend it. The Ministry also provides funding directly to students from low-income families in the form of subsidies, called Financial Assistance Schemes, for educational materials and activities and funds for school meals. In addition, the Ministry in 1970 created the Education Fund, which collects contributions from Singapore residents to support students, such as through scholarships for low-income students. One of the funds that make up the Education Fund, the Financial Assistance

Fund, supplements the government grants by providing support for students who might not qualify for them.

The government spent a total of SG\$12.6 billion (US\$8.9 billion) on education in 2018-19, or 2.5 percent of GDP. Of that total, SG\$5.9 billion (US\$4.2 billion) went to primary and secondary education and special education; the rest went to post-secondary education.

Accountability

Singapore's primary form of accountability is a self-evaluation. Schools are required to evaluate their own practices and outcomes using the Ministry-developed School Excellence Model, which includes nine criteria for performance. Based on that evaluation, schools develop improvement plans. The self-evaluation is supplemented by external inspectors, who evaluate each school every five years. The external inspectors, who include university professors and successful school leaders, provide feedback to the schools and offer coaching and support as they implement their improvement plans.

The improvement efforts are organized through Singapore's school cluster system. The cluster superintendents meet regularly with principals to monitor their improvement efforts.

High-performing schools are eligible for awards. The Ministry annually issues awards to schools that demonstrate outstanding achievement in a single year or over a period of years. The highest award, the School Excellence Award, is given to one school each year.

Teacher performance is appraised annually in an Enhanced Performance Management System (EPMS), which assesses teachers' performance based on 16 different competencies, including their work in the classroom and their interaction with the greater school community. Teachers first conduct a self-appraisal, and then they are evaluated against the EPMS by supervisors. These evaluations are qualitative and consist of written feedback rather than numeric scores of specific indicators. Based on the evaluation, teachers develop professional development plans. The results of the evaluation also help determine a teacher's "current estimated potential," which shows teachers how principals think their career trajectory will look within the next several years. Teachers can also earn rewards, including honors and salary bonuses. The Ministry also selects teachers for awards and recognition at the national level.

Students are also rewarded for performance through the EduSave incentive system. The government has a SG\$6.7 billion (US\$4.7 billion) fund dedicated to these grants, and

typically students in the top 10 percent of their class can expect small grants of about SG\$350-\$500 (US\$250-350). Larger grants are available through other EduSave awards.

Supports for Equity

Supports for Young Children and Their Families

Singapore has adopted a number of policies to support families with children. Working mothers in Singapore are entitled to 16 weeks of paid maternity leave if their child is a Singapore citizen and they have worked at their company for at least three months. Otherwise, they are entitled to 12 weeks of maternity leave. Fathers are entitled to two weeks of paternity leave. Working parents can also receive six days of paid child care leave per year if their child is under 7 years of age.

The government in 2008 also adopted the Enhanced Marriage and Parenthood Package, which includes a “Baby Bonus,” providing cash awards of up to SG\$10,000 (US\$7,000) for each child, and a Child Development Account (CDA), providing dollar-for-dollar matching of parent contributions to an account that can be used for health care, child care, and other purposes. The government also makes an initial grant contribution of SG\$3,000 (US\$2,100) to each child’s CDA.

Singapore provides universal health care to citizens. The primary form of support is government subsidies, which cover 80 percent of the cost of care in hospitals and clinics. These subsidies are supplemented by the “3Ms” – Medisave, a mandatory savings program; Medishield, catastrophic health insurance; and Medifund, an endowment to support health care for low-income families. In 2013, the government set up Medifund Junior, which provides support for low-income children and extended the fund’s benefits to include primary care, dental services, prenatal care, and delivery.

To support new parents, the government in 2016 launched a pilot program—which has since become permanent—called KidSTART, which partners with hospitals and community organizations to provide supports for low-income families, including home visits and parent education, from pregnancy until children reach age 3. The KidSTART program also provides regular developmental screenings in order to identify needs early and connect families with appropriate supports.

Child care for children up to age 4 in Singapore is privately run, but the government has played an increasingly broad role in subsidizing fees to ensure that it is affordable for all families. In 2009 it created, and in 2014 expanded, a program called the Anchor Operator Scheme (AOP), which provides subsidies to participating centers with a requirement that they cap fees. The Partner Operator Scheme (POP) was added in 2016 to subsidize additional centers. The government also subsidizes child care expenses

directly for low-income families, and sets aside 30 percent of slots for these families. Parents also can use funds from Child Development Accounts to pay for child care.

