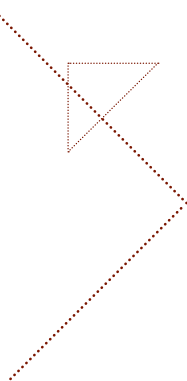


# Focused on Learning: Student and Teacher Time in a Singapore School

Ee Ling Low, A. Lin Goodwin, Jon Snyder





Stanford Center for Opportunity Policy in Education (SCOPE) fosters research, policy, and practice to advance high-quality, equitable education systems in the United States and internationally.

Copyright © 2017 Stanford Center for Opportunity Policy in Education and National Institute of Education, Singapore.

Suggested Citation: Low, E.L., Goodwin, A.L., Snyder, J. (2017). Focused on Learning: Student and Teacher Time in a Singapore School. Stanford, CA: Stanford Center for Opportunity Policy in Education.

**Stanford Center for Opportunity Policy in Education**

**<http://edpolicy.stanford.edu>**

**@scope\_stanford**

**scope**  
Stanford Center for  
Opportunity Policy in Education

## Acknowledgements

This study had many significant contributors:

- Singapore research team led by Professor Ee Ling Low (National Institute of Education, Nanyang Technological University, Singapore) and Professor A. Lin Goodwin (Teachers College, Columbia University) supported by researchers Ms. Jane Lin (National Institute of Education, Nanyang Technological University, Singapore), and Mr. Chenri Hui (National Institute of Education, Nanyang Technological University, Singapore)
- Ms. Tan Hwee Pin, Mrs. Punitha Ramanan, Mdm. Rosmiliah Kasmin, and Ms. Serene Lai Woon Mui of the Kranji Secondary School in Singapore
- The teachers, and students at the Kranji Secondary School in Singapore
- SCOPE researchers Jon Snyder and Dion Burns
- Editorial assistance by Louisa Potter, Thien Lam, and Sonya Keller; layout by Lauren Koch

Many thanks to the Ministry of Education, Singapore for their support of this project.

This study was prepared with support from the Ford Foundation and the National Center on Education and the Economy. The research was conducted independently by the Stanford Center for Opportunity Policy in Education and does not represent the views of the sponsors.

# Contents

Introduction.....	1
Singapore’s Goals for Its Children.....	3
The Singapore Education System.....	6
Secondary Education.....	10
Kranji Secondary School.....	14
How Student Time Is Organized to Meet Goals.....	15
How Teacher Time is Organized to Meet Goals.....	22
Schedule—Overview.....	24
Putting It All Together.....	38
Enabling Conditions.....	43
Standards .....	44
Well Prepared Before They Begin.....	44
Ongoing Learning Opportunities.....	46
Equity.....	51
Educators are Respected and Rewarded.....	52
A Final Word.....	54
References .....	55

## Introduction

**S**ingapore is a densely packed nation with 5.5 million people in an area slightly smaller than the size of New York City. Located at the southern end of the Malaysian peninsula, Singapore is a hub for commerce and trade with a cosmopolitan population where foreign residents constitute approximately 29% of the population. English is the language of instruction in the schools; it is, however, the home 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, its citizens are its most valuable resource. Thus, Singapore places strong importance on education for every individual—for the economy and for the strength and cohesion of the country. Today, about 75% of young people complete a post-secondary technical or college degree with a majority of the remainder pursuing postsecondary options through the well-resourced Institutes of Technical Education.

Singapore has become an international leader in education as indicated by its students' results on international assessments including the Trends in International Mathematics and Science Study (TIMSS), the Program for International Student Assessment (PISA), and the Progress in International Reading Literacy Study (PIRLS). Educators from around the world study the island nation to discover the "Singapore secret" and have begun to adopt its educational practices.

A previous study (Goodwin, Low, & Darling-Hammond, 2017) identified five elements essential to the development of Singapore's quality teaching force that supports a quality education system: (a) a clear vision and belief in the centrality of education; (b) a systemic approach to innovation, reform, and change; (c) coherent investments in a high-quality teaching force; (d) educative and developmental appraisal; and (e) a learning system and a learning profession. These elements are highly interwoven and all must work in tandem to bring about Singapore's educational success.

In this study, we examine how one school within the Singapore system organizes and allocates student and teacher time within the school day, and how that allocation and use of time contributes to the growth and development of students and the growth and development of teaching capacity to support their students. Time is both the most fixed and the most flexible of educational resources. Fixed because there are 24 hours in a day and during that time one must assure food, shelter, rest, human relationships, recreation—one must live. Flexible, however, because how one uses those fixed 24 hours, and in this case how a school organizes the time within a school day, is not static. There may be fixed working hours in a teacher's school day, but how that time is apportioned and to which tasks is not cast in stone. While time is always a scarce resource in schools, what happens within the time available also matters.

In Singapore, Jensen, Sonnemann, Roberts-Hull, and Hunter (2016) note:

Professional learning is central to their (teachers') jobs. It is not an add-on. It is not something done on Friday afternoons or in a few days at the end of the school year. Teacher professional learning is how they improve student learning, it is how they improve schools, and it is how they are evaluated in their jobs. (p. 3)

In addition, as Quintero (2016) notes, in Singapore:

[They do not] assume that teacher effectiveness is static, portable, individual and independent of the context. Conversely teacher effectiveness is believed to grow within the school organization; thus, a primary goal is to build schools and school systems where this growth is continuous, collaborative, and where it responds to the changing and situated needs of students. (p. 3)

In this way, a school becomes more than the sum of its parts. It becomes an organizational culture where multiple roles meld together to craft high-quality teaching that supports the growth and development of each and every child in the school. Darling-Hammond et al. (2017) note that teaching in Singapore "is viewed as a team sport, not an individual act of courage." The use of time is essential to this end.

Research from around the globe establishes the case that how time is organized and used makes a difference in the learning opportunities of students. Jensen et al. (2016) found that high-performing schools organize people's time so they can take advantage of each other's knowledge and skills and create a set of common, coherent practices. The economists Jackson and Brueggman (2009) quantified the student learning gains generated by the collective expertise of teams of teachers. They found that peer learning among small groups of teachers was the most powerful predictor of improved student achievement over time. Goddard, Goddard, and Tschannen-Moran (2007) found that students achieved more in mathematics and reading when they attended schools characterized by higher levels of teacher collaboration for school improvement. Kraft and Papay (2014) found that teachers become more effective over time when they work in collegial environments. Another line of research supports the importance of teacher time and how it is used by documenting that teacher professional development is more likely to be effective in improving teaching practice and student learning when it is collegial, sustained, and ongoing; is connected to the work of teachers in the classroom; and is coherently related to broader school reform efforts (Darling-Hammond & Richardson, 2009; Elmore & Burney, 1997).

Thus, this study focuses on how teachers and students spend their time in school. The report describes how a school in Singapore merges growth and development



goals for children with structures, processes, and norms that support adult capacity to help students meet those goals. Based on the data from a secondary school in Singapore (Kranji Secondary School), this report documents how the use of teacher time in schools supports their learning and how that teacher learning in turn influences student opportunities for growth and development. The main data for this chapter come from interviews with faculty and administrators from Kranji Secondary School (KSS), observations, and a review of documents.

We open with a description of Singapore’s goals for children—goals, it should be noted, that encompass a broad and fully human array of developmental domains, and not solely traditional academics as measured with traditional exams.

Next we provide an overview of Singapore and the educational system there to provide the context for the description of KSS that follows.

Following a description of the school, we describe how the students’ time is organized and allocated to create rich opportunities for student growth and development towards the country’s goals for its children and the country.

We follow with a description of how KSS organizes and distributes the teachers’ time so that they are best able to assist their students’ growth and development as well as to enhance their own learning.

The case concludes with an analysis of the “system” level factors that support the practices seen in the school.

## **Singapore’s Goals for Its Children**

To help students thrive in a fast changing and highly connected world, the Singapore education system aims to provide students with a well-rounded education framed by the development of 21st Century Competencies (21CC). As shown in Figure 1, values form the core of the 21CC framework, signifying that knowledge and skills must be underpinned by values. Values not only “define a person’s character” but also “shape the beliefs, attitudes, and actions of a person” (Ministry of Education [MOE], n.d.-a). The middle ring represents social and emotional competencies. They are the essential skills that enable children to “recognize and manage their emotions, develop care and concern for others, make responsible decisions, establish positive relationships, as well as handle challenging situations effectively” (MOE, n.d.-a). The outer ring stands for the emerging 21st Century Competencies necessary for the globalized world in which people live. Comprehensive elaborations of the three levels of competencies can be found at the MOE website (<https://www.moe.gov.sg/docs/default-source/document/education/21cc/files/annex-21cc-framework.pdf>).

**FIGURE 1: FRAMEWORK FOR 21ST CENTURY COMPETENCIES AND STUDENT OUTCOMES**



Source: MOE, n.d.-a

Surrounding the outer (orange) circle are Singapore’s Desired Outcomes of Education (DOE). The DOE are attributes that “educators aspire for every Singaporean to have by the completion of... formal education” (MOE, n.d.-b). They provide “a common purpose for educators, drive our policies and programmes, and allow us to determine how well our education system is doing” (MOE, n.d.-b). These outcomes include:

- A confident person who has a strong sense of right and wrong, is adaptable and resilient, knows himself (sic), is discerning in judgment, thinks independently and critically, and communicates effectively;
- A self-directed learner who takes responsibility for his own learning, who questions, reflects and perseveres in the pursuit of learning;
- An active contributor who is able to work effectively in teams, exercises initiative, takes calculated risks, is innovative and strives for excellence; and,



- A concerned citizen who is rooted to Singapore, has a strong civic consciousness, is informed, and takes an active role in bettering the lives of others around him. (MOE, n.d.-b)

The Ministry of Education has translated the Desired Outcomes of Education into a set of developmental outcomes that educators aspire to develop in their students at each span of a student’s progression through the education system—primary, secondary, and postsecondary (Table 1). The development of each educational stage builds on earlier ones and at the same time lays the foundation for subsequent ones (MOE, n.d.-b). Each span has eight outcomes.

**Table 1: The Key Stage Outcomes of Education**

At the end of Primary school, pupils should:	At the end of Secondary school, students should:	At the end of Post-Secondary education, students should:
be able to distinguish right from wrong	have moral integrity	have moral courage to stand up for what is right
know their strengths and areas for growth	believe in their abilities and be able to adapt to change	be resilient in the face of adversity
be able to cooperate, share and care for others	be able to work in teams and show empathy for others	be able to collaborate across cultures and be socially responsible
have a lively curiosity about things	be creative and have an inquiring mind	be innovative and enterprising
be able to think for and express themselves confidently	be able to appreciate diverse views and communicate effectively	be able to think critically and communicate persuasively
take pride in their work	take responsibility for their own learning	be purposeful in pursuit of excellence
have healthy habits and an awareness of the arts	enjoy physical activities and appreciate the arts	pursue a healthy lifestyle and have an appreciation for aesthetics
know and love Singapore	believe in Singapore and understand what matters to Singapore	be proud to be Singaporeans and understand Singapore in relation to the world

*Note: See <https://www.moe.gov.sg/education/education-system/desired-outcomes-of-education> for further information.*

Clearly, education in Singapore embraces a holistic approach aimed at building character and life skills that can help students lead successful lives not defined merely by academic performance but equally by strong character and values. Towards this end, the Ministry of Education has been working to reduce the influence exerted by examinations on teaching and curriculum by adopting a wide range of indicators of student achievement and learning outcomes beyond test scores. As shall be described, these goals play out in how students spend their time in school to develop critical thinking and problem solving abilities; collaborative learning, leadership, and research skills; and engage in character and citizenship education. Equally important, these goals play out in how teachers spend their time with students and with other educators in order to support their students' attainment of these goals.

## The Singapore Education System

Public schools everywhere are embedded within larger systems. Thus, to understand what occurs at the school level, one must also understand those larger systems. Due in part to its small size, education administration in Singapore is centralized with the Ministry of Education taking on what in other jurisdictions would be functions of a state, a city, and/or a school district. The national Ministry of Education is responsible for educational services from preschool to university as well as structures for continuing education and continued professional learning during employment. There are five major educational phases in the system: preschool (4–6 years old), primary (7–12 years old), secondary (13–16/17 years old), postsecondary (17–18/19 years old), university (19/20–23 years old for females and 21/22–25 for Singapore male citizens and permanent residents due to the mandatory National Service), and continuing education and training (CET) (MOE, n.d.-c). (For more detailed information on the Singapore education landscape, visit <https://www.moe.gov.sg/education/landscape/>.)

Around 75% of schools in Singapore are government-operated. The next largest category of schools—government-aided—is also regarded as public schooling, and receives around 95% of its funding from government sources. This allows for a tight alignment of policy between schools, the Ministry, and the National Institute of Education (NIE), the country's only teacher education facility for pre-service teachers.

