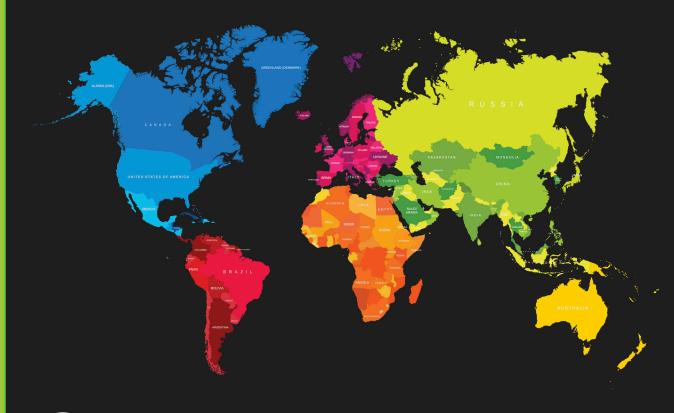
# EMPOWERED EDUCATORS

HOW HIGH-PERFORMING SYSTEMS SHAPE TEACHING QUALITY AROUND THE WORLD

SINGAPORE: A TEACHING MODEL FOR THE 21<sup>ST</sup> CENTURY









This paper is part of a series of policy and country briefs produced as part of *Empowered Educators* – a landmark, international comparative study of teacher and teaching quality in the world's top-performing education systems, commissioned by the Center on International Education Benchmarking® of the National Center on Education and the Economy®. For a complete listing of the materials produced by the *Empowered Educators* project, including a searchable database of recorded interviews and authentic tools, please visit www.ncee.org/empowered-educators.

The National Center on Education and the Economy was created in 1988 to analyze the implications of changes in the international economy for American education, formulate an agenda for American education based on that analysis and seek wherever possible to accomplish that agenda through policy change and development of the resources educators would need to carry it out. For more information visit www.ncee.org.

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Research for the *Empowered Educators* study was coordinated by the Stanford Center for Opportunity Policy in Education (SCOPE) at Stanford University. SCOPE was founded in 2008 to foster research, policy, and practice to advance high-quality, equitable education systems in the United States and internationally.

# Singapore: A Teaching Model for the 21st Century

A tiny island that became an independent country only in 1965, Singapore has rocketed in the past half century to become an international leader in education. This position of prominence became evident with the release of results from the 2003 Trends in International Mathematics and Science Study (TIMSS), which showed that 90 percent of Singaporean students scored above the international average in mathematics and science. In 2015, Singapore's fifteen-year-olds outperformed those of every country in reading, mathematics, and science on the 70-nation Programme for International Student Assessment (PISA).

Singapore's success in education is particularly noteworthy because of its diversity. Its multicultural and multilingual society is comprised primarily of Chinese (76 percent), Malay (15 percent), and Indian (7.5 percent) peoples, whose 'mother tongue' languages – Mandarin, Malay, and Tamil – are taught in all schools. Although English is the language of instruction in Singaporean schools, it is the primary language for a minority of students, all of whom are expected to be fully bilingual, and many of whom speak more than two languages.

With few natural resources, Singapore regards its citizens as its most valuable resource, placing education as a central concern in policy and government investment. The nation aims to develop internationallyminded, culturally-competent citizens with a high degree of literacy and technical expertise. Well-trained teachers and effective instruction are seen as a key vehicle to achieving this goal.

This brief describes the way the Singapore education system is structured to produce high-quality teaching.

# Teachers in Singapore

Teaching is a highly attractive profession in Singapore. This is true for several reasons. Starting salaries for teachers are comparable to those of accountants and engineers in the civil service. Tuition for teacher education students is not only free; pre-service teachers also receive a salary while they are preparing to become teachers, along with funds to pay for books and laptop computers. Teachers obtain secured positions after graduating, and the system provides career ladders that suit teachers' diversified aspirations. In addition, teaching as a whole enjoys high social status and respect from the Singapore public.