Supports for School-Aged Children

The government's Ministry of Social and Family Development (MSF) administers ComCare, which provides cash grants to low- and moderate-income families on a sliding scale. The aid includes temporary assistance for unemployed individuals, as well as long-term assistance, including financial support for school-related expenses for children of elderly adults or adults with cognitive or physical challenges.

The MSF also oversees the National Council of Social Service, an umbrella group of 450 private organizations that provide services to Singapore citizens. Services include school-based social work and support for students at risk of dropping out of school.

The Ministry of Education also provides financial assistance for students from low-income families. The aid supports school fees and other expenses for students in government or government-aided private schools. Financial aid for independent schools is also available.

Learning System

Preschool

Singapore serves children age 3-6 in kindergartens, both public and private. There are also child care centers available for students under age 6. Until 2013, child care centers were overseen by the Ministry of Social and Family Development and the kindergartens by the Ministry of Education. In 2013 the government created a new agency, the Early Childhood Development Agency (ECDA), under both ministries to coordinate oversight of all early childhood education.

Most child care centers and kindergartens in Singapore are privately run but licensed by ECDA. Beginning in 2013, the government opened a small number of public kindergartens to expand access and serve as models to promote quality programming and also to increase access for low-income families. In 2017, the Prime Minister announced plans for a fourfold increase in the number of public kindergartens by 2025.

ECDA sets regulations for and inspects programs for children ages 4-6 in addition to programs for younger children. Data from inspections are not publicly available to parents or the media, or on the internet. ECDA also established the Singapore Preschool Accreditation Framework (SPARK) to accredit centers. Accreditation is voluntary, but there are incentives to participate, including access to government subsidies and to professional development for staff; as of 2017, 40 percent of centers in Singapore had

attained SPARK certification. Of these, about 10 percent of centers have also attained SPARK certification (commendation). Certified centers achieve this commendation if they demonstrate strong teaching and learning practices.

ECDA has developed curriculum frameworks for children aged 4 to 6 called the Nurturing Early Learners Kindergarten Curriculum Framework. It is suggested guidance. The government does not assess learning outcomes for students before they enter primary school; the first nationwide screening of children's literacy and numeracy skills takes place in the first month of primary school.

Singapore's current priorities are to raise the income ceiling and the amounts of subsidies and expand the number of centers to increase access.

Primary and Secondary Education

System Structure

In Singapore, the system includes six years of primary school, followed by four to five years of secondary school, and one to three years of post-secondary school. The curriculum for primary schools is common for all students in years one to four. For years five and six, students can take individual courses at the foundation or standard level. The foundational level courses are designed to provide more support for students. Most students have three options for the pace of study they take in secondary schools: express, Normal (Academic), and Normal (Technical). All offer the same course of study, but express is on a faster pace, and Normal (Technical) uses a more hands-on pedagogy. In most cases, students make an initial choice of pathway based on their scores on the Primary School Leaving Examination (PSLE), taken at the end of primary school. But parents and students can petition to have students move to different streams if they demonstrate accelerated learning or that they need more help. Furthermore, Singapore is now piloting allowing students to choose streams for specific subjects, rather than their overall course of study. For example, a student could pursue a technical stream in mathematics, but an express stream in English. Currently, 28 secondary schools offer subject-based banding in all subjects, with many more offering it in at least some subjects. The goal is to have full subject-based banding in all secondary schools by 2024.

In addition to these options, there are four specialized schools for students who perform poorly on the PSLE. These schools offer more practical-oriented coursework. There are also specialized independent schools that focus on the arts, sports, and mathematics and science. These schools receive public funding and use MOE curriculum, but have more flexibility in their program offerings and courses of study for students.