It is perhaps more accurate, however, to define the Singapore system as “centralized decentralization” (Chua, 2015). The system seeks a balance between flexibility in decision-making in schools and the role of central governance in maintaining system quality and coherence. For example, the vision of Thinking Schools (see below) “require[s] that decisions be made at the lowest possible level” so that school-based innovations can be introduced (MOE, 2010). The role of the Ministry of Education is to provide needed support structures and resources (e.g., Heads of Departments

to coordinate school programs) to support local decision-making (MOE, 2010). Schools are given the autonomy to develop their own pedagogical approaches so long as they are aligned with the tenets of Teach Less, Learn More (TLLM; see below). In addition, the MOE reduced curriculum content to create white space for teachers. Teachers can use the freed space and time to customize lessons, develop instructional content and materials, and use a broader range of pedagogical and assessment modes that are more finely tailored to the strengths, interests, and needs of their students (MOE, 2005).

While granting schools and teachers increased autonomy (decentralization), the Singapore government uses centralization to maintain system coherence, quality, and equity. The MOE sets all national education goals and curriculum guidelines (National Center on Education and the Economy [NCEE], n.d.). It is also in charge of hiring teachers prepared by NIE. The country's 366 schools are organized into 30 clusters, each comprising 10–13 schools (MOE, 2015a). Each cluster is administered by a cluster superintendent who is responsible for: facilitating networking, sharing, and collaboration among the member schools within the cluster; developing personnel in their clusters according to identified needs or personnel who demonstrate potential for career development; and ensuring effective and optimal use of financial resources.

The centralization of selected functions at MOE ensures that important educational resources are equitably distributed across schools. MOE is responsible for setting national policies that affect access to education and schools for all children (e.g., curriculum, school admission criteria, funding rates, fees payable). Recruitment of teachers, sponsorship for the common initial teacher training at NIE, and deployment of teachers to schools are also examples of functions that Singapore “centralized” for equity purposes.

### **Innovation and Equity**

A key feature of educational governance in Singapore is a commitment to learning for all students. This approach regards all students as diverse learners with potential in different domains, with the role of government as one of equalizing educational opportunities to allow students to reach that potential (Teh, 2014). The key motivation for MOE to diversify the education landscape is the belief that students have diverse interest and talents, and therefore the potential to achieve in different domains. Various new education pathways and curricular options were introduced and refined over the past decade or so in order to allow children to discover their interests and strengths in the different domains, and to develop and hone their talents in particular areas.

Simultaneously, Singapore's vision is to prepare the country for increasingly rapid changes in the global economy. As noted by then Prime Minister Goh Chok Tong,

“It will be an intensely global future” in which “knowledge and innovation will be absolutely critical” (Goh, 1997).

The “Thinking Schools, Learning Nation” initiative launched in 1997 sought to transform curricula, assessment, and teaching to develop a creative and critical thinking culture within schools by explicitly teaching and assessing these skills with students. It sought, as well, to create an inquiry culture among teachers—who are supported to conduct research on their teaching and to continually revise their teaching strategies in response to what they learn. As Prime Minister Goh Chok Tong noted when announcing the initiative:

[This initiative] will redefine the role of teachers.... Every school must be a model learning organization. Teachers and principals will constantly look out for new ideas and practices, and continuously refresh their own knowledge. Teaching will itself be a learning profession, like any other knowledge-based profession of the future. (Goh, 1997)

The push to create thinking schools affected both curricula and assessment. The number of examinations and assessments was reduced, with national examinations occurring at the end of Grade 6 (Primary School Leaving Examination), Grade 10/11 (O-Levels), Grade 10 (N-Levels, for Normal Academic and Normal Technical students only), and Grade 12 (A-Levels). The examinations were always open-ended, but now include projects and investigations that are designed by the Singapore Examinations and Assessment Board with the help of teachers and are scored by teachers with a moderation process that supports consistency.

In 2005, “Teach Less, Learn More” was released by MOE. At the system level, the policy further reduces the quantity of content in the curriculum and opens up time for inquiry. There is an increased emphasis on problem-based learning and project work in class. School-based assessments can incorporate multiple indicators to assess student progress against the competencies. Students are also encouraged to participate in self-assessment and to play a greater role in their own learning.

### **Supports for Teaching Quality**

Singapore focuses on recruitment, preparation, curriculum and assessment, professional support, and appraisal simultaneously as essential, complementary, and mutually interdependent elements of a system, rather than as individual and isolated mechanistic components. This supports the country’s ability to recruit, prepare, and retain excellent teachers on a sustained and sustaining basis.

Teachers in Singapore enjoy high respect from society. This is due not solely to cultural context but also to policies that highlight the importance of education and

promote the status of teaching as a career. For instance, teaching is well compensated and, not coincidentally, teachers are well prepared. Initial teacher education is fully paid for, and teacher candidates receive a salary while in preparation programs. Beginning teachers are paid a salary similar to beginning accountants and engineers. Not surprisingly, teacher education is highly selective, with just one of three short-listed applicants<sup>1</sup> finally accepted into the National Institute of Education (NIE), the country's provider of teacher education.

Around 85% of Singapore teachers hold undergraduate degrees and the system's long-term goal is to have an all-university graduate teaching force. Teacher education is underpinned by values, skills, and knowledge considered integral to teaching and emphasizes a learner-centered approach to teaching with strong content specialization as well as pedagogical training. Many teachers are now pursuing their master's degrees at NIE. The professional development of teachers in further education focuses on learning and mastery of skills, not the certification.

All teachers receive a yearlong formal induction program in their first position that includes additional coursework and a beginning teachers' symposium as well as structured mentoring from a senior teacher who works in the school they join. Mentoring continues after induction with 40% of all teachers engaged in some mentoring or coaching activity. All beginning teachers have a mentor for 2 years and time is provided for mentors to meet with mentees. This is factored into the teachers' workload. In addition, teams of teachers often:

- participate in small group lesson study and action research projects;
- engage in whole-school structured professional learning programs;
- develop curricular resources for their departments; and
- foster innovative teaching practices.

Each school has an on-site School Staff Developer (SSD) to support these teams. SSDs are equivalent to Heads of Department (HODs); they have a reduced teaching workload and are part of the school management team. The reduced workload gives them time to work with the school leaders on matters related to professional development. Senior and lead teachers learn to support other teachers through teacher-led professional learning at the Academy of Singapore Teachers (AST), along with other subject-specific academies and institutes (e.g., English Language Institute of Singapore, Malay Language Center of Singapore), and NIE. These professional learning programs are typically facilitated by master teachers and principal master teachers.

---

1. Shortlisted applicants are all in the top one-third of each annual cohort entering Primary one (Grade one equivalent).

To be clear, teachers in Singapore, as elsewhere, work hard with long hours. The issue is not that teachers in Singapore work fewer or more hours (Lee & Poon, 2014), but rather that those hours are used differently. Singaporean teachers teach students directly for relatively fewer hours each week than those in other countries (about 17, as compared to the OECD average of 19). As will be explained in the case, this creates space and time for the ongoing site-based, curriculum-embedded, continuous learning the teacher teams undertake.

## Secondary Education

The site of this study is a secondary school, so we focus next on the architecture of secondary schools in Singapore. Singapore's commitment to equity and meritocracy (Chan & Tan, 2008; NCEE, n.d.) is reflected in the diverse pathways for secondary education. Figure 2 below is a graphic representation of the diverse pathways of learning available to students in Singapore. Depending on a student's Primary School Leaving Examination (PSLE) results, he/she will be placed in Express (including the Integrated Program in some schools), Normal (Academic) [N(A)], or Normal (Technical) [N(T)] courses (MOE, 2015b). Although students are divided into different courses, the system provides ample flexibility for students to transfer to, or take courses within, other pathways.

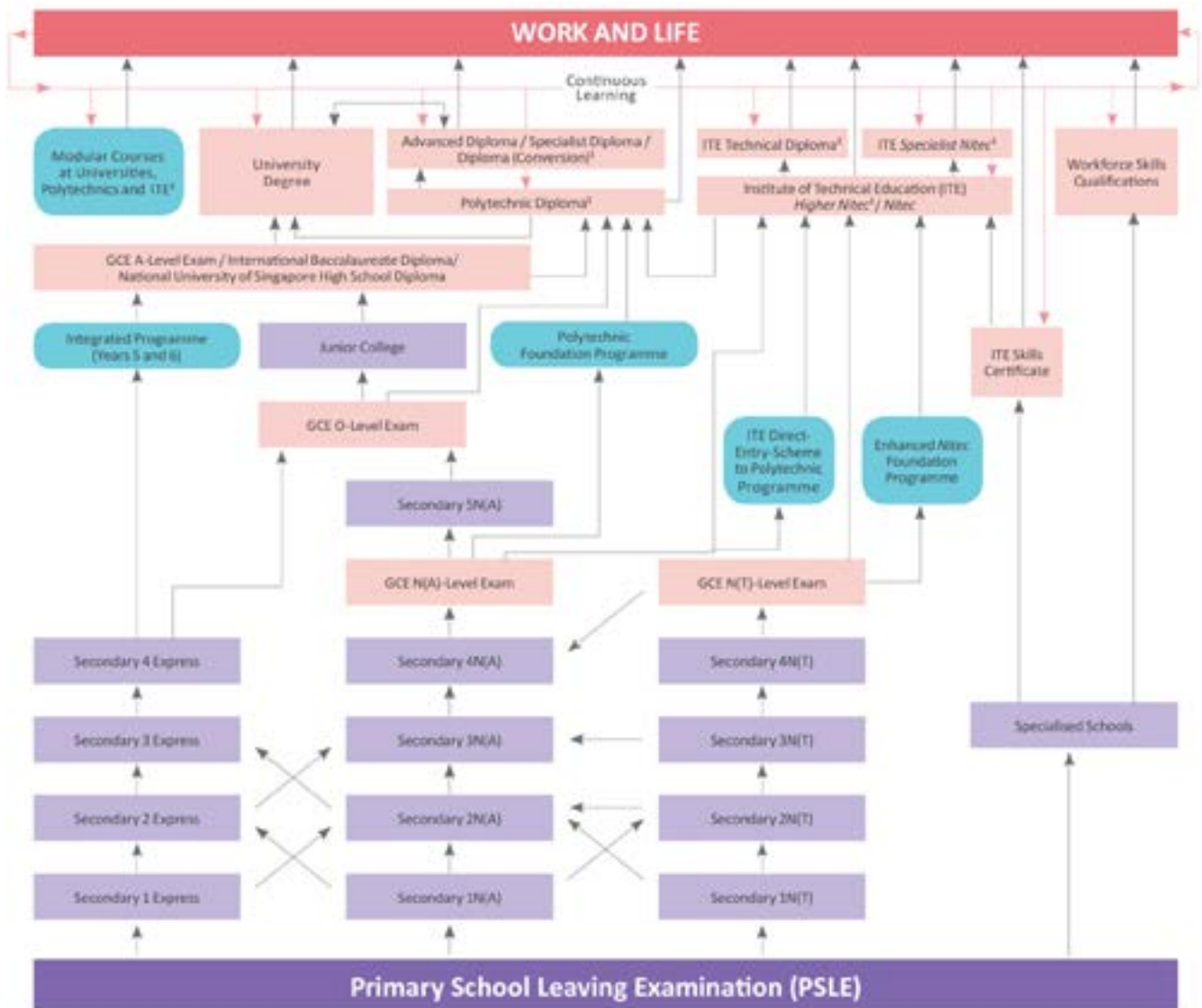
While students may initially be placed in a particular course, there are opportunities for lateral transfers mid-stream. Students in the N(A) and N(T) courses may also take more academically-challenging subjects at the upper secondary level if they perform well in these specific subjects. This flexibility is also being prototyped at the lower secondary level in 12 schools. (MOE, 2016)

Express is a four-year course leading to the Singapore–Cambridge General Certificate of Education (GCE) Ordinary Level (O-Level) examination. (Information in this paragraph and the next are from MOE's Education Statistics Digest 2016, unless otherwise stated.) The subjects students take include English, Mother Tongue Languages, Mathematics, the Sciences, and the Humanities.

Normal Academic (N[A]) is a four-year course leading to the Normal (Academic) Level (N[A]-Level) examination. Students in this track study subjects similar to those in the Express course (MOE, 2015d). Students who do well at the N(A)-Level examination can study for another year to sit for the O-Level examination or may choose to progress to the Higher National ITE Certificate (Higher Nitec) courses at the Institute of Technical Education (ITE) or the Polytechnics directly via (1) the one-year Polytechnic Foundation Programme or (2) the Direct-entry-scheme to Polytechnic Programme.