Working conditions in Singaporean schools also contribute to the attractiveness of the profession. The Ministry of Education (MOE) provides

Universities in these countries are not trying to prepare a large number of teachers who will enter and leave the profession quickly. They are investing in individuals who will generally stay in the profession for a substantial career.

funding for scholarship and study leave – both locally and abroad, facilitating teachers' movement along selected career ladders and learning along multiple dimensions.

Azahar Bin Mohd Noor, a teacher at Raffles Girls School, explained how the policies that support teachers throughout their careers made teaching an attractive profession. "In the past, I was reluctant to join teaching, because I felt that we sometimes equate remuneration with status. But at least in the last 10 years, teachers are very well paid. With that, I think the status of teaching and teachers have gone up not only in terms of money, but also in terms of professionalism. I think today, we can really call ourselves professionals, not just workers. We know that we are professionals."

The policies that attract individuals into teaching also help keep them there. The resignation rate for teachers in Singapore is low by international standards, at less than 3 percent.

# Recruitment into teaching

In large part because of the low attrition rate, Singapore is able to be very selective in admissions to initial teacher education – admitting between just 1,100 and 1,500 in each cohort – recruiting capable individuals and investing in their training. The MOE casts a wide net, advertising in various media and platforms to "sell" teaching as an attractive career; marketing and publicity strategies focus on informing prospective candidates about the value of the teaching profession and the many professional opportunities in education.

The application process for entry into the nation's only teacher education institution, the National Institute of Education (NIE), is highly selective. Academically, candidates are selected from among the top one-third of their age cohort, including high levels of literacy, and some may be asked to sit additional English proficiency tests. Applicants CVs are screened for appropriate coursework and qualifications, and evidence of interest in education. Shortlisted candidates are then interviewed by a panel of experienced principals, who assess their aptitude for teaching, as well as communication skills, passion for education, and the potential to be a good role model. Approximately one out of three shortlisted applicants makes it through the selection interview.

Figure 1 (next page) illustrates the recruitment and selection process in Singapore.

For many teacher candidates, training begins even prior to entry into the teacher education program. Candidates accepted into postgraduate diploma programs are required to attend the Introduction to Teaching Programme, run by the Academy of Singapore Teachers (AST). In this way, prospective teacher candidates are connected with experienced teachers even before the start of formal training. The program is an introductory course that provides the teacher candidates with an awareness of the expectations and ethos of the profession, and the fundamentals of teaching. These

Figure 1: The Process of Teacher Recruitment in Singapore



# Check for minimum qualifications:

- Academically, applicants should be in the top 30% of their age cohort
- Applicants should have completed relevant school and university education
- Applicants must show evidence of interest in children and education

# Check literacy:

- Applicants must have a high level of literacy
- Evidence shows that teachers literacy affects achievement more than any other measurable variable

# Check attitude, aptitude and personality:

- Conducted by a panel of three experienced headmasters
- May include practical tests of activities

# Check attitide, aptitude and personality:

- Teachers are monitored during their initial teacher training at NIE
- A small number of candidates who do not demonstrate the required standards are removed from the course

Source: McKinsey & Company, 2007, p. 17

include adopting a growth mindset, lesson planning and enactment, assessment for learning, classroom management, ICT infusion, and Character and Citizenship Education.

Following the Introduction to Teaching Programme, teacher candidates spend time in schools as untrained contract teachers. The purpose of this stint – usually between a few months and a year in length – is to enable the school to assess the applicant's suitability for teaching, and for the applicant to affirm their interest and passion for the profession. It is also to allow applicants to experience the life of a teacher and relate their future learning at NIE to real life experience.

If the candidate is assessed by the school as being suitable for teaching during the School Assessment Exercise at the end of their school stint and they remain committed to pursuing this profession, they will be enrolled in NIE to undergo initial teacher preparation. Candidates will continue to be monitored at NIE while they undergo their initial teacher preparation. Those who do not meet the requirements on attitude, aptitude, and personality – typically a small number – will be counseled to leave the program.

Starting from the school stint before entering pre-service education, candidates receive a full monthly salary from MOE. Candidates who are mid-career professionals may also be eligible for additional salary increments in recognition of their previous working experience. The salary range for teacher-candidates is just below that of starting teachers.