Following secondary schools, students have multiple postsecondary options: Junior Colleges, Polytechnics, Institute of Technical Education (ITE), and Arts Institutions. Students elect from these options based on bands chosen in secondary school and results from the General Certificate of Education (GCE) examinations, described more below. Students usually enroll in either Junior Colleges or ITE immediately following secondary school. Junior College is a two- or three-year pre-university education, preparing students for the required examinations to enroll in universities or for entry into Polytechnics. ITE offers technical or vocational education, through National ITE Certificate (Nitec) aligned courses and work-based learning training. Students graduate from ITE with a Nitec or Higher Nitec qualification. The Polytechnics is a more practice-oriented pathway and are mostly for students with higher level qualification or a Nitec qualification from ITE. Some students may pursue university education if they pass the A-level examination following Junior College or graduate from Polytechnics.

Curriculum, Assessment, and Qualifications

The Singapore Ministry of Education oversees the development of the national curriculum, which includes “Desired Outcomes of Education.” The desired outcomes are student excellence in life skills, knowledge skills, and subject discipline knowledge organized into eight core skills and values: character development, self-management skills, social and cooperative skills, literacy and numeracy, communication skills, information skills, thinking skills and creativity, and knowledge application skills.

The primary school curriculum includes nine subject areas: English, mother tongue language (instruction in mother tongue language is available for Chinese-, Malay- and Tamil-speaking students), mathematics, science, art, music, physical education, social studies, and character and citizenship education. Based on examination results at the end of Primary grade 4 and parent input, students take English, mother tongue language, mathematics, and science, each in one of two tracks: a standard track for students who passed the subject, or a foundation track. This subject banding allows students to enroll in standard level courses in their areas of strength and in fundamental levels for other subjects to provide them with extra support to better prepare them for the transition to secondary school.

At the secondary level, there are some variations depending on the type of school and program a student attends. Schools primarily targeted at accelerated learners and offering many more express courses have two programs: O-level and Integrated. The O-level program is a four-year course of study leading to the General Certificate of Education (GCE) O-level examinations, which qualify students for junior college, polytechnic, or the Institute for Technical Education (ITE). Students are required to take English, mother tongue language, mathematics, science, and humanities (geography,

history, English literature), and there are several electives available at the upper secondary level (Secondary 3). The Integrated program is a six-year course of study leading to the GCE A-level examinations, which qualify students for universities. Subjects vary across schools.

Students in the Normal (Academic) program take the same subjects as students in the Express O-level program, leading to the GCE N-level examination at the end of their fourth year. They have the option of taking a fifth year and sitting for the GCE O-level. Eligible students can also take Express-level courses.

For students in the Normal (Technical) program, compulsory subjects include English, mother tongue language, mathematics, computer applications, and social studies. Eligible students can take some courses at the Normal (Academic) or Express level. At the end of Secondary 4, they sit for the GCE N-level examinations, which qualify them for the Nitec program at the ITE or Normal (Academic).

The Ministry of Education has a great deal of control over how the curriculum is implemented. As it promoted a shift from instruction based on teacher lectures and student memorization to one that emphasizes student engagement and creativity, Ministry officials met regularly with school leaders and developed extensive professional learning opportunities for teachers as they have implemented the curriculum. However, in recent years, the Ministry has sought to loosen their control over the curriculum, encouraging schools to consider the curriculum as a framework, and to adapt and work within the framework to meet the needs of their students. Secondary schools are also encouraged to develop additional courses to bring a distinct program to their schools; students choose their secondary schools, and often select those whose unique approach matches their interests.

Teachers perform continuous assessment of their students at all levels of education. On a day-to-day basis, this assessment is informal and based on student work in and out of the classroom. Previously, all students in primary school took school-based exams throughout the year and at the end of each year, but in 2019 the government dropped the exams for Primary 1 and 2 and plans to drop the mid-year exams for Primary 3 and 5, as well as Secondary 3, by 2021. By removing these exams, the government hoped to shift the focus away from grades to learning in general and to promote the idea that learning is not a competition.

After six years of primary school, all students take the Primary School Leaving Examination (PSLE) in four subjects: English, math, science, and mother tongue. Schools place students into separate exam levels based on the subjects they took in years five and six of primary school. Starting in 2021, the Ministry plans to update the

PSLE scoring process to decrease competition between students. Instead of being benchmarked against each other, students will be graded based on individual performance in subjects. These scores will be translated to wider Achievement Level tiers. Their exam scores help students determine which band they will join in lower secondary education, as well as which school they will attend. Students can request that their examination scores be sent to up to six lower secondary schools, ranked in the student's order of preference. The schools then choose their students based on their PSLE rankings. The Ministry of Education helps to place students who are not accepted into their schools of choice. The Ministry also allows some schools to practice Direct School Admission (DSA), admitting students based their talents in academic areas, sports, or co-curricular activities, before the PSLE results are released, to provide greater diversity in student talents and interests. Since 2018, schools can offer up to 20 percent of their places to students through DSA.