**FIGURE 2: DIVERSE PATHWAYS OF EDUCATION IN SINGAPORE**



Source: MOE, 2015c

Normal Technical (N[T]) is a four-year course leading to the GCE N(T)-Level exam. Subjects in the track include English, Mother Tongue Languages, Mathematics, and subjects with technical or practical emphasis. The N(T) curriculum is regularly reviewed to strengthen experiential and practice-oriented learning.

In addition to the mainstream pathways in Figure 2, Singapore offers a range of other types of schools and programs to suit the unique needs of every child. Specialized Schools cater to the group of students who have failed the Primary School Leaving Examination (PSLE) at least once (2.4% in 2014 according to

Education Statistics Digest 2015 [MOE, 2015d]) as well as students who prematurely leave secondary school. This group of students “will benefit from a program that is more customized to their learning styles and that addresses their socio-emotional needs” (MOE, 2008). Programs in these schools lead to a combination of academic and vocational qualifications. For example, they have the opportunities to progress to the Institute of Technical Education (ITE) and Polytechnics.

Specialized Independent Schools—including the National University of Singapore High School of Mathematics and Sciences, the School of Science and Technology, School of the Arts, and Singapore Sports School—develop students in areas such as mathematics, the sciences, the arts, and sports at a higher level.

The Integrated Program (IP) is a six-year program for academically strong students who respond to a more independent and less structured learning environment. Students in IP progress to pre-university education without taking the O-Level exam.

## Secondary Education Curriculum

The curriculum for Secondary (Express)<sup>2</sup> education is depicted in Figure 3 below (MOE, n.d.-d). Life skills in the inner circle comprise the non-academic curriculum. They ensure that “students acquire sound values and skills to take them through life as responsible adults and active citizens” (MOE, n.d.-d). Knowledge and skills in the middle circle comprise skills-based subjects such as Design and Technology. They seek to “develop students’ thinking, process and communication skills”, and “enable students to analyze and use information and be able to express their thoughts and ideas clearly and effectively” (MOE, n.d.-d). The content-based subject disciplines (i.e. Languages, Humanities & the Arts, Mathematics & Sciences) in the outermost circle ensure that “students have a good grounding in content across different areas of study” (MOE, n.d.-d). Apart from this general curriculum, there are specific curricula for the Express Course, Normal Academic Course, and Normal Technical Courses. Detailed information can be obtained from the following web-links (Express Course Curriculum: <https://www.moe.gov.sg/education/secondary/express-course-curriculum>; Normal Course Curriculum: <https://www.moe.gov.sg/education/secondary/normal-course-curriculum>).

---

2. For curriculum for other learning tracks in secondary education in Singapore, please refer to <https://www.moe.gov.sg/education/secondary>

**FIGURE 3: CURRICULUM FOR SECONDARY EDUCATION (EXPRESS)**



**LEGEND**

- CCA** Co-Curricular Activities<sup>3</sup>
- CCE** Character and Citizenship Education
- NE** National Education
- PAL** Programme for Active Learning
- PE** Physical Education
- PW** Project Work<sup>4</sup>
- VIA** Values in Action

Source: MOE, n.d.-d

3. In Singapore, CCAs are school-based and teachers are involved. CCAs are considered to be good platforms to develop the 21st Century Competencies.

4. Project work is conducted in curriculum time. However, it is not an examination subject (MOE, n.d.-d).

## Kranji Secondary School

**K**ranji Secondary School (KSS) has about 1200 students from secondary 1 to secondary 4 and secondary 5. In the United States, this would be Grades 7–10. Secondary 5 is a level unique to Normal (Academic) students as they take five years instead of four years to prepare for the GCE O-Level examinations. Most of the students are from middle-income families; small portions of the students require some financial help. In line with the general population, the students come from diverse family backgrounds and home languages. This is one of the major reasons contributing to variation in students' language abilities (Chua, 2015; Teh, 2014). KSS is considered a "neighborhood school," broadly defined as one located within the estates where government-subsidized housing is located. A vast majority of Singapore residents live in such public, subsidized housing estates that are organized to be racially and ethnically integrated. Well-resourced schools are attached to each estate; the government schools are also substantially integrated. Private schools in Singapore are largely international schools attended primarily by international students.

As of January 2016, KSS had a total of 82 teachers, with eight heads of department (HODs), six senior teachers, 53 experienced teachers, and 15 beginning teachers. HODs oversee different subject teams, ranging from English, humanities, science, and math. There is also an HOD for Information and Communication Technology (ICT), Character and Citizenship education (CCE), physical education, and Co-curricular Activity (CCA) respectively. Generally, HODs are the curriculum leaders who set the direction for the department and monitor the curriculum. In addition to their teaching responsibilities, albeit fewer teaching hours as compared to experienced teachers, they look into the development of curriculum content, coach teachers, and monitor students' academic performance. Senior teachers are responsible for the school's mentoring programs for beginning teachers as well as the support of weaker teachers' professional growth and development. Beginning teachers have a different schedule and fewer periods, typically 80% of the workload compared to that of an experienced teacher. They are responsible for either a committee duty or a Co-curricular Activity in the first year. All other staff are assigned both a CCA and a committee.

The country's goal—to provide students with a holistic education that prepares them for life, focusing on both academic and non-academic aspects (MOE, n.d.-e)—permeates every aspect of the school's activities. It is reflected in the broad range of experiences and opportunities that the school offers to develop students' skills and values that they need in their lives. It is also reflected in how teacher professional learning—and therefore use of time—is designed to be responsive to this vision. According to the vice principal of KSS, Mrs. Punitha Ramanan, Singapore's holistic education initiative exerts great influence on schools and teachers:

Definitely it has had a great impact on us. Now we are no longer just teaching our core subjects through content delivery. We are supposed to look into the students' well-being, character guidance, (discipline), and character education.

As a government school, KSS follows the national curriculum and is committed to students' holistic development in five domains—cognitive, moral, physical, social, and aesthetic. A glimpse at its philosophical stance reveals the foundation of the school's education activities:

- Teaching with passion and conviction
- Understanding that every child can learn
- Developing each child holistically
- Preparing students for future challenges

In line with the MOE's Desired Outcomes of Education, the shared vision of the school is "Confident learners with the passion to excel; Active citizens with a heart to serve." Kranji is a highly regarded school. In recent years it has received numerous awards: Best Practice Award (Staff Well-Being), Best Practice Award (Teaching and Learning), Lee Hsien Loong Award for Innovations in Normal Course (for outstanding schools which provide all-round development for Normal course students), and School Distinction Award (recognizes schools with well-integrated and sustainable school processes and practices that have provided useful educational and developmental outcomes for their students). These awards also reflect the school's emphasis on the development of the whole child (both academic and non-academic areas) and the MOE's initiative to expand the goals of education beyond achievement test scores.

## **How Student Time Is Organized to Meet Goals**

At KSS, a typical school day for most students usually officially starts at about 7:30 a.m., though many arrive earlier (see Table 1 for students' bi-weekly time table). Those who arrive early usually sit by the parade square, an open space in the middle of the school where everyone gathers for the morning assembly. Some students start reading the newspapers that the school provides; others socialize, chitchatting with their fellow students. Some may have their breakfast at the canteen located near the parade square. The assembly starts at 7:30 a.m. (on Mondays the assembly begins at 8:00 a.m.). The school wants students to start their day calm. Therefore, students are asked to spend their first 15 minutes of the assembly time reading silently or reflecting quietly.

The first class starts at 8:00 a.m. Lower secondary students have the same number of subjects and their lessons end around 1:30 p.m. Upper secondary students vary in the number of subjects—some take seven subjects, while others take eight. Students in the latter group would end their classes at 3:30 p.m. every day except for Fridays. Lessons for students taking seven subjects end between 1:30 and 2:00 p.m. Some days, students may have extra coaching sessions. These sessions serve as remediation for students who need assistance and as enrichment for other students. On a day that has no Co-curricular Activities, the last lesson ends at 3:30 p.m. for upper secondary students. They leave school at about 4:00 p.m. on the days that they have Instructional Program (IP) coaching. IP coaching is a structured internal coaching program to help weaker students cope with the demands of the various subjects and is a school-based program not mandated by MOE. After the “formal” curriculum time, students typically have Co-curricular periods two to three days a week. Students normally attend their CCAs twice a week. Some CCAs, however, such as band and sports, may require students to attend three times a week. Students and teachers for certain CCAs (e.g., band, choir) may remain on site until as late as 6:00 p.m.

Tables 2a and 2b present the relative percentage of time taken by each activity in a secondary 3 student’s timetable at KSS.<sup>5</sup> It provides another lens on how a student’s time is organized in support of the goals of the school. The school’s time allocation for different subject areas and programs conveys a clear message of the focus on students’ holistic development. Students are exposed to not only academic subjects but also programs that nurture their life skills, values, and characters (e.g., CCAs, CCE).

In a typical week, for instance, the most frequent “academic” subject for students is mathematics (5 sessions/5 hours). Of note, however, is that the time allocated for CCAs (focusing on the whole child) is comparable to the time spent on mathematics. The subjects that take place 3 times a week (3 hours in total) include Mother Tongue, English, Biology, Chemistry, and Physics. The other subjects such as Geography, Social Studies, Physical Education, and Higher Chinese take place once or twice a week. Some of the sessions in the timetable are not mandated by MOE and are put in by the school on their own initiative. Morning assembly (another “whole child” activity) takes place 4 times a week and constitutes 1.5 hours each week. There are altogether two sessions for CCE—one at the class level and the other is school-level assembly (2 hours in total). For CCE, the more common model in most schools is to have class-based CCE lessons instead of assembly. There is one session for self-directed learning (0.5 hour), which is another uncommon feature in other schools.

---

5. It is important to note that the timetable is not representative of timetables in all secondary schools in Singapore. Schools are given some flexibility in terms of scheduling within broad parameters and guidelines provided by MOE to ensure the core curriculum is covered.



**Table 2a: Student time table 2015 Semester 1 at Kranji Secondary School—Even week**

	Monday	Tuesday	Wednesday	Thursday	Friday
7.35 — 7.55		Morning Assembly	Morning Assembly	Morning Assembly	Morning Assembly
7.55 — 8.30	Morning Assembly	Biology	Elementary(E)/ Additional(A) Mathematics	Geography	E/A Mathematics
8.30 — 9.00	Self-directed Learning				
9.00 — 10.00	Mother Tongue	Physics	Chemistry	Mother Tongue	Physics
10.00 — 11.05	E/A Mathematics	Physical Ed	Social Studies	E/A Mathematics	English
11.05 — 11.35	Recess	Recess	Recess	Recess	Recess
11.35 — 12.35	Biology	E/A Mathematics	English	English	Assembly (CCE)
12.35 — 13.05	Geography	CCE	Mother Tongue	Biology	
13.05 — 13.35					Higher Chinese (only for students taking)
13.35 — 14.05	Lunch	Lunch	Lunch		
14.05 — 14.35	Chemistry	Chemistry	Physics		
14.35 — 15.05					
15.05 — 15.35					
15.35 — 16.05	Co-curricular Activities (CCA)		CCA		CCA
16.05 — 16.35					
16.35 — 17.05					
17.05 — 18.00					

Note:

- *Co-curricular Activities* take place 1–3 times a week depending on the CCA in which students are enrolled.
- *Elementary Mathematics* refers to the basics of upper-level mathematics such as algebra and geometry.
- *Additional Mathematics* is higher-level mathematics compared to *Elementary Mathematics*. Usually students have to do well in *Elementary Mathematics* to be given an option to take *Additional Mathematics*.
- *Mother Tongue Languages* include Chinese, Malay, and Tamil.
- *Self-directed Learning* sessions are programs that teachers develop to nurture students' independent and collaborative learning capabilities. They usually make extensive use of ICT to engage students.

**Table 2b: Student time table 2015 Semester 1 at Kranji Secondary School—Odd week**

	Monday	Tuesday	Wednesday	Thursday	Friday
7.35 — 7.55		Morning Assembly	Morning Assembly	Morning Assembly	Morning Assembly
7.55 — 8.30	Morning Assembly	E/A Mathematics	Mother Tongue	E/A Mathematics	English
8.30 — 9.00	Self-directed Learning				
9.00 — 10.00	Physical Ed	English	English	Physical Ed	Chemistry
10.00 — 11.05	Biology	Chemistry	Physics	Biology	E/A Mathematics
11.05 — 11.35	Recess	Recess	Recess	Recess	Recess
11.35 — 12.35	Geography	Biology	Social Studies	Mother Tongue	Assembly (CCE)
12.35 — 13.05	E/A Mathematics	CCE	E/A Mathematics	Physics	
13.05 — 13.35					Higher Chinese (only for students taking)
13.35 — 14.05					
14.05 — 14.35	Physics	Social Studies	Chemistry		
14.35 — 15.05					
15.05 — 15.35					
15.35 — 16.05	Co-curricular Activities (CCA)		Co-curricular Activities		Co-curricular Activities
16.05 — 16.35					
16.35 — 17.05					
17.05 — 18.00					

(See previous page for notes.)