Upon graduation, new teachers have to agree to serve as teachers for three or four years, depending on whether they attended the graduate or undergraduate program of study. Successful applicants are assured of employment upon program completion. At the same time, schools are assured of new teachers who are well prepared and have been specifically selected to meet their needs. There is an open posting exercise centrally administered by the Ministry on an annual basis for all teachers after they have completed at least two years of service in their first placement. Principals are free to identify suitable candidates for their schools but must first seek the consent of principals of the schools where teachers are currently serving.

### **Teacher Education**

NIE is the sole teacher-education institution in Singapore. In addition to initial teacher preparation, NIE provides in-service programs, graduate programs, and various courses and programs for teacher leaders, heads of departments, vice-principals, and principals.

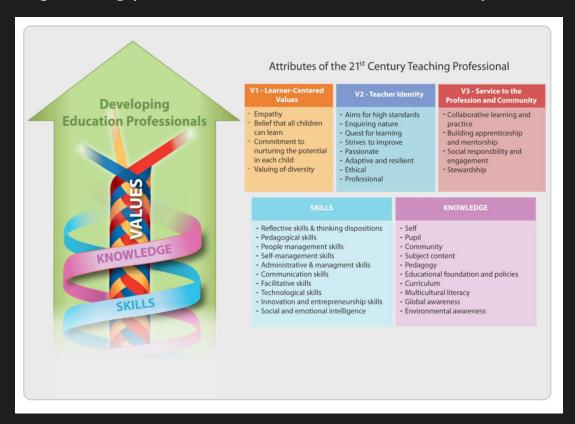
Teacher education at NIE is guided by the Teacher Education Model for the 21<sup>st</sup> Century (TE<sup>21</sup>), a framework that articulates the values, skills, and knowledge needed of teaching professionals (known as 'V³SK') to develop learners who are problem-solvers, critical thinkers, and contributors to the community. Alongside this framework are the Graduand Teacher Competencies, which outline the professional standards, benchmarks, and goals for graduates of the initial teacher education programs. TE<sup>21</sup> aims to prepare teachers for a heterogeneous student population, and emphasizes experiential and participatory learning. It also is intended to prepare teachers to be autonomous thinking professionals who can perform the multiple roles of 21<sup>st</sup> century teaching, such as knowledge organizer, motivator, facilitator, coinquirer, and designer of the learning processes.

NIE's 'V<sup>3</sup>SK' teacher education curriculum consists of Academic Subjects, Education Studies, Curriculum Studies, service learning, and a significant practicum period. Academic Subjects cover knowledge of the content and fundamental concepts and principles of either one or two subjects, depending on the program in which the student teacher is enrolled.

The suite of courses under the umbrella of Education Studies covers the disciplines deemed essential for providing student teachers with the necessary foundation to understand and engage their learners, provide effective instruction, and participate in reflective practice in schools. They focus on core educational concepts such as pupil development, the learning and thinking process, the social context within which schooling operates, the application of psychology in teaching and learning, assessment literacy, and the use of instructional technologies.

Curriculum Studies aim to equip student teachers with pedagogical methodologies for teaching specific subjects. In the primary track, student teachers are prepared to teach three subjects, typically English, Mathematics, and Science. Those in the

Figure 2: Singapore's Teacher Education Model for the 21st Century (TE21)



secondary track can elect two major and one minor subject areas. Candidates in this track are expected to be able to teach their major subject at all levels of secondary school. Upon graduation, most secondary teachers will teach two subjects.

The NIE teacher education model has a strong emphasis on developing teachers' values, including engagement with community. For example, the Group Endeavours in Service Learning (GESL) program is a mandatory community involvement project. It aims to help student teachers build strong partnerships with the community by requiring them to engage with communities of their choice in groups of 20, spend at least 20 hours of contact time with the selected community, and produce a tangible end product. GESL aims to broaden student teachers' knowledge and understanding of the wider community.

NIE's teacher education programs also have an important component for developing student teachers' competencies for effective oral and written communication in the classroom, known as Language Enhancement and Academic Discourse Skills (LEADS). They are also expected to develop skills in research.