Online Learning

The Student Learning Space (SLS) [provides](#) a library of curriculum-aligned, Ministry-curated resources (e.g., lesson plans, videos, assessments.) for all grade levels and subjects, largely created by teams of teachers seconded to the Ministry full-time to do this. The resources and the SLS system are continually updated based on feedback from teachers and students. The SLS was announced in 2013, piloted in 2017, and [introduced](#) in all schools in 2018. Every student in grades 1-12 has an account to access the SLS. Using [templates](#) provided within the SLS, teachers can create lessons by compiling SLS resources or using a mix of SLS resources and their own materials. Lessons can then be assigned to students to complete in or out of school in the SLS platform. Students can also access SLS resources on their own, even if not assigned. Within a teacher-assigned lesson, students can submit open-ended responses and comment on each other's work. When students complete teacher-assigned assessments, teachers receive feedback on their performance, individual and aggregate). Teachers can choose to share the lessons they have created with their peers within the SLS.

Learning Supports

Despite the strong emphasis Singapore places on equitable funding, there is still a large gap between Singapore's top-performing students and its lowest-performing students. The gap was made apparent in the most recent Programme for International Student Assessment (PISA) and Trends in International Mathematics and Science Study (TIMSS) results, although it has been narrowing in mathematics and science. Educators hope to address this gap through early diagnosis and intervention of learning issues. Students are screened at the beginning of first grade for reading and numeracy skills, and students who are considered to need extra help (approximately 12-14 percent) are

taught in small learning support programs to ensure that they keep pace with their classmates. As part of this program, the Ministry funds learning specialists at each school who work with these groups of students.

Students who are still struggling by the time they are in lower secondary school are offered extra time and support to complete their study, and may be asked to join the Normal (Technical) stream for most subjects. If students show improvement, they are allowed to transfer into a faster paced band. They can also take courses in different bands, if they are only struggling with a particular subject.

Special Education

Whenever possible, the government encourages enrollment of students with special needs in mainstream schools, either initially or after having met certain benchmarks in special education. Currently, about 80 percent of all students with special needs attend mainstream schools. To help facilitate this “mainstreaming,” Allied Educators are placed in mainstream schools to help students with conditions such as dyslexia or autism. As of 2018, there was at least one Allied Educator in every mainstream primary and public school, a 40 percent increase over the past five years. The Ministry has also provided specialized training in special education to a designated group of general education teachers in each mainstream school in order to provide a strong support system for students with special needs. As of 2019, about 15 percent of teachers in mainstream schools had completed this training. Beginning in summer 2020, the Ministry will provide all teachers in mainstream schools with access to online professional learning focused on supporting students with special needs.

In 2019, the Ministry implemented two peer mentoring interventions to support students with special needs in mainstream schools. Circle of Friends allows students with social, emotional or behavioral difficulties to meet with their teacher or Allied Educator, along with a group of six to eight of their peers, to work through any challenges facing the student over five to eight sessions. Facing Your Fears is for students with anxiety. In this intervention, in groups of two to four, students with anxiety meet with facilitators and Allied Educators to learn self-management strategies over 10 weekly sessions.

For students who need more intensive or specialized assistance, there are 19 government-funded special education schools run by 12 social service agencies serving populations with highly specific needs: the deaf, the blind, or those with the most severe cognitive challenges. Special needs education is available through the post-secondary level, where students with intellectual disabilities are prepared for the

workforce through special training programs. These schools serve less than 2 percent of the student population.

The Ministry allocates extra funds for special needs students (at 150 percent and 300 percent of the base per student cost, depending on whether students are mainstreamed or served in special schools). The Ministry has increased spending for special schools by 40 percent from 2015-2020 but has pledged to increase support. The National Council of Social Services also contributes funding to the schools, specifically for additional social supports.