**Table 3. Number of sessions (odd & even week) and average time for different school activities (per week)**

Programs/Subjects	Number of Sessions (odd & even week)	Average Time per Week (hours)
E/A Mathematics	10	5
Co-curricular Activities (amount of time spent varies for different CCAs)	4	5
Mother tongue	5	2.5
English	6	3
Biology	6	3
Chemistry	6	3
Physics	6	3
Morning Assembly	10	2.5
Geography	3	1.5
Physical Education	3	1.5
Social Studies	3	1.5
Higher Chinese (only for students taking)	2	1
CCE	2	1
Assembly (CCE)	2	1
Self-directed Learning	2	0.5

At KSS, Character and Citizenship Education (CCE) lessons are conducted twice weekly, 1 hour each. The CCE teachers use resources and materials developed by a team of teachers. Some are whole-school oriented (e.g., Friday assemblies), others are customized by level. The lessons adopt the Know Good (judge what is right), Love Good (care deeply about what is right), Do Good (do what is right) Framework for the whole-school approach to character education (Kranji Secondary School [KSS], n.d.-a). The school abides by the following four main tenets in character and citizenship education (KSS, n.d.-a):

1. school as a caring and rewarding moral community;
2. teachers as role models and educators;
3. character education as everyday lessons, in and out of the classrooms; and
4. parents and community as partners in character education.

The lessons involve various learning experiences such as explicit teaching, students' active involvement in discussions and sharing, reflection, and life coaching. KSS has also developed special programs to enhance students' internalizing of values. One such program is Values in Action (VIA), which involves service learning trips such as visiting the elderly or volunteering at an overseas orphanage (Koh, 2013). Another program is the Learning for Life Programme (LLP). In her 2016 message to the school, Ms. Tan Hwee Pin, the principal, encouraged all KSS students to develop their leadership qualities and become active citizens through the school's LLP and other CCE programs (Tan, n.d.):

As part of the school's Learning for Life Programme (LLP) in Student Leadership and to develop a leader in every Kranjian, all secondary 3 students will be given the opportunity to attend OBS (Outward Bound Singapore). Secondary 2 students will attend an in-house camp. In addition, Service Learning will feature strongly in the school's Character and Citizenship Education (CCE) curriculum. We are glad that we identified a good number of partners for Service learning and we see ourselves contributing more to the new Limbang community (the neighborhood area) too. We believe this journey will develop a leader in every Kranjian as envisioned in our LLP.

Winston Churchill once said, "A pessimist sees the difficulty in every opportunity; an optimist sees the opportunity in every difficulty." We want all Kranjians to embrace this spirit, which will strengthen resilience and develop active and hardy citizens with a can-do attitude!

In Singapore, assessment of CCE is part of the holistic assessment in schools. The form teacher of each class is usually the closest to the students and the one who knows them best. He/she gathers students' information from other subject teachers and then completes a holistic report card for each student after the end-of-year exam. The report card provides parents with a portrait of their child's holistic development throughout the year that is then discussed at the teacher-parent meeting.

As previously noted, Co-curricular Activities take up a significant portion of students' time in Singapore's schools—at KSS, as much or more than any other single "academic" subject. This emphasis and use of time is understandable given the important role of students' holistic education in Singapore and KSS.

Through CCA, students discover their interests and talents while developing values and competencies that will prepare them for a rapidly changing world. CCA also promotes friendships among students from diverse backgrounds as they learn, play, and grow together. Participation in CCA fosters social integration and deepens students'

sense of belonging, commitment, and sense of responsibility to school, community, and nation. (MOE, n.d.-f)

In line with the national emphasis, every student in KSS must complete their secondary school study with a CCA. The school provides a range of options from which students choose including (a) clubs and societies, (b) physical sports, (c) uniformed groups, and (d) visual and performing arts groups. KSS believes that CCAs help build students' character and mold them into leaders (KSS, n.d.-b). The example below of the National Cadet Corps (NCC) at KSS demonstrates how CCAs achieve their goals of character and leadership development through various local and overseas activities:

NCC aims to instill an adventurous spirit in all cadets. It organizes a wide range of activities for them such as Camp FORGE (secondary 1), Camp STEEL (secondary 2), Specialist and Senior Specialist Courses (secondary 3), water-based activities, trekking, orienteering, archery, amazing race, rock climbing, and high rope elements. There are also overseas training opportunities for selected NCC cadets, such as Outward Bound Brunei, Outward Bound Sabah, expeditions to Mount Ophir, Desert Trekking in India and even visiting large-scale SAF (Singapore Armed Forces) overseas exercises such as Exercise Wallaby in Australia. (KSS, n.d.-c)

Students echo the value of CCAs:

Being in NCC has made me more independent in everything I do. It has also enabled me to forge strong bonds with my fellow cadets through the training, activities, and camps that we took part in. I used to be a shy person but since joining NCC, I have become more confident and started to open up to others. I have also become more sensitive to my surroundings and learnt to be more responsible. In NCC, it is never a one-man show. I learnt to communicate and work well with my team members to achieve greater heights. I am glad I made the right decision to join NCC, as the moments that I spent with my peers in NCC are the ones I cherish the most.  
—Student 1 (KSS, 2015, p. 77)

I joined this CCA with absolutely no foundation in basketball but over the 3 years in Kranji Basketball Team, I've learnt to love and appreciate the sport. Training is rigorous and physically demanding, but it has built resilience in me. I have become mentally stronger as I've learnt to push on and not give up during training despite physical fatigue. Joining Kranji Basketball has also allowed me to meet my wonderful teammates whom I'm really thankful for. The bond

between us gets stronger as we motivate each other along our basketball journey. The laughter, tears, and memories that we share will never be forgotten. Basketball has helped me to grow as a person and taught me true meaning of teamwork, camaraderie, and perseverance.  
—Student 2 (KSS, 2015, p. 74)

At the end of the graduating year, students' CCA attainment is assessed as Excellent/Good/Fair. High assessments in CCA provide bonus points that can be used for admission to higher-level schools.

The holistic education initiative has also greatly changed what happens in “regular academic” classrooms. Teachers integrate 21st Century Competencies (21CC) into daily teaching. Mdm Rosmiliah Bte Kasmin<sup>6</sup> illustrated the changes this has brought about in her classroom:

We have to infuse 21CC. For example, in geography, when I teach them about disasters, we cannot just tell students things like the disasters are here or there, or the plate boundaries are here. Now we will put in elements such as empathy and compassion, telling them how these people are suffering, what it makes you think and feel. So the human side of the whole event comes into place. Even recent events such as the Air Asia event, the class got into a discussion on how you think the family and people would feel. So now the context in the classroom is that you are not just delivering the lesson, the teacher has to be very much aware of what's happening around you.... It's the teachers' job to make them aware of what's happening around them. And I think that's the importance of holistic education.

## How Teacher Time is Organized to Meet Goals

Professional learning is effective only when it becomes a normal part of daily work life in schools.... Separating professional learning from daily teaching routines is counterproductive, and limits the benefits for teachers and students alike. (Quintero, 2016)

In order to understand how teachers' time is organized at KSS, it is necessary to understand the career pathways/ladder in Singapore. There are three established career tracks to accommodate the different aspirations and talents of teachers:

---

6. When this project commenced in 2014, Mdm Rosmiliah Bte Kasmin was a senior teacher. She was covering Lead Teacher in 2015 and confirmed Lead Teacher in December 2015.



(a) the teaching track for teachers who are keen to further develop their pedagogical capability and pursue a career in classroom teaching through progression to Senior Teacher, Lead Teacher, Master Teacher, or Principal Master Teacher; (b) the leadership track for teachers who aspire to management and formal leadership positions in schools or the MOE; and (c) the specialist track for teachers who are inclined towards developing deep knowledge and skills in their subject area for breaking new ground in educational developments (MOE, n.d.-g). In addition, there is flexibility for teachers to move laterally across different career tracks (see <https://www.moe.gov.sg/careers/teach/career-information> for more detailed information).





The time arrangement for teachers in the teaching track, who remain in the classroom, is the focus of our study. A Singapore school may have four types of teachers. First, there are beginning teachers who have graduated from pre-service preparation in NIE and are in their first or second year of teaching (15 at KSS during the year of this study). The second type is experienced teachers who form the majority of the teaching force in a school. Third is senior teachers who are “good, experienced teachers serving as mentors and role models to younger teachers within their schools, sharing with them their teaching expertise and content knowledge” (MOE, 2001). The fourth type is Lead Teachers who “lead senior teachers and partner school leaders to build professional capacity within the school in the areas of subject content, pedagogy, and assessment” (MOE, 2009). In addition, “They play a key role in developing their schools into vibrant Professional Learning Communities, and grow the teaching profession by sharing their subject expertise with other teachers within the cluster” (MOE, 2009). Beyond the school level, there are Master Teachers who operate at the cluster level. They are “experienced, expert teachers whose role will be to help develop teaching excellence through mentoring and demonstrating good teaching practice and model lessons” (MOE, 2001). Principal Master Teachers are chief pedagogical experts for their subjects at the national level. They lead across the education system.

A teacher’s work in Singapore is comprised of a multitude of activities and responsibilities. This section examines teachers’ working hours overall as well as the time they report spending on various tasks during a typical day and a typical week. These descriptions are from Kranji and are meant to provide a general picture of the use of teacher time in Singapore. In Singapore, teachers’ working hours vary from school to school as the Ministry of Education does not prescribe a fixed schedule. The general distribution of teachers’ time, however, is fairly similar.

## Schedule—Overview

Table 4 shows a typical bi-weekly schedule for a beginning teacher. Table 5 shows a typical bi-weekly schedule for an experienced teacher. Table 6 shows a typical bi-weekly schedule for a senior teacher.

### Key to all three tables

-  Direct contact with students or completion of administrative work (does not include lesson planning and assessment)
-  Professional learning (e.g., mentoring, professional development, PLC)
-  Planning and assessing students' work
-  After school hours for school-related work (e.g. preparing resources, marking)
  
- SDT** Staff & Department Time (usually for the dissemination of information)
- MA** Morning Assembly
- RCP** Department Meeting (Reflection cum Planning Time)
- CCA** Co-curricular Activities
- BTM** Beginning Teacher Mentoring Session (on an ad hoc basis)
- PLC** Professional Learning Communities
- L&G** Learn & Grow (fortnightly)
- SMP** Structured Mentoring Program

*Note: Although there is no time-tabled activity after the official school hours (indicated in white), teachers do stay back to do school-related work during those hours, until about 4:30 pm. Some teachers who do not stay back are free to use this time to prepare teaching resources, mark, or do their work at home.*

**Table 4: Beginning teacher timetable 2014 Semester 2 at Kranji Secondary School**

<b>Even Week</b>	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>
7.35 — 7.55	SDT	MA	MA	MA	MA
7.55 — 8.30	MA		Teaching Sec 1		Teaching Sec 1
8.30 — 9.00	RCP (8:15–8:50)				
9.00 — 9:30	Teaching Sec 1				Teaching Sec 1
9.00 — 10.00					
10.00 — 10.35					
10.35 — 11.05			Teaching Sec 1	Teaching Sec 1	Teaching Sec 1
11.05 — 11.35					
11.35 — 12.05	Teaching Sec 1				Assembly CCE
12:05 — 12.35					
12.35 — 13.05		Teaching Sec 1		Teaching Sec 1	
13.05 — 13.35					
13.35 — 14.05					
14.05 — 14.35					
14.35 — 15.05					
15.05 — 15.35			CCA		
15.35 — 16.05					
16.05 — 16.35					
16.35 — 17.05					
<b>Odd Week</b>	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>
7.35 — 7.55	SDT	MA	MA	MA	MA
7.55 — 8.30	MA	Teaching Sec 1		Teaching Sec 1	Teaching Sec 1
8.30 — 9.00	RCP (8:15–8:50)				
9.00 — 9:30			Teaching Sec 1	Teaching Sec 1	
9.00 — 10.00					
10.00 — 10.35					
10.35 — 11.05	Teaching Sec 1	Teaching Sec 1	Teaching Sec 1	Teaching Sec 1	
11.05 — 11.35					
11.35 — 12.05					Assembly CCE
12:05 — 12.35					
12.35 — 13.05		Teaching Sec 1			
13.05 — 13.35					
13.35 — 14.05					
14.05 — 14.35		SMP			
14.35 — 15.05					
15.05 — 15.35			CCA	L&G	
15.35 — 16.05					
16.05 — 16.35					
16.35 — 17.05					