Teacher education in Singapore involves considerable clinical experience in the form of practicums. The practicum component makes up about 20 percent of the total program component (or 22 weeks) of the four-year undergraduate program and about 35 percent (or 10 weeks) of the 16-month postgraduate program, which was expanded in 2015 to provide more time for the practicum. In the four-year program, these are designed to be developmental in nature, with each posting structured to

incrementally build candidates' teaching competencies. These experiences – School Experience, Teaching Assistantship, and Teaching Practices 1 and 2 – serve as a critical resource for student teachers' discussions and reflections in coursework at NIE, and are helpful in deepening their understanding of both theory and practice.

School experience begins at the end of the candidate's first year of pre-service education and placement is for one week in a primary school, with another in a secondary school. This first posting is about observation, with the purpose to expose student teachers to the realities of the classroom and school setting. Student teachers are required to collect observation data, which are used for their coursework when they return to NIE. The teaching assistantship comprising five weeks in Year 2 enables student teachers to observe and reflect on lessons conducted by their cooperating teachers and other experienced teachers. Through assisted teaching, they gain hands-on experience by helping the cooperating teacher plan parts of the lessons, prepare classroom resources, and manage students. Throughout, student teachers write and submit weekly reflections to their NIE faculty supervisor.

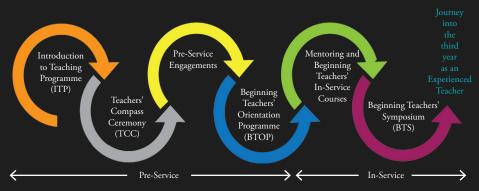
The final practicum posting (Teaching Practice 2) is, in many contexts, the main practicum posting, and runs for 10 weeks for both the four-year and the 16-month programs. The main aim of this final practicum is to allow student teachers to acquire the full range of teaching competencies required of a beginning teacher – planning, developing resources, teaching lessons, managing the classroom effectively and being exposed to the wider roles and responsibilities that teachers assume upon graduation. These include conducting co-curricular activities, attending meetings, and being involved in school events. Student teachers are expected to teach entire lessons on their own and are observed first informally, and then formally (with grades awarded).

Teacher education at NIE aims to link theory and practice in several ways. In order to ensure that student teachers develop the metacognition needed to put the program components together into a coherent whole, they are required to maintain a Teaching and Learning electronic portfolio (e-portfolio). The e-portfolio is "an electronic collection of authentic and diverse evidence of a student teacher's learning and achievement over time, on which they have reflected and designed for personal development, as well as for presentation to audiences for specific purposes." It serves to document student teachers' growth and development of their personal teaching philosophies, capacities and competencies over the course of their pre-service preparation.

### Induction

Upon graduating, all Beginning Teachers (BTs) are provided with induction support that is centrally managed by MOE, and tailored to meet their content specialization and the needs of schools. The program helps transition teachers from pre-service teacher education to in-service professional learning. Virtually all new teachers (99 percent) are immersed in formal induction programs.

Figure 3: MOE Teacher Induction Framework



MOE Teacher Induction Framework (AST, n.d.a)

Induction into the teaching profession begins with the Teachers' Investiture Ceremony, which includes a teachers' pledge to uphold the standards, values, and responsibilities expected of teachers, followed by the Beginning Teacher Induction Program, a two-year program funded and administered by the MOE. This includes a three-day beginning teachers' orientation program; in-service courses, covering topics such as classroom management, parent engagement, teacher-student relationships, reflective practice, pedagogies, and assessment literacy; a visit to the MOE's Heritage Center; and a structured school-based mentoring program that includes training for mentors.

The two-year induction process concludes with the Beginning Teachers' Symposium, which serves as a platform to promote teachers' professional identity and teacher leadership among beginning teachers. Once beginning teachers enter into the third year of their professional life, they are considered to be experienced teachers.

Throughout the induction period, beginning teachers are typically given about 80 percent of the teaching workload of an experienced teacher. This reduced workload provides additional time for beginning teachers to plan lessons, engage in induction activities, observe other teachers, and receive mentoring. They are also evaluated during this time. In Singapore, the probationary period for beginning teachers is one year. Once teachers are confirmed, they do not need to be re-certified or licensed, and thus confirmation is analogous to having tenure.