Career and Technical Education

Singapore's career and technical education (CTE) offerings take place primarily at the post-secondary level. At the primary and secondary levels, the emphasis is mainly on career exploration and guidance. A career guidance curriculum has been mandatory since 2014, and the Ministry of Education has created a web portal that enables students to examine their own strengths and interests and explore careers that match them. In addition, students pursuing the Normal (Technical) route in secondary school take practical-oriented coursework that prepares them for exams that qualify them for the Institute of Technical Education (ITE), the leading post-secondary CTE institution.

Development of the System

The ITE was created in 1992, at a time when vocational education was viewed as a "last resort" for students who could not achieve in academic settings, and Singapore's five polytechnics, founded in the 1960s, were not considered particularly desirable educational options. The ITE was intended to revolutionize vocational education and be a world-class example of how vocational and technological skills could be translated to a knowledge-based economy. Since 1995, enrollment in vocational education has doubled, and now makes up 65 percent of the cohort who go on to post-secondary education (ages 16-18), with 25 percent accepted into the ITE and another 40 percent attending polytechnics. The ITE is recognized as producing highly skilled graduates; salaries for ITE graduates, who receive a National ITE Certificate (Nitec), have also become quite high in recent years. As of 2018, 76 percent of ITE graduates were able to successfully find employment within six months, leading more students to see vocational education as a strong choice for future success.

Polytechnics now offer nearly 150 diploma programs, and, like the ITE, have worked to remain closely connected with industry, growing and changing alongside Singapore's economy. Students receive a combination of experiential and classroom-based learning. As many as 40 percent of graduates of post-secondary vocational education go on to pursue a university degree, and are often able to complete a bachelor's degree in two

years because they are able to transfer credits, depending on their focus during post-secondary education.

Recent Reforms

Recently, the Singaporean government has sought to further strengthen its vocational education programs. SkillsFuture, the latest iteration of Singapore's CTE system, was launched in 2016 following the recommendations of the ASPIRE (Applied Study in Polytechnics and ITE Review) commission.

ASPIRE envisioned a coherent workforce-development system, beginning in middle school and extending throughout adulthood. For young people, it included strengthened education and career guidance, "enhanced" internships, more overseas market immersion opportunities, and the development of individual learning portfolios. For those starting work, it included apprenticeships, known as "learn and earn" programs, and credits toward course fees for work skills-related instruction. And for adults, it included monetary awards for skills courses, subsidies for mid-career professionals pursuing additional coursework, and fellowships. Anchoring the system is a skills framework and set of qualifications, overseen by the SkillsFuture Council, a body led by the deputy prime minister and including leaders from industry, labor, and government. The framework outlines a body of skills in 34 fields.

In February 2020, the government announced a series of steps to upgrade the program. Most notably, the plan included a \$500 "top-up" credit for coursework for adults 25 and older, plus an additional \$500 credit for coursework for adults aged 40 to 60. These credits are in addition to \$500 credits that have been issued since 2016; the previous credits are still valid if they have not been used. Individuals must use the top-up credits by 2025, however. They can be used for more than 8,000 courses offered by polytechnics, ITE, and universities.

The government also called for increasing the number of work-study placements for students from 1,600 to 5,000 by 2025, and doubling job placements for mid-career workers, to 5,500 by 2025, and increasing the capacity of reskilling programs for such workers. The plan also called for \$10,000 grants to employers to cover 90 percent of the cost of skills training and job redesign, and 20 percent salary support, up to \$6,000, to employers who hire workers aged 40 or older through professional conversion or career transition programs.

Educator Quality: Teachers

Teacher Recruitment

Only one institution—the National Institute of Education (NIE)—is authorized to prepare teachers, and it offers both a master’s degree and a bachelor’s degree route into teaching. In this way, Singapore limits its teacher recruitment only to those students who are able to get into the country’s rigorous research universities. Each year, Singapore calculates the number of teachers it will need, and opens only that many spots in the training programs. The selection process is competitive, in part because teaching is a highly regarded profession in Singapore and because students in teacher-education programs receive a stipend during their training. On average, only one out of eight applicants for admission is accepted. Those who are accepted have typically not only taken Singapore’s challenging A-level exams but will have scored at least in the middle of the score range. The many other steps in the application process include tough panel interviews that focus on the values, skills, and knowledge that make for a good teacher, as well as intensive reviews of their academic record and their contributions to their school and community.