**Table 5: Experienced teacher time table 2014 Semester 2 at Kranji Secondary School**

<b>Even Week</b>	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>
7.35 — 7.55	SDT	MA	MA	MA	MA
7.55 — 8.30	MA				
8.30 — 9.00	RCP (8:15–8:50)				
9.00 — 9:30	Teaching Sec 4	Teaching Sec 3	Teaching Sec 4	Teaching Sec 2	Teaching Sec 3
9.00 — 10.00					
10.00 — 10.35		Teaching Sec 4			
10.35 — 11.05					
11.05 — 11.35					
11.35 — 12.05	Teaching Sec 5		Teaching Sec 2		Assembly CCE
12:05 — 12.35					
12.35 — 13.05	Teaching Sec 3	Teaching Sec 3	Teaching Sec 2	Teaching Sec2	
13.05 — 13.35					
13.35 — 14.05					
14.05 — 14.35		Teaching Sec 5	Teaching Sec 3		
14.35 — 15.05					
15.05 — 15.35			CCA		
15.35 — 16.05					
16.05 — 16.35					
16.35 — 17.05					
<b>Odd Week</b>	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>
7.35 — 7.55	SDT	MA	MA	MA	MA
7.55 — 8.30	MA				Teaching Sec 4
8.30 — 9.00	RCP (8:15–8:50)				
9.00 — 9:30		Teaching Sec 4	Teaching Sec 2		
9.00 — 10.00					
10.00 — 10.35		Teaching Sec 5	Teaching Sec 3	Teaching Sec 4	Teaching Sec 4
10.35 — 11.05					
11.05 — 11.35					
11.35 — 12.05		Teaching Sec 4	Teaching Sec 2		Assembly CCE
12:05 — 12.35					
12.35 — 13.05	Teaching Sec 2	Teaching Sec 3		Teaching Sec 3	
13.05 — 13.35					
13.35 — 14.05					
14.05 — 14.35	Teaching Sec 3	Teaching Sec 2			
14.35 — 15.05					
15.05 — 15.35			CCA	L&G	
15.35 — 16.05					
16.05 — 16.35					
16.35 — 17.05					

**Table 6. Senior teacher time table 2014 Semester 2 at Kranji Secondary School**

<b>Even Week</b>	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>
7.35 — 7.55	SDT	MA	MA	MA	MA
7.55 — 8.30	MA		Teaching Sec 3		Teaching Sec 3
8.30 — 9.00	RCP (8:15–8:50)				
9.00 — 9.30			Teaching Sec 4		
9.00 — 10.00					
10.00 — 10.35			Teaching Sec 3	Teaching Sec 3	Teaching Sec 4
10.35 — 11.05					
11.05 — 11.35					
11.35 — 12.05		Teaching Sec 4	Teaching Sec 4		Assembly CCE
12.05 — 12.35					
12.35 — 13.05		Teaching Sec 3			PLC
13.05 — 13.35					
13.35 — 14.05					
14.05 — 14.35	Teaching Sec 3		Teaching Sec 4	Teaching Sec 4	
14.35 — 15.05					
15.05 — 15.35			CCA		
15.35 — 16.05					
16.05 — 16.35					
16.35 — 17.05					
<b>Odd Week</b>	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>
7.35 — 7.55	SDT	MA	MA	MA	MA
7.55 — 8.30	MA	Teaching Sec 4		Teaching Sec 4	Teaching Sec 4
8.30 — 9.00	RCP (8:15–8:50)				
9.00 — 9.30				Teaching Sec 4	
9.00 — 10.00					
10.00 — 10.35			Teaching Sec 3		Teaching Sec 4
10.35 — 11.05					
11.05 — 11.35					
11.35 — 12.05			Teaching Sec 4		Assembly CCE
12.05 — 12.35					
12.35 — 13.05	Teaching Sec 3	Teaching Sec 3	Teaching Sec 3	Teaching Sec 3	PLC
13.05 — 13.35					
13.35 — 14.05					
14.05 — 14.35		SMP	Teaching Sec 4		
14.35 — 15.05					
15.05 — 15.35			CCA	L&G	
15.35 — 16.05					
16.05 — 16.35					
16.35 — 17.05					

The same information is presented below comparing the use of teacher time by different task categories.

**Table 7: Average time use for different types of teachers at KSS in a week**

Activity	BT (hours)	ET (hours)	ST (hours)
Morning Assembly	2.5	2.5	2.5
Assembly (CCE)	1.0	1.0	1.0
Staff & Development Time	0.5	0.5	0.5
Reflection cum Curriculum Planning	0.5	0.5	0.5
Co-curricular Activities	2.0	2.0	2.0
Learn & Grow	1.0	1.0	1.0
Classroom Teaching	10.0	14.0	12.0
Planning and Assessing Students' Work (including white spaces till 4:35pm)	26.75	24.25	24.75
Structured Mentoring Programme	0.5	N.A.	0.5

*Note: All teachers work the same number of contracted hours. In the week presented above, as a sample week, senior teachers' time does not equal beginning or experienced teacher time because of flexible time to be used at the discretion of the senior teacher.*

These tables show that teachers' weekly work can generally be divided into four categories: (a) classroom teaching, (b) other direct contact with students such as CCAs and morning assembly, (c) professional learning, such as mentoring, and (d) planning, and assessing students' work. There are two major differences between the three schedules. One is the amount of time working directly with students. Beginning teachers have the smallest classroom teaching load (10.0 hours/week); experienced teachers have a classroom teaching load of 14 hours/week, and senior teachers about 12.0 hours/week. Beginning teachers have a smaller classroom teaching load because they are in their induction period and are in the process of gaining professional expertise. Senior teachers have a smaller classroom teaching load than experienced teachers to create time for their roles in organizing and facilitating professional learning/mentoring programs in the school. The second difference, difficult to see in the chart, is that the three categories of teachers often have different roles within the same activity. For example, in Learn and Grow (a professional learning program described below), a senior teacher would be the organizer and facilitator, while experienced and beginning teachers are participants.

Compared to many other countries, teachers in Singapore have more "professional" time and less "direct contact with students" time. It is, of course, difficult to create "professional time" while simultaneously providing a full and complete educational experience for the students. In addition to the career ladder and differentiated

teacher scheduling noted above, KSS deals with this in several ways. While ensuring the meaningful delivery of the national curriculum, one of its strategies is to create time for teacher professional learning after instructional time. As Vice Principal Mrs. Ramanan notes:

Some of these (professional learning) timeslots are after school. For instance, the Learn and Grow session is on Thursday afternoons. We ensure that lessons on Thursdays end by 2 o'clock, so that students are free to go home. Therefore, the teachers can spend this time to grow together.

Another strategy that KSS uses is creating white spaces. To create time for Reflection cum Curriculum Planning (RCP), school starts later on Monday mornings. After morning assembly, students spend their time on Self-directed Learning (SDL) that aims to provide opportunities for students to be independent learners, while the teachers participate in RCP. During this period, the whole school is silent while students are engaged in their SDL activity and teachers in RCP. For instance, at the time of this study, the SDL activity consisted of students independently completing worksheets in English. The activity was not "busy work" as it was a conscious decision on the part of the school based on the English language proficiency of the students in the school, particularly those who come from non-English speaking homes. In addition, students receive feedback from teachers on the worksheets that are geared to multiple levels of language proficiency.

The school schedule and the differentiated use of teacher expertise create opportunities for particular kinds of teacher interactions with students and with other teachers.

### **Interactions with students**

At KSS, teachers interact with students not only during regular classes, but also in other formats. In fact, KSS provides the time, structure, and processes for teachers to interact with students beyond classroom teaching. Co-curricular Activities are clearly considered an integral component of Singapore's and KSS's vision of holistic education. In KSS, all teachers are assigned a CCA, with three to six teachers overseeing any particular CCA. In different CCAs, teachers' roles vary. In CCAs like the environment club, for instance, teachers run the whole program from planning to implementation. In other CCAs, such as the school band or tennis, the school hires coaches and instructors to run the program. In these CCAs, teachers spend their time as mentors and plan the program together with coaches and instructors.

One senior teacher, Rosmiliah, is in charge of the environment club, a CCA where teachers are fully in charge. She describes how CCAs integrate the development of leadership qualities and service learning as well as her role as a facilitator:



My club is a society. We are doing environmental studies, projects, and service learning. So the teachers will sit down with the students and plan for the entire project with them. For example, a project that we are currently doing is celebrating Chinese New Year with elderlies (Jan, 2015). It's not easy to get students to think about projects just like that. You have to probe a bit more, and ask them what is good to do during this period of time. The students said to spread some festive joy. So we decided to create some hampers and get the entire school on board together. So what we are aiming for is to collect about 150 hampers by next month and deliver them to the elderlies' rented flat that we adopted. So that's the kind of things that we see now. I have to handhold them in terms of doing the proposal, coming out with a plan of what exactly they need to do.... It's a lot of behind the scene to get them to think what they want to do, and give them the opportunity to lead. I think that's the whole idea of holistic education, not just coming to school to get an O-Level cert, or an N-Level cert.

While the actual activity involved giving a material gift such as a hamper, the students put a lot of heart and thought in planning the activity. More importantly, their action tapped into their spirit of compassion developing both their hearts and their minds. Their interactions with the senior citizens during the presentation of the hampers also helped the students empathically appreciate the lived experience of the older neighbors in their community.

Another format for enriching teacher–student interactions and part of the whole-school approach to character and citizenship education is the In-conversation with Class Mentors (ICM) program. ICM is a time during morning assembly when the class mentor holds a one-to-one talk (10–15 minutes) with a student in a casual place such as the canteen. The student is chosen either when the teacher deems it necessary to talk to him or her or randomly by their class index number. The topic is not fixed. It could be the student's academics, leadership, or personal matters. The main purpose is to come to know students better and thus become better able to support them across all domains of human growth and development. Teachers meet with every child in their classes in this format.

### **Interaction with parents**

Parents are obviously key stakeholders in a child's education. They also are the fundamental influence on a child's attitudes, beliefs, values, and behavior (MOE, n.d.-h). Singapore acts on the belief that educating a child is a shared journey of parents and educators working in active partnership for the benefit of the child (Heng, 2014). To help schools in parent and community engagement efforts, MOE set up the Partnerships in Education Office in 2011. At present, more than 95%

of Singapore schools have a formal Parent Support Group or Parent-Teacher Association. In addition, the MOE has also set up the PARTNERS Award to recognize schools' efforts in developing strong collaborations with parents and community to support and enhance students' learning experiences.

The MOE promotes a clear philosophy on the relationships between home, school, and community in working towards a common goal of educating the whole child:

The home, school, and community have a shared goal to create an environment that best supports the children's learning and development. Towards this end, parents have a primary influence on their children's total development, while schools provide the foundations through formal education and the community presents authentic opportunities to build the children's sense of identity and responsibility towards the community. The home, school, and community must work together in mutual trust, respect, and understanding.  
(MOE, n.d.-h)

KSS stipulates time for teachers to meet with parents after major exams and before school holidays—the common test (March), the mid-year examination (June), and the end-of-year examination (October, before the school holidays from November to December). The reason for the timing of these three meetings after major assessments is a matter of convenience rather than a reflection of the focus of the conversations. The main focus is on the holistic development of the students. In addition to these regularly scheduled meetings, teachers also contact parents through other measures to keep them updated about their child's development in a timely manner, rather than wait until after the exams. Rosmiliah comments on how she keeps an active partnership with parents:

If I notice that the child has already some problems even at the beginning of the year, I'll just drop a call to the parents and keep them aware of what's happening with the child. Because sometimes parents are too caught up with what's happening at work. They may not be aware of their child's development. Maybe the child is not coping in certain subjects. However, the child may not tell them the truth about what's happening in school, because they are worried. So when I call the parents, I have to put it in a way that we are concerned that the child may not be coping. It is supposed to be a relationship where teachers and parents work together.

What Rosmiliah considers important is her ongoing communication with parents. Such continual communication is time-consuming with classes of 35–40 students. For Rosmiliah, however, students' school life and home life are deeply connected

and such efforts are the only way that parents and teachers can become strategic partners in the growth and development of the children they share.

### **Interactions with other teachers and professional learning**

KSS ensures time for teacher professional learning by formally folding it into the bi-weekly teacher schedule. As Vice Principal Mrs. Ramanan explains:

The school believes heavily in the development of teachers, because it will impact on students' learning. We actually create different platforms in our school to give teachers time to work together to build resources, plan the curriculum, as well as to see to its implementation.

KSS has established three platforms for professional learning within the school day: Learn and Grow, Reflection cum Planning, and Care and Share.

Learn and Grow has a whole-school focus aligned with the school's strategic plan and the goals of the Ministry of Education. During the 2015–16 school year, for example, KSS focused on 21st Century Competencies as well as a "thinking routines" program. Senior teachers plan the time to share strategies for effective lessons using 21st Century Competencies as well as thinking routines such as "see–think–explore."