Tan Hwee Pin, the principal of Kranji Secondary School, said the induction process helps new teachers understand not only how to teach, but also the culture of the school.

We welcome our Beginning Teachers (or BTs) to our school as part of our Kranji family. It is important to induct them into our school's culture so that they know the role that they play and the expectations and standards required when they interact with our students. ... BTs not only observe lessons of their subject areas, but also teachers from other subjects; I believe that every subject teacher has different strengths and they employ different pedagogies in different disciplines. By casting the net wider, new teachers will be able to assemble a repertoire of strategies, which they can activate when they become a full-fledged teacher.

# **Mentoring Teachers**

Mentoring is a common feature of schooling in Singapore. Beginning in the induction period, teachers spend a significant amount of non-instructional time, which is built into their schedules, working with mentors. Mentoring is a required duty of teacher leaders (i.e., Senior, Lead, and Master teachers), who are typically given primary responsibility for supporting and mentoring new teachers, support that runs the gamut from technical assistance and modeling, to emotional support, professional development, and resource sharing. TALIS data showed that around 40 percent of lower secondary teachers had an assigned mentor, and a similar percentage served as a mentor to others. (This is compared to a TALIS average of just 14 percent.)

Besides the induction program in place for BTs, the schools they enter typically have in place a systemic framework for school-based mentoring, known as the Structured Mentoring Program (SMP). The SMP is typically overseen by the School Staff Developer and/or school leaders. The aim of SMP is to level-up the standard of induction and mentoring practices, which historically varied across schools, and enable beginning teachers to gain knowledge within a community of practice with the support of a more experienced peer. In leveling up the standard of induction and mentoring practices, SMP has defined mentoring and induction as a school-wide practice that benefits all teachers and encourages growth. Thus, as one teacher stated, "Even the principal, vice principal, see me, they will check with me how I am getting on, give me advice" because the goal of mentoring support is ultimately, "if I teach you right, you'll get better (as a teacher)."

To ensure better training and clearer expectations of mentors, the MOE created a Skillful Teaching and Enhanced Mentoring (STEM) program in 2011. This initiative began with 30 prototype schools and included the training of in-service teachers. In 2015, there were 120 STEM schools. Under STEM, the Mentor Preparation Programme (MPP) was developed with the New Teacher Center, an organization based in Santa Cruz, California. It focused on the professional development of instructional mentors, which intensively prepared them with the mentoring language, tools, and processes to deepen their practice in supporting teachers' learning.

### **Professional Development**

Singapore provides substantial investment in the ongoing development of teaching quality. All teachers are entitled to 100 hours of paid professional development annually. This is considered "office time" and therefore can happen during school hours with resources provided for "relief teachers." In addition, teachers can make use of their nonteaching hours to work with other teachers on lesson preparation, visit each other's classrooms to study teaching, or engage in professional discussions and meetings with teachers from their schools or across schools in learning communities. Teachers are also supported to conduct action research, lesson study or other teacher

inquiry approaches and to continually revise their teaching strategies in response to what they learn.

Most of the formal professional development offerings are led by the NIE. The Academy of Singapore Teachers (AST), launched in 2010, also provides teacher-led professional learning for teachers. AST works with teachers and connects to schools to provide professional opportunities "by teachers for teachers" through networks of teacher leaders who offer a wide range of professional learning courses, activities, learning communities, resources, and expertise. In turn, schools have created time for learning and sharing among teachers, by building into the timetable dedicated periods for teachers to engage in professional learning communities, and for senior teachers to support their peers.

The MOE created additional teacher-led academies in 2011. Together with AST, other academies and language centers were also set up to support subject-specific professional learning. The Physical Education and Sports Teacher Academy (PESTA) and the Singapore Teachers' Academy for the aRts (STAR) both support teacher learning in those subjects, and the English Language Institute of Singapore (ELIS) provides professional development for English Language teachers; the Malay Language Centre of Singapore (MLCS), the Singapore Centre for Chinese Language (SCCL), and the Umar Pulavar Tamil Language Centre (UPTLC) support development for Malay, Chinese, and Tamil Language teachers.