Teachers’ salaries in Singapore are largely commensurate with those of other professions. The maximum salary for a lower secondary teacher is twice the GDP per capita. Primary teachers earn a starting salary of SG\$43,000 (US\$30,390); those with five to 10 years’ experience earn SG\$62,000 (US\$43,819); and those with 10 to 20 years’ experience earn SG\$73,000 (US\$51,593). Secondary teachers start at SG\$46,000 (US\$32,511); those with five to 10 years’ experience earn SG\$62,000 (US\$43,819); those with 10 to 20 years’ experience earn SG\$75,000 (US\$53,006). The Ministry of Education monitors teacher salaries in relation to other professional salaries, and adjusts them accordingly to ensure that they are competitive. Successful teachers have the opportunity to earn retention bonuses, which can range from US\$10,000 to US\$36,000 every three to five years, and performance bonuses, which can be up to 30 percent of their base salary. Eligibility for these bonuses is determined through annual evaluations that also serve as a basis for coaching and mentoring between teachers.

Teacher Initial Education and Training

The National Institute of Education (NIE) is located in the Nanyang Technological University, one of the most prestigious institutions in the hierarchy of Singapore’s institutions of higher education. All primary and secondary teachers are trained at the NIE, which offers both bachelor’s and post-graduate degrees. During their training, teacher candidates receive a monthly stipend equivalent to 60 percent of a starting teacher salary, and their tuition is covered by the Ministry of Education. Once they have completed training, teachers must commit to three full years on the job.

The undergraduate teacher-education program is a four-year program that includes 22 weeks of practical experience in schools. The graduate program is a 16-month program that includes 10 weeks of practical experience. Students entering the graduate program first attend the Introduction to Teaching program run by the Academy of Singapore Teachers (AST), a professional learning organization run by teachers. The prospective teacher candidates then spend a few months to a year in schools as untrained contract teachers before beginning their coursework, in order for them to gauge their interest in teaching.

Both undergraduate and master's programs are guided by the Teacher Education Model for the 21st Century, a framework that states the values, skills, and knowledge ("V3SK") needed for teachers. The curriculum for the undergraduate route includes academic studies—the content the teachers will teach—as well as education studies, curriculum studies, and service learning. Undergraduate students also have opportunities to participate in practicums in other countries.

After graduation from both the undergraduate and graduate programs, all beginning teachers take part in a two-year induction program led by the AST and funded by the Ministry of Education. During this period, teachers have a reduced teaching load in order to attend classes and work with a trained mentor.

In 2019, early childhood educator training programs were merged under the National Institute of Childhood Development (NIEC), in close collaboration with NIE. NIEC is a centralized teacher training institute offered at four campuses: ITE College Central, Ngee Ann Polytechnic, Temasek Polytechnic, and City Campus. NIEC offers certificate-level and diploma-level pre-employment training for postsecondary students as well as continuous education courses for mid-careerists. All students will be offered training awards, including fully sponsorship and allowance to further incentivize people to join the program. The courses involve modules in relevant areas as well as practicums to effectively prepare students. They can also participate in the Student Internships Program to further gain practical experience. To teach at Ministry Kindergarten or ECDA preschool, educators must have an early childhood diploma qualification or participate in a nine-month sponsorship program as a trainee teacher. To be an educator at an ECDA infant or toddler site, educators must have an early childhood certificate.

Teacher Career Ladders

Singapore's well-known three-track career ladder is at the heart of its collaborative, profession-led approach to improving teaching and learning, the culture of schools, the educator workforce, and the entire system. The career ladder ensures that teachers can stay in the profession while taking on new roles and responsibilities, and provides the backbone for their peer-to-peer mentoring, collaboration coaching, and development

systems. It also guarantees that curriculum development is led by those who know teaching and learning best. For these reasons, it is not only crucial for Singapore's strategy to recruit and retain teachers, but also a key element of its professional growth strategies and its approach to overall teaching and learning.