Running from 2:15–5:00 p.m. every other week, Learn and Grow sessions consist of two main activities. The first is the "skillful teachers" workshop, where senior teachers conduct pedagogical training. They try to make the workshops engaging and practical for teachers. Rosmiliah comments on how the sessions are normally conducted:

We share pedagogies and critical thinking skills. We try to adjust this entire program to be more activity- and discussion-based, rather than preaching to them about the different types of fields. We consolidate the meeting by highlighting what they have carried out in their activities.

The second activity in Learn and Grow is the professional learning community, where teachers are given an hour to sit down with their teams to discuss their collaborative research project for the particular year. For example, in 2014, Rosmiliah's humanities team conducted an action research project on using Information and Communication Technology (ICT). This hour of Learn and Grow workshops provides teachers with the uninterrupted time necessary to plan, discuss, and learn from their projects. In short, this time carved out of the school day is essential for teachers to grow and develop. Rosmiliah explains:

This year [2014] we are embarking on using ICT as a tool for learning—using the Geography Information System (GIS) as a tool

for field work. GIS is an online platform where maps are actually loaded. We are doing this as a form of action research. Two classes are involved in this project. One class is allowed to use the platform, while the other is not. So we are actually looking at whether the use of the GIS platform is effective. The company providing GIS helped us create a particular website, where the students can collect data from the field, and they can then create a particular layer of data for that map. When we come to class, we teach them about relationship patterns and so on.

In addition to Learn and Grow, each teacher has from 16 to 19 hours of individual planning time within the school week for lesson planning and assessing students' work. Part of this time is protected for Reflection cum Curriculum Planning (RCP). The goal of RCP is to instill a culture of reflective teaching and learning. Every Monday morning, teachers of the same subject area spend half an hour (8:00–8:30 a.m.) together and generate conversations on their lessons of the previous week and plan their future lessons. Conversations in RCP focus on any instructional problems teachers face in their classrooms. Teachers share strategies and look into how they can improve their pedagogies, curriculum delivery, and assessment. Some days, the teams break into departmental subgroups such as History, Geography, and Social Science in the Humanities Department or Biology, Chemistry, and Physics in the science department. Young teachers in particular give very positive feedback on the RCP sessions as opportunities to learn from the more senior members in the team.

Table 8 (next page) presents excerpts from the actual notes taken during the English Language (EL) Department's RCP. The discussion included program arrangement (e.g., reasons for changing program periods), reviewing assessment results (e.g., N-Level Examination Results), and pedagogical approaches (e.g., a language-literature approach to teaching English Language).

To help teachers support students' social-emotional well-being and improve character and citizenship education, the school carves out time for Care and Share. Care and Share is a cross-departmental platform on Friday mornings where teachers look into the social and emotional development and competencies of the students. Care and Share sessions are led by the Year Heads (secondary 1 to secondary 4) and teachers attend the four breakout sessions by levels. Each Year Head leads the session and shares resources and lesson plans, together with the focus of the coming week's two Character and Citizenship Education (CCE) lessons. The focus of CCE lessons could range from national education (e.g., the special meaning of Chinese New Year) to school values and examples of inspiring stories illustrating those values. The lesson plans are shared with opportunities for exploration and clarification so that teachers are at ease and clear about the goals, activities, and assessments. This is also a time where teachers can share, learn more, and seek feedback about individual students.

**Table 8: Notes from the EL department's RCP**

Date	Notes
<b>Term 1</b> <b>Week 3</b>	<p><b>Reading Assistant Programme (RAP)</b></p> <ul style="list-style-type: none"> <li>- Reasons for change in RAP periods</li> <li>- Feedback from lower secondary EL teachers</li> <li>- Logistics and administrative matters: collection of orders and cash for headsets</li> <li>- Use of school facilities for RAP</li> </ul> <p><b>Diagnostic Test</b></p> <ul style="list-style-type: none"> <li>- Areas of weakness</li> <li>- At-risk students</li> <li>- IP Coaching</li> <li>- Recording of marks in Results Monitoring</li> </ul> <p>N-Level Examination Results - Sharing of EL results and AAR</p>
<b>Term 1</b> <b>Week 4</b>	<p><b>Situational Writing (SW)</b></p> <ul style="list-style-type: none"> <li>- Standardisation of format for various text forms in SW</li> <li>- Points to note in teaching SW</li> </ul>
<b>Term 2</b> <b>Week 1</b>	<p>Discussion of answers to 2014 N-Level EL Paper 2 Texts 1 and 2 (Syllabus 1190)</p>
<b>Term 3</b> <b>Week 2</b>	<p>Sharing by EL teachers – Lang-lit Approach to Teaching EL</p>

## Mentoring

One of the most important duties of a senior teacher is the mentoring of other teachers. Both the senior teacher and the beginning teachers have a reduced teaching load to create time and space for this work. KSS has two major mentoring programs in the school: (1) induction in the form of the Structured Mentoring Program (SMP) for beginning teachers, and (2) the Energize Program for experienced teachers.

All beginning teachers at KSS are assigned a senior teacher with whom they work for one year. The first session is a 3-hour induction session that provides an overview of the school's programs. It covers the important pillars of KSS, specifically Discipline and Character and Citizenship Education. Following an internal review, KSS revised the schedule to create protected time for the senior teacher to meet with his/her beginning teachers. In the new schedule, beginning and senior teachers meet as a group the first week of every month for discussions and sharing sessions, with individual meetings between the senior teacher and the beginning teacher occurring during the third week of the month. During their second year, beginning teachers receive continuing

support from the school and the Academy of Singapore Teachers (AST). They continue to receive school-site support, both instructional and emotional, as well as attend both compulsory and personally-selected courses at the AST.

Ms. Tan Hwee Pin, the principal of KSS, provides her perspective on the support provided to beginning teachers:

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. Our Structured Mentoring Programme (SMP) is led by a team of seven senior teachers, under the advice of our vice principal. Every BT or trainee will be given an experienced teacher as their mentor. BTs observe not only 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.

As a senior teacher, Rosmiliah explains her overarching goals for her work with beginning teachers:

My advice to beginning teachers or interns who come in is always that for teaching you need a lot of heart. If you are trying to get monetary rewards from it, I think you are in a wrong job. A very important value we need to have is that everything we do in the profession is to nurture the future generation. I would like to see them understand that we are very important people. If we don't do it right, it might lead to serious consequences. For example, I cannot imagine a student leaving the school having wrong values, and then ending up in a powerful position, dictating what others should be doing in life.

The school's vice principal, Mrs. Ramanan, feels the induction program is essential to the teachers and to the school:

Our senior teachers...actually helm the program conduct regular induction programs with our beginning teachers. During these sessions, senior teachers share things ranging from how to conduct a proper character and citizenship education lesson to tips on how to conduct a proper conversation with the students to find out about how they are doing. We have something called "in-conversation with mentor," a structure where teachers spend 10 to 15 minutes every

morning in our school with the students. So our senior teachers will tell the BTs how to conduct a conversation with the student. These are little things, but they actually help the beginning teachers go a long way in terms of adjusting well in our school system.

Mentoring support is also provided to experienced teachers. The Energize Program, for instance, began in 2014. Its aim is to help experienced teachers develop in areas where they may have weaknesses. The program is done in a non-threatening way, as identified teachers work with a senior teacher who guides them along the way. The names of the teachers are surfaced by reporting officers (ROs)<sup>7</sup> at the beginning of each semester, based on their discussions with the teachers on areas where they are in need of improvement. Areas identified have included classroom management, engaging students, assessing students, and content mastery. At times, reporting officers also nominate teachers who could benefit from additional support. This both expands the benefits of the program and helps avoid labeling the program as solely for weak teachers.

The teacher leading the team of senior teachers assigns a suitable senior teacher to work with the teacher based on the match between the needs of the identified teacher and the expertise of the senior teacher. The first step in the process is usually reciprocal observations: The senior teacher observes in the identified teacher's classroom and the identified teacher observes in the senior teacher's classroom. The senior teacher also provides materials for the identified teacher to use as well as suggesting other sources of support. The senior teacher provides feedback to the identified teacher as well as to the reporting officer. Each semester, the Senior Management Committee discusses the progress of the teacher in the program. Identified teachers exit from the program when they show satisfactory progress and improvement.

For instance, in 2014, a Design and Technology (D&T) teacher was identified as in need of improvement in the area of content-specific pedagogy. As a first step, the teacher observed the D&T classes of the senior teacher to see how another more expert teacher facilitated discussion on design problems in one-on-one student-teacher discussions. The teacher was also supported to grow more familiar and adept with the D&T syllabuses and expectations of coursework in the area of journal and presentation boards. He regularly discussed D&T subject matters with fellow D&T teachers and gained experiences with the "on-the-job" learning in guiding students in their coursework as well as in theory lessons. He was encouraged to actively seek clarification on his lesson preparation and teaching and to reflect on his teaching via sharing his experiences and thoughts with other teachers. He was continuously supported in building resources (e.g., lesson plans, student

---

7. Reporting officer refers to the teacher's supervisor, usually the Head of Department or Subject Head.



course materials, and assignments) for the D&T classes he taught as well as equipping himself with the subject-specific pedagogical content knowledge required to support students in design and technology. In 2015, the senior teacher observed him two further times. These observations established that his lesson planning was appropriate and documented obvious improvements in his classroom teaching. The senior teacher reported that the teacher accomplished the goals set and exhibited the capacity and the confidence to guide his students in this subject. It is important to note, however, that he was not left on an island of solitude. He continued to participate and develop with his colleagues in Learn and Grow, Reflection cum Planning, and Care and Share.

In managing the Energize Program, Rosmiliah works closely with the other senior teachers and with other departments in the school:

When I mentor teachers from other departments, I will have to do a bit more administrative work such as liaise with the other senior teachers to get them (beginning teachers) resources because I'm not the expert teacher. I also help schedule meetings for them.

They (teachers) may need help in certain areas such as classroom management. My job is to liaise with the other senior teachers and we divide among ourselves the different areas of focus such as classroom management or pedagogical strategies. We then pair the teachers in need of help with teachers who are very good in that area, and have them observe each other's lessons. They may also observe the lessons of senior teachers. We will sit down with them to discuss how the class is being managed and come up with a plan on exactly what they are going to do to improve their classroom management. Then they will fix a date when I'm free of lessons to sit in their classroom to observe how they are coping and whether they have improved.

Senior Teachers play multiple mentoring roles in the school: They mentor beginning teachers from their own (and sometimes other) departments; they mentor student teachers assigned to complete one of their school experiences at the school by the Ministry of Education; and they manage the Energize Program. Finding time to fulfill these responsibilities is by no means an easy task. To support the multiple roles of the senior teacher, KSS not only gives them a smaller teaching load but also makes sure other teachers have common timeslots so that they can flexibly fit to each other's schedules. As Rosmiliah pointed out, they can also find time for mentoring during lunch breaks or the teachers' break time when the mentee teachers do not have lessons.

Time is obviously of the essence, but so are opportunities for the continuing professional growth of the senior teachers. The Singapore system provides a number of learning opportunities both at the Ministry of Education and within the schools. At the Ministry level, senior teachers are nominated for the Teacher Leaders Program 1 (for senior teachers) run by the Academy of Singapore Teachers. As with lead teachers, they can also be nominated for the Teacher Leaders Program 2 run by AST. In addition to the course, AST has a Lead and Senior Teachers Network. Facilitated by the principal master teachers and the other master teachers, the AST brings together lead teachers and senior teachers of the same subject to share about their respective subject disciplines. Besides opportunities at AST, most professional learning plans are conceptualized in-house. Follow-up actions are taken upon discussion with the vice principal overseeing staff matters as well as with the principal. These measures aim at helping senior teachers and lead teachers grow in their capabilities in facilitating professional learning in schools.

The net result is teachers who continue to grow as professionals throughout their careers, who help other teachers grow, and who enjoy their students, their colleagues, and their role in furthering the future of their students and their country.

## Putting It All Together

Rosmiliah provides a case of how it all can work.

Singapore's "Thinking Schools, Learning Nation" (TLLN) initiative puts a great emphasis on developing students' creative and critical-thinking skills, and deepening their capability to make good decisions to keep Singapore vibrant and successful in the future (Goh, 1997). At the same time, within a national initiative, the government provided schools and teachers significant autonomy to develop pedagogical innovations. In response, KSS developed a Thinking Curriculum to nurture communities of reflective and independent learners (Koh, 2013). Within this curriculum, the school developed protocols called thinking routines to help students learn to explore ideas, think critically, and describe their thinking processes clearly. One process to support these goals is "see-think-explore." In this activity, students write about what they see, that is, their thoughts about a topic or phenomenon, as well as their questions about it and related topics. Thinking routines aim to make "students' thinking visible to themselves and others so that they can improve it" (Koh, 2013). The protocols and activities can be integrated into various subjects and student projects. In addition, the school provides platforms for students to showcase their innovations in thinking routines and project work (Koh, 2013). The school believes that critical thinking is an essential skill that will put the students in good stead in the ever-changing world of the 21st century.