The academies have helped develop teacher leadership in Singapore by enabling more and more teachers to develop and lead professional learning for their peers. Irene Tan, who is a master teacher at AST, described how this teacher leadership is emerging.

When we first started the Academy, we wanted to create a teacher-led culture to raise the professional standard. Because of the fact that we are master teachers, we are expected to lead the chapter. ... Previously, my colleague and I, who is also a master teacher, were leading and planning. Starting this year, 2013, I actually see that the [core team members] are taking the lead. They are the ones who say that, "Irene, besides doing this, can we consider also to share with the beginning teachers, for example, how to conduct a chemistry practical lesson properly?" ... They are the ones who identified the learning area for other teachers and they're planning these things for the teachers. I see that teacher leadership coming up very strongly. Science experiment is not the only area they have identified. They looked at misconceptions. One group will look at misconceptions in chemistry and they would like to use lesson study to try it out. Another group is looking at helping teachers look at item setting for database questions, for example. That is for the chemistry syllabus. They are trying to involve senior teachers beyond the core team.... The identity of the senior teacher [is stronger now]: the lead teachers also seeing themselves as teacher leaders. >>

To support professional development planning, Singapore has developed a framework called the Teacher Growth Model (TGM). The TGM is organized around five learning outcomes: The Ethnical Educator; The Competent Professional; The Collaborative Learner; The Transformational Leader; and The Community Builder. Professional development courses are themed according to each outcome so teachers can select the area that they would like most to be developed and sign up for courses themed under that outcome (e.g., competent professional courses for those who want to hone their subject mastery competency).

Singapore has institutionalized the practice of embedded professional learning within schools. Each school has a school staff developer, an equivalent to a head of department who is responsible for professional learning in the school. Based on school objectives, the school staff developer sets a school learning plan, and works with department heads to determine teacher development needs. The school staff developer also taps on the expertise of the teacher leaders to develop the teachers through mentoring, learning from formal courses, and participation in learning communities,

Time and opportunities are provided in schools for teachers to develop their own knowledge and skills. For example, almost all teachers are involved in research and innovation projects examining their teaching and learning to better meet the needs of students. Teachers in Singapore are expected to become reflective practitioners through research and co-learning. Schools provide structured time for teachers to come together as a group to discuss and implement their projects. To facilitate teachers' development of research competence, support from internal and external educational experts is provided for teachers.

Over the years, teachers' skills in terms of using research to gather data and evidence to make informed decisions have improved. Research findings are also shared at various platforms at the departmental and school level, other local schools as well as local and international conferences. Each year, the school may have different topics and areas as the research focus, topics that are collaboratively identified by the senior management and teachers as a whole. When teachers feel that the structured time is not enough to discuss their projects, they will come together on their own initiative whenever they feel needed, either within the school day or after it. The research projects are not only done at a subject level, but also go beyond specific subjects to involve the collaboration among different departments and disciplines.

It is important to note that while a significant proportion of teachers do research, others are doing smaller/developmental projects that may not involve a full-blown research protocol but are nevertheless used to collect evidence to improve on their teaching and learning. Tan Hwee Pin, the principal of Kranji Secondary School, said these small-scale research projects have helped teachers strengthen their instruction. "I believe that this research process motivates our teachers to be more reflective and critical of their practice and strategies," she said.

Schools also conduct less formal professional development sessions. Teacher leaders in the school conduct workshops to share teaching strategies. They use concrete examples to explain and model the strategies. Teachers attending these workshops discuss and reflect on the usefulness of these strategies in their own classrooms and how they can customize them for their own students and subjects.

School networks provide a further important source of professional learning for teachers. The cluster system serves as a professional learning platform for teacher leaders that can help to build their leadership capacity so that they can, in turn, build the capacity of teachers in their schools.

Teachers are also encouraged to pursue professional learning beyond their school boundaries based on their particular interests and passion. They may, for example, apply for unpaid leave to pursue master's degrees, or attend workshops and conferences outside the school.