At the primary and secondary level, once teachers demonstrate their eagerness and readiness to take on a new role, there are three similar directions their career can take: the teaching track, the leadership track, and the specialist track. In the teaching track, teachers can work their way up to becoming Principal Master Teachers. In the leadership track, teachers can be promoted from a leadership position within the school all the way up to the position of Director-General of Education. In the specialist track, teachers are focused on research and teaching policy, with the highest-level position being Chief Specialist. Teachers do not automatically get promoted to the next level. Moving along to new roles and responsibilities requires teachers to demonstrate through the Educator Performance Management System (EPMS) that they have the requisite knowledge, skills, and competencies to do the job well, as well as that they have completed any required training or mentorship. The EPMS includes an annual evaluation in three areas: Professional Practice, Leadership Management, and Personal Effectiveness. Teachers are expected to set and meet personal goals for their work, and demonstrate improvements in a rubric of competencies during observations of their teaching.

The EPMS is also used to determine teachers' fit for the career pathways. All teachers are observed for three years in order to determine which career path would best suit them. After teachers choose a career path based on their EPMS score, observations, and their own preference, they may make a lateral move if they feel the pathway does not suit them. Talent and potential for leadership is identified early, and these teachers are then groomed for future leadership roles.

Within each track there are also 13 stages, which offer salary increases independent of teachers' specific job descriptions. For the first three years of teaching, all teachers receive annual raises. After that, while all teachers may receive annual cost of living increases, substantial raises are mainly available as part of promotion along the career track. In addition, annual performance bonuses for superlative work in a given year are available for between 10 percent and 30 percent of teachers' salary.

A similar ladder exists in early childhood teaching. ECDA and SkillsFuture Singapore (SSG) developed a Skills Framework for Early Childhood Care and Education, describing the career pathways of early childhood educators. It highlights the 13 occupations for early childhood educators, which fall within three tracks: Leader, Teacher, Educarer. Educators can progress within each track and move laterally

between them. To progress along the pathways, educators must receive ECDA certification, and acquire relevant competencies and professional qualifications. Educators work with children ages 2 months to 4 years in kindergarten and childcare centers while teachers work with children ages 4 to 6. Leaders serve in leadership roles in both kindergarten and childcare centers. In the educator and teacher track, educators can advance to senior educator and senior pre-school teacher, respectively. Leaders can advance to pinnacle leader. As teachers advance through and between the tracks, their salary increases respectively.

Teacher Professional Development

Teachers have access to several types of professional development opportunities. They can improve their practice through courses at the National Institute of Education (NIE) or at the AST, a teacher-led organization established by the Ministry of Education dedicated to providing conferences, forums, and seminars for teachers, or participate in study leave for those wanting to pursue degree programs. These programs range from in-service training to online classes on a variety of subjects related to teaching. Teachers can participate in as many as 100 hours of government-funded professional development per year. The Ministry and NIE also offer scholarship opportunities for teachers seeking master's and doctoral degrees in Singapore or abroad, either full- or part-time.

Educator Quality: Principals

Singapore prioritizes developing skilled principals who can ensure that their schools offer high-quality and equitable learning opportunities to their students. Because of Singapore's career ladder system, teachers choose the leadership track in consultation with their principal in their third year on the job, and then they can advance to department head and vice principal if they demonstrate the right combination of skills and if the role is available to them. Therefore, all principals were first teachers and then served in two administrative roles before advancing to school leadership. Department heads and other vice principals usually participate in the Management and Leadership in Schools Program run by the NIE, which aims to proactively prepare them for the next stage of the leadership track. Vice principals on the verge of being promoted to principals must participate in a two-day simulation test and interview process that requires them to demonstrate their capability to respond to real-world scenarios. Those who are selected then go on to the Leaders in Education Program at the NIE, which incorporates coursework, fieldwork, mentoring, and visits to leaders of other industries and other countries. Both the Leaders in Education Program and the Management and Leadership in Schools Program include training in management theory and practice.

Singapore balances both mandates and positive incentives for professional development. Cluster superintendents, themselves former principals, are in charge of designing professional development and collaborative learning opportunities for principals in the cluster under their supervision. They also evaluate their principals using the Enhanced Performance Management System, working with the principal to set personal goals for improvement and designing a professional learning plan that will help the principal meet those goals. Principals who have served a minimum of six years are permitted to take one-year sabbaticals on full pay to make international study visits, conduct research and write books, or pursue higher education.

Another way that Singapore supports its principals to develop their skills is through an international school leader exchange program, Building Educational Bridges, which focuses on building leaders' capacity to innovate by learning more about international education systems' leadership practices. Principals can apply for Ministry funding to cover the cost of this two-week program, offered through the NIE.