In order to enact the thinking curriculum, teachers use time together to plan and integrate thinking routines into their specific teaching subjects. Rosmiliah, as a senior

teacher, felt it important for her to take the lead in learning how to use the new curriculum and share her results with her colleagues.

The particular geography unit where Rosmiliah first tried out the curricular approach was a secondary 4 express class. This is a pure geography class (as opposed to a blended humanities class that includes multiple disciplines) with primarily mid- to high-achieving students. The culminating lesson of the sequence included a debate that required higher-order cognitive skills such as critical thinking, synthesizing, critiquing, and summarizing.

This could, Rosmiliah keenly felt, turn rapidly into chaos. It can be very challenging for a class of 40 students to have a debate without adequate planning. The lesson would not work without a great deal of preparation. Before the lesson, she had to think through the steps on how to organize the class, for if the students did not settle down, the lesson would fail—and she knew her colleagues were watching. Because of careful and ample preparation, the result of the lesson was gratifying to her and her colleagues.

What they [the students] did before this was we spent about two lessons on the issue of the impact of tourism, where students did some group work and micro-teaching presentations. They did some research on how tourism brings about positive and negative impact to different countries. What I did was rather than using frontal teaching, I got them to go into groups and each group was given different sub-factors. They researched on it for about a lesson and the next lesson they did some presentations. They emailed me their presentation slides after the presentation for my feedback. When I have back-to-back lessons, I have to look at their slides at home. Their classmates gave them areas for improvement (AFIs) pointers. After that, I rounded up by discussing generally what the impacts are. And I told them that we are going to have a debate on the case study of Mauritius, where they can apply their knowledge on the impact of tourism that they have researched. So it took us a about a week or so to prepare for this entire debate.

It required a fair bit of teacher work and student class time to prepare for this debate lesson. Rosmiliah explained her rationale for the pedagogy and her thoughts on the amount of time that she and the students took both at school and at home. Underlying her pedagogical choices is the goal of letting students take ownership of their learning.

I think [the time spent] is fairly okay. I can easily teach the topic within an hour's lesson by doing frontal teaching and telling them the points of the different factors and then directing them to different case studies. But at the end of the day, I always think that it is not a good

way of learning if the students just repetitively memorize the points that you gave. They won't have an experience of their own. Initially, we were quite skeptical about doing the micro-teaching, because I just told them that whatever notes that you prepared are going to be shared with your classmates. The students also had reservations initially. Then after their group discussions, they got spurred on. They realized that at the end of the day, they need to take away something and they need to take ownership of their learning. Their presentation was not too bad, although language use was a bit poor for some groups. That is because they were not used to it. I think today's debate surprised us all. I think they all practiced hard for it.

Rosmiliah elaborated further on how inquiry-based learning benefits the students:

The focus of the pedagogy for geography for this particular syllabus is inquiry-based learning. Frontal teaching will not allow you to do any inquiry-based learning. So there are steps to it—sparking curiosity, the gathering of evidence, and so on. It's a full cycle. To me, it's gaining time in the end because of the experience gained by the students and giving them some ah-hah moments. I think just now towards the second half of the debate, they got excited. And that gave me the satisfaction that it's working. When you look at how they apply their knowledge, and their ability to reason and think on their feet, that's the time that you learn together with them. Frontal teaching may not have achieved this experience for them, because they don't get to talk. I realize that a lot of the time frontal teaching is to use the time to efficiently finish the syllabus and get it moving. However, the approach we adopt is assessment for learning as students are moving on. Through this particular activity (debate), I can assess what kind of thinking and thoughts they have, who are the weaker ones or stronger ones. And I can use this for the following lessons.

Rosmiliah felt the reasons for the success of the debate lesson were simple and straightforward: She had confidence in her students and urged them to take ownership of their own learning; the students became motivated and willing to play an active role in their own learning.

The students spent their weekend to talk about it. Last week I saw some of them stay back at school, having some discussions. And they got me in their discussion as well to see whether they were on the right track such as whether their discussion points and arguments were relevant.

As a result of her successful risk taking, Rosmiliah's colleagues were encouraged to take their own risks towards improvement. Rosmiliah explains:

There's always bouncing of ideas when you come back from class. For example, when I came back from class just now, they were all eager to know whether it went well, even though they are from other departments, because it's their own class. They came to ask me, is it okay? Did they speak well? Did they know what to do? I said, "Yah, yah, it went well." So from there, the history teachers are thinking that since the students enjoyed it, they will also try it for other topics. So I think it's just bouncing our ideas, sharing resources, sharing ideas, that really helps me in my job. At the end of the day, I enjoy working here because of the people who work around me.

Teaching is difficult, time- and labor-consuming, and conceptually intricate work. In addition, there is never enough time to do all that could and should be done. Yet KSS, as one example within Singapore, enlists multiple integrated mechanisms that use teacher time to support both teacher and, more importantly, student learning:

- The arrangement of teachers' time centers on providing learning opportunities for students' holistic development.
- The school creates protected time for teachers' professional learning including platforms such as Learn and Grow, Reflection cum Planning, and Care and Share.
- The school provides protected time for planning and assessing students' work.
- The school has a systemic approach in using the expertise of senior teachers in terms of elevating beginning and experienced colleagues (e.g., career ladder, career pathways).<sup>8</sup>
- Professional learning opportunities in KSS are available at various points of a teacher's career from beginning teachers to experienced teachers and senior teachers. This continuum of support for professional learning is necessary not only to strengthen new teachers' skills but also to continue developing the expertise of all teachers throughout their career.
- The school creates a collaborative learning culture through various formal and informal professional learning activities.

---

8. Recent evidence from Jackson and Bruegmann (2009) suggests that students of teachers who have help from more effective colleagues experience larger achievement gains.

Ensuring that teachers have the capacity to facilitate the growth and development of students is one of the most important tasks of education systems and schools (OECD, 2014). KSS provides teachers with opportunities for developing and extending their capacities in order to achieve or maintain a high standard of professional practice. KSS's stable, cohesive, whole-school approach towards professional learning has created a collaborative and supportive school culture where teachers strive together to be more than the sum of their individual parts. In some ways, the formula for KSS's professional learning is simple: The school regards teachers' continuous learning as a priority in order to improve their teaching, and at the same time provides strong support and structure (e.g., formalized in the time table) to enable all teachers to participate.

Finally, the effort of KSS in growing a collaborative culture through professional learning and other forms may be important in and of itself. Teachers' affective well-being is essential for pedagogical improvement and the quality of teaching (Becker, Goetz, Morger, & Ranellucci, 2014; Saunders, 2013). It is clear, for instance, from Rosmiliah's collaboration with her colleagues that it not only builds interpersonal relationships but also increases her work effectiveness and enjoyment. Although the multiple roles and responsibilities of a senior teacher make her job ever more demanding and stressful, she attributes her ongoing satisfaction, intensifying efforts, and maturing capacities to the supportive and collaborative culture of the school from senior management to individual teachers:

The senior management gives me a lot of support. They don't just throw you an idea. The vice principal works very closely with me and we bounce ideas off each other. My department is also very supportive. I have a young teacher in the department who works with me very closely. She understands the position I have where I'm always moving around here and there.... It's important to make sure you are not imposing on others, although you are holding a position. You must make sure that your relationships with others are good. And people will help you. I'm blessed to be... where resources are being shared.

## Enabling Conditions

**K**ranji Secondary School's organization and scheduling no doubt influence the time teachers have to collaborate and learn with and from each other—thereby influencing the time that teachers have to support the growth and development of their students. The quality of what goes on in that time, however, is influenced and supported by enabling conditions created outside of the individual school and the individual teachers. While this case focuses on time, time is necessary but not sufficient. It is possible, for example, to be a talented individual at golf but difficult to be a good golfer without golf clubs, coaching, practice, practice areas, good courses to play on, incentives to continue, and so on.

Singapore takes an eco-systemic approach to help create the supportive conditions that make it more likely that the time created will be used to support student (and teacher) growth and development. Its system pays attention to both teacher and teaching quality. Teacher quality is the constellation of personal traits, skills, and understandings an individual brings to teaching. Teaching quality refers to strong instruction that enables each and every child to learn. Such instruction meets the demands of the discipline, the goals of instruction, and the needs of students in a particular context. Teaching quality is obviously related to teacher quality. The knowledge, skills, and dispositions of individual teachers are strongly influenced by the context of instruction, including factors external to what the teacher brings. As Darling-Hammond et al. (2017) note:

Key to considerations of context are the curriculum and assessment systems that support teachers' work, the opportunities to learn from and work with colleagues, the fit between teachers' qualifications and what they are asked to teach, and teaching conditions. (p. 18)

Thus, Singapore identifies, recruits, prepares, and supports individual teachers' knowledge, skills, and abilities, as well as develops teaching contexts that enable continued learning and quality practice.

They do so in multiples ways including:

- Vigorous but supple standards for teachers and students;
- High-quality teacher preparation to assure that teachers are well prepared before they begin;
- Ongoing, often school-embedded, learning opportunities for teachers;



- Career pathways and opportunities for teacher leadership;
- A steadfast resolute focus on equity; and
- High regard for teachers and the profession of teaching.

## Standards

As explained in detail earlier, Singapore’s standards for students focus on all the domains of human development—cognitive, physical, social, emotional, and moral. Since the goals for students focus upon the whole child, not surprisingly, standards for teachers begin with nurturing the whole child and specify areas of knowledge and skills to accomplish that goal. The teaching standards continue with winning hearts and minds (including helping to develop others) and conclude with knowing self and others (including integrity, respect, resiliency, and adaptability). These standards are elaborated in the V<sup>3</sup>SK framework (National Institute of Education [NIE], 2009) communicating the professional values and knowledge to be used to support children and their families. The framework is further elaborated by the Graduand Teacher Competencies (NIE, 2009) that outline the professional standards, benchmarks, and goals for graduates of the teacher education programs at the National Institute of Education, the only teacher-preparing institution in Singapore.

In short, as Heng (2012) notes, the standards (and the structures and processes in place to support teachers to meet these standards) are “student-centric and values-driven.” They constitute a shared vision and shared expectations premised on what will support children reaching the country’s goals for them, as individuals and as citizens.

## Well Prepared Before They Begin

Consistent with their entire system, Singapore’s teacher preparation system simultaneously focuses on teachers (e.g., recruiting those with the constellation of knowledge, skills, and dispositions to succeed as teachers) and teaching (e.g., providing those individuals with high-quality instruction and opportunities for learning).

### Recruitment and Selection

As a system, Singapore identifies the attributes they are seeking in their teachers and then is highly selective in bringing the people assessed as most likely to succeed in educating their children into the profession—candidates with the right blend of academic abilities and personal attributes. Acceptance into the program includes strong emphases on the candidates’ academic achievement, communications skills, and motivation for joining the profession, as well as relying on school partners to be key decision makers in the selection process. Selectors are seeking candidates who are passionate about

their subject and their role as a teacher, who have a deep drive for high standards, who possess a thirst for learning, and who are unrelenting in their desire that all children succeed. They seek candidates who are ethical, adaptable, and resilient in the face of challenges and who demonstrate the ability to be collaborative with other professionals.

In addition, as Sclafani and Lim (2008) point out, recruitment begins early:

The Ministry is looking for and finding those young people who have a passion for helping others. Community service is part of every student's education in Singapore, and assignments of working with younger students or peers who need tutors help teachers identify students who should be encouraged to be teachers. (p. 3)

Grounded in the systemic approach that typifies Singaporean education, teacher recruitment is a single, state-wide, highly competitive selection process, jointly managed by the Ministry of Education and National Institute of Education. For instance, students who want to become teachers must go through a four-step process before entering a preparation program. Only one of three shortlisted applicants makes it through the selection interview, which is just the third of the four steps to admission.

Entry into teacher preparation programs can be highly selective for multiple reasons with the "cause and effect" arrow going in both directions in a virtuous cycle for most of them. The profession is respected. Teachers receive comparable salaries to other professions with similar educational requirements. Because of low attrition, the country is not required to invest in the preparation and support of a large number of teachers who will enter and leave the profession quickly. They follow the 'pay me now' versus 'pay me more later' investment approach in individuals who will stay in and advance through the profession for a substantial career. Last, but certainly not least, preparation is subsidized. Entry into the profession is not premised on what the candidate can afford but rather what affords children the best odds of succeeding.