# **Appraisal and Career Ladders**

In Singapore, the evaluation process is aimed at helping teachers receive important feedback on their practice from their more senior colleagues, to help them improve their practice and clarify their career options. To appraise and develop teachers, the MOE uses a system known as the Enhanced Performance Management System (EPMS). The EPMS is designed to be holistic in nature, having both formative and summative components, and is customized to the role each teacher plays on the career path she or he has selected. Essentially, EPMS lays out a range of professional competencies as the basis for teacher evaluation, which specifies teachers' performance in three Key Result Areas (KRAs): 1) student outcomes (quality learning of students, character development of students); 2) professional outcomes (professional development of self, professional development of others); and 3) organizational outcomes (contributions to projects/committee work).

Teachers who are exemplary role models can also be nominated for the Outstanding Youth in Education Award (OYEA), the Caring Teacher Award (CTA) and the President's Award for Teachers (PAT), which are designed to recognize exemplary teachers in the profession. MOE also disburses grants in the form of outstanding contribution awards to deserving teachers, which could be at the individual or team level.

In addition to serving as the basis of recognition, the appraisal and development process in Singapore is closely linked to teacher professional development, aimed at helping teachers receive important feedback on their practice. The conversation between teachers and their reporting officers not only covers what and why they have done well, but also the gaps and areas where improvement may be needed. There are also regular conversations between teachers and their mentors who are usually senior and lead teachers in their schools.

Azahar Bin Mohd Noor of Raffles Girls School explained how the appraisal process helps teachers who are struggling in a developmental, non-punitive way:

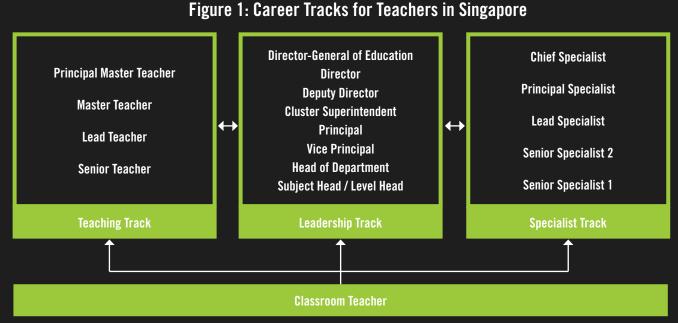
For a struggling teacher, the conversation with the Reporting Officer is very important. The conversation is ongoing, done at mid-year and end-of-year. During the conversations, he/she would have been told the areas that he/she needs to improve. So a struggling teacher would at least have some kind of intervention. The Reporting Officer will set clear expectations for the teacher and see if he/she can meet them in the next half of the year. However, if a teacher is struggling, it could also be due to circumstance of family and other personal matters. These will be acknowledged in the conversations as well.

### **Career pathways**

The evaluation process also serves to help teachers clarify their career options. Teaching career ladders are well-developed in Singapore, offering teachers different routes for advancement and leadership.

There are three main routes for career advancement: the teaching track, the leadership track, and the senior specialist track.

Through the teaching track, teachers can aspire first to be Senior Teachers, then they can move on to become Lead Teachers, and then progress further to the level of Master Teachers and Principal Master Teachers. As they advance up the teaching track, they assume teacher leadership roles within their school or the larger teaching fraternity, serving as instructional mentors, pedagogical leaders and professional



Source: MOE, n.d.h.

learning leaders. Master Teachers move to the respective academies (e.g. ELIS) and are not situated in schools.

The senior specialist track is for those teachers who are steeped in their discipline and choose this route to become experts in areas such as curriculum, planning, educational programs, and educational technology. Their leadership role takes them beyond the school to Ministry headquarters, where they may be engaged with curriculum development and evaluation. The Ministry sponsors the postgraduate studies of these specialists in areas like curriculum, applied psychology in education, and educational research, evaluation and measurement.

The leadership track is a pathway that could take them beyond leadership in schools to leadership at the Ministry level. This means that school leaders and many Ministry personnel bring significant teaching experience and expertise into policy and leadership roles.

The career pathways, the appraisal process, and professional learning are all tightly linked. Through the appraisals, teachers identify the skills they need to develop in order to move to a new level. Rosmiliah Bte Kasmin of Kranji Secondary School said her appraisal helped her specifically to refocus her professional development:

At the beginning of every year, you discussed with the Head your career options for the next 3 to 5 years, taking into consideration the teacher's performance in the previous year. That particular conversation will help you see which direction you would like to go. For example, if you intend to take up the leadership track as the Head of Department, for example, probably the school needs to expose you a bit more to different projects and responsibilities in the school. If you choose the teaching track, there are certain projects and things that you need to complete, or certain skills that you need to have before you can get to be promoted to the Senior Teacher position.

When I was on the leadership track, I was doing more of activity organization for the students at the departmental level and was not very involved in mentoring teachers directly. So with the evaluation, I could narrow down the kind of skills that I need to mentor the teachers and exactly how I can improve on my mentoring of the teachers. Rather than being the authority figure, I have to become more of a teacher mentor. There is a stark difference between a leadership position and a senior teacher position. A senior teacher is one whom teachers find approachable in talking to and comfortable getting advice from.

As leadership is seen as a key enabler for strong schools, much attention and resources are given to identify and groom school leaders. All principals and department heads are fully trained at government expense before they take on their posts. There is also

Singapore has created a system in which each of the components—from recruitment to preparation to teacher learning and career advancement—complement and support one another.

an extensive executive development program for current leaders. Leaders are identified, cultivated, and recruited from a pool of teachers who demonstrate potential to take on school leadership roles. Each year, teachers are evaluated on their leadership skills as well as their teaching skills in a multifaceted, competency-based process, and the MOE keeps tabs on up-and-coming potential leaders, reviewing evaluations and checking in regularly with principals about which faculty members are ready for additional challenges and learning opportunities. When potential principals are identified, they are given opportunities to take on new responsibilities and to engage in various kinds of training to further develop their leadership and management competencies. Officers undergo a rigorous selection process, after which they are appointed to school leadership positions when deemed suitable by the panel of appraisers.

# **Summary and Future Challenges**

Singapore's efforts to build and maintain a strong teaching corps represent a conscious attempt to create a system in which each of the components—from recruitment to preparation to teacher learning and career advancement—complement and support one another. The result is a profession fully staffed with highly capable teachers who deliver effective instruction day after day. That, coupled with a learner-centered curriculum focused on developing 21<sup>st</sup> century competencies, has enabled Singapore to take its place among the highest-achieving education systems in the world. Despite these successes, Singapore faces ongoing reform challenges.

One key issue raised by teachers is that of time. Targeted at continual improvement, there are a number of educational initiatives underway simultaneously, allowing little time for policies to be assessed and evaluated, and amended as may be needed. At the school-level, teachers thus face an increasing number of demands on their time. Hence, a challenge that the system is seeking to address is how to avoid risking reform fatigue and teacher burnout.

Singapore also faces challenges related to educational equity. The high performance of Singaporean students has been shown to be linked to the very high performance of its top achievers. Yet there is still a tail of bottomend performers that require attention, and how the system works on levelling up these bottom-end performers is a concern for policymakers.

Recent policy has focused on increasing the number of supports available to lower-performing students. At the system level, the MOE has introduced a number of levelling up programs, for example, the Learning Support Program (LSP), Learning Support for Mathematics (LSM), and Stronger Support for English Language Literacy and Numeracy in primary to

secondary schools. Each is a form of early intervention, seeking to identify and provide support to students who may require additional assistance in the first few years of schooling. These programs include additional specially-trained teachers who provide targeted small-group instruction. Students with special education needs in mainstream schools also receive additional help from teacher aides and specialists in remediation programs (e.g., dyslexia remediation).

Nonetheless, the evolution of the Singapore education system that has allowed the nation to move from third world to first is remarkable. This change has been the consequence of long term reform, trials with some errors, and a vision that has focused on the long term. What remains pressing is the concern about how to continually sustain this educational success, and to ensure that Singapore's education system allows the nation to stay globally relevant and competitive in the 21<sup>st</sup> century.



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