As Sclafani and Lim (2008) point out:

How does Singapore get high-performing students to apply? It is not just future salary, although salaries are competitive with those of engineers in the civil service. It is a combination of factors. The most immediate is that the Ministry pays all tuition, fees, and a monthly stipend to undergraduate teaching candidates. For those who enter teacher preparation at the graduate level, the stipend is equivalent to what they would have made as college graduates in a civil sector job. Since this must be repaid if the candidate fails the program or leaves the profession before the stipulated period... it is also a powerful motivator for serious commitment to the program. (p. 3)

## Preparation

All pre-service preparation in Singapore occurs in the National Institute of Education affiliated with Nanyang Technological University. Approximately two-thirds of prospective teachers complete a one-year postgraduate diploma program following the undergraduate content major, with one-third completing a four-year undergraduate program. All teachers, including those who will teach in elementary schools, must demonstrate deep mastery of at least one content area (plus study of the other subjects they will teach). New school partnership models engage schools more proactively in supporting prospective teachers from selection through entry into the profession.

Based on the country's standards for teaching and teacher education, preparation includes the integration of strong content knowledge and understanding of children and of pedagogy. The curriculum consists of the study of the academic subjects teachers will teach; curriculum, teaching, and assessment; information and communication technology; teaching of language and academic discourse skills; character and citizenship education; service learning; and research. Students in the four-year undergraduate program must obtain a major in an academic discipline, while those in the graduate program must have a degree in a discipline. Curriculum studies aim to equip student teachers with pedagogical methodologies for teaching specific subjects. Primary teachers are prepared to teach three subjects; secondary teachers are prepared to teach two. In addition, the programs are grounded in research and also prepare teachers to use and conduct research. Essential to the programs are well-defined, supported, and mentored clinical experiences embedded in schools and classrooms that support the development of essential professional capacities, knowledge, and skills.

There is a strong values component in teaching and teacher development in Singapore. Coherent with the country's goals for its children, teachers in Singapore are expected to be contributors to the well-being of their students, families, and communities. For instance, programs include required courses in character education and completion of a collaborative community service project. This early emphasis on collaborative learning and group projects in pre-service programs sows the seeds for learning and sharing when pre-service teachers become beginning teachers and progress through their professional careers.

## Ongoing Learning Opportunities

While Singapore provides assurances that beginning teachers are capable of responsible practice from day one of their responsibilities with children and their families, they also provide ongoing opportunities for professional learning with time within the school day for those opportunities. The goal is for teachers to improve each year of their career. Singapore's system in this regard adheres to several important principles:

- Professional learning is developmental. While teaching standards are the same throughout the system, beginning teachers are not expected to be at the same level of sophistication in their practice as veterans, and most veterans are not expected to be at the same level as master teachers. The learning opportunities are differentiated for teachers as they develop over the course of their careers.
- Professional learning is collaborative. The system balances and integrates the strengths, interests, and needs of individual teachers with the goals of individual schools, and of the country. In most instances, teachers learn with and from other teachers with teachers leading the learning opportunities with their colleagues.
- Professional learning is research-oriented. Teachers are expected to keep abreast of the literature as well as to conduct inquiry into their teaching practices with their students, embedded in their schools and subject areas.
- Teacher appraisal is educative and coheres with professional learning tenets. While the teacher appraisal system has an evaluative purpose, it also creates goals for teachers and supports advancement towards meeting those goals. The process is linked to professional learning opportunities so that teachers have help in making progress towards their own, as well as their schools', objectives.

### Support for Beginning Teachers

All new teachers in Singapore engage in a formal induction program, known as the Beginning Teachers' Induction Program (BTIP), funded and managed by the Ministry of Education. The BTIP essentially commences prior to entry into pre-service preparation with the Teachers' Compass Ceremony, when prospective teachers who have been hired by the Ministry are initiated into the moral and ethical mission they have undertaken. BTIP then picks up post-graduation with an orientation program that helps newly minted teachers to understand their roles and the expectations of the profession, and to reflect on their personal beliefs, values, and practices, consistent with the country's goals to value and nurture the whole child.

In their first teaching position, beginning teachers receive in-school mentoring with a reduced teaching load to create time so that the mentoring is an opportunity rather than an obligation. Every beginning teacher is assigned a formal mentor in their subject matter and also receives support from others in the school on an as-needed basis.

While beginning teachers are being mentored within their school, they also attend in-service courses designed specifically for them, covering topics such as classroom

management, parent engagement, teacher-student relationships, reflective practice, and assessment literacy. At the beginning of their third year, the beginning teachers will attend the Beginning Teachers' Symposium and the sessions are facilitated by the teacher leaders.

## Ongoing Support

Singapore offers at least 100 hours of paid professional development time annually to create time and space for teachers:

- to learn with and from each other,
- to engage in ongoing opportunities to develop and share expertise, and
- to become professionals who are responsible with and for each other and all the children and families in Singapore.

Each school is assigned teachers above their basic teacher quota to enable teachers to attend professional development. For example, Kranji plans ahead to enable their senior teachers/lead teachers to attend the 3-month Teacher Leaders Programme. During that period, their classes are assigned to other teachers in the school. The annual schedule also provides two weeks of protected time during the one month June break and three weeks during the end of year school vacation to provide space for the teachers to reflect and recharge.

The Ministry launched the Academy of Singapore Teachers (AST), and a number of subject specific academies and institutes,<sup>9</sup> to provide teacher-led support for teachers. These academies and institutes enhance:

... the professional learning and development of teachers by drawing out pedagogical leadership from the fraternity, infusing expertise into the system; imbuing a sense of pride, identity, and ownership among teachers; strengthening content mastery; building instructional capacity; raising the standards of practice; driving pedagogical innovations and change; advancing continuous learning.  
(Tan & Wong, 2012, p. 452)

Another feature of teacher professional learning in Singapore is the one hour per week reserved for Professional Learning Communities (PLCs) within schools.

---

9. The subject-specific academies and institutes include: English Language Institute of Singapore (ELIS), Malay Language Center of Singapore (MLCS), Physical Education & Sports Teacher Academy (PESTA), Singapore Center for Chinese Language (SCCL), Singapore Teachers' Academy for the aRts (STAR), and Umar Pulavar Tamil Language Centre (UPTLC).

There are also Networked Learning Communities (NLCs) for collaborative teacher learning across schools. Kranji, and each school in Singapore, has a School Staff Developer (SSD) who is responsible for professional learning in the school. To bolster and enrich the practice of embedded professional learning within schools, the AST, along with the Ministry and NIE, provides training to department heads, SSDs, senior, and lead teachers.

Singapore organizes schools into network clusters of 10–13 schools. The cluster system offers a structure and processes for senior teachers and lead teachers to grow their leadership capacity in service of the development of teachers in their schools and beyond. Kranji, like all schools in Singapore, has senior teachers who, as part of a school's Key Personnel team, are responsible for professional learning in the school. Senior teachers and other teacher leaders<sup>10</sup> both give and receive training in how to manage PLCs, action research projects, lesson study, and other aspects of in-school professional learning from (and to) their teaching colleagues in the Academy of Singapore Teachers and from NIE as well as the Ministry.

Of note, teachers are engaged in the development and scoring of student assessments. For instance, teachers assisted the Singapore Examinations and Assessment Board with the design and scoring of the new A-Level assessments. These assessments include performance-based evaluations that involve students in designing and conducting science investigations, engaging in collaborative project work, and completing a cross-disciplinary inquiry, similar to the essay and problem-based examinations they supplement. Teachers also engage in moderation processes to ensure consistency of scoring of these assessments. Involvement in this professional role allows teachers to better understand the standards embedded in the curriculum and to plan more effective instruction. In addition, internal and external education experts provide support to further teachers' understanding of professional research begun during preparation.

### **Career Pathways and Teacher Leadership**

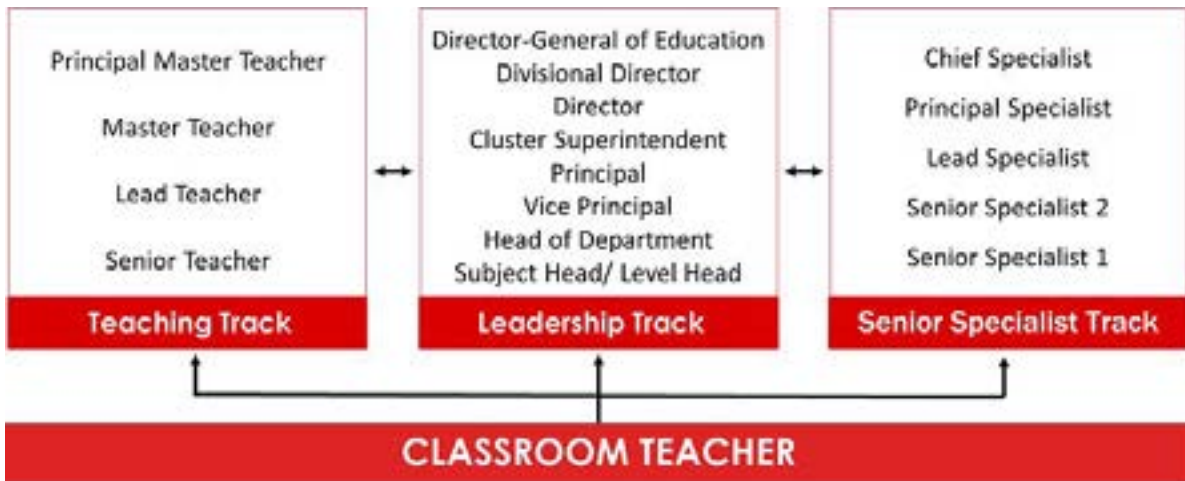
In Singapore, the job description of a teacher is not static and a teacher does not need to leave the classroom completely to assume leadership responsibilities in addition to instructing students. Singapore has created structures and processes that enable teachers to take on new roles without leaving teaching. Teachers can, for example, teach for part of the day, mentor other teachers, lead other teachers in professional development, as well as develop curricula and assessments, and work at levels outside of the school to develop teaching policy.

---

10. In Singapore, teacher leaders refer to those formally appointed as a pedagogical leader in the teaching track including Senior Teachers, Lead Teachers, Master Teachers, and Principal Master Teachers. In the literature, it can refer to more informal leadership or school leadership.

Singapore offers three leadership trajectories that teachers can follow: the Teaching Track, the Leadership Track, and the Senior specialist track (see Figure 4).

**FIGURE 4: CAREER TRACKS FOR TEACHERS IN SINGAPORE**



Source: MOE, n.d.-g

One powerful example of the role of teachers in leading professional learning is the Academy of Singapore Teachers described above. The mantra “For teachers, by teachers” epitomizes the MOE’s “commitment and dedication to teacher professionalism, professional identity, and to the growth and lifelong learning of teachers” (Tan & Wong, 2012).

Singapore’s career pathways allow teachers to take on leadership roles. Following their own strengths, interests, and needs in alignment with the country’s goals for its children, teachers have opportunities to advance in the profession while remaining in the classroom. Teachers know what they have to do to move ahead and know that their new roles and responsibilities are tied to their professional learning. For instance, in addition to the evaluative and educative components of the teacher appraisal system, another key component is to enable schools to identify talented and accomplished educators for development into leadership roles beyond the classroom—educators with the potential to lead adult learning as well as student learning. This is highly purposeful. Singapore does not wait for prospective leaders to apply for their positions. Rather, as with entry into teaching, they proactively recruit prospective teacher leaders and provide them with the learning opportunities to grow into and demonstrate their knowledge, skills, and abilities. Teacher leaders receive the same kind of clinical experiences as beginning teachers so that leaders can be prepared for their jobs from the time they officially commence the role.



In short, Singapore provides multiple pathways into leadership roles for teachers that support individual growth and development of strong educational leaders (Goodwin, Low, & Ng, 2015). This continuum supports student learning as well as professional learning, serving to help create a learning profession that is attractive and rewarding. This in turn enables preparation programs to be even more selective in choosing candidates and encourages teachers to remain in the profession throughout their careers, reducing the costs and disruption caused by rapid turnover.

## Equity

At a systems level, equity aspires to offer all children the supports, both in and outside the school, to thrive. Singapore provides supports for children's food, health, and shelter needs. It provides access to quality early childhood care (Darling-Hammond, et al., 2017; Goodwin, Low, & Darling-Hammond, 2017) and numerous and differentiated learning opportunities within schools. Singapore combines an egalitarian ethos with a meritocratic culture to create an educational system that focuses simultaneously on excellence and equity.

More clearly than any other social institution, the school system expressed the distinctive vision of Singapore's leadership, with its stress on merit, competition, technology, and international standards, and its rejection of special privileges for any group. Singaporeans of all ethnic groups and classes came together in the schools, and the education system affected almost every family in significant and profound ways. Most of the domestic political issues of the country, such as the relations between ethnic groups, the competition for elite status, the plans for the future security of the nation and its people, and the distribution of scarce resources were reflected in the schools and in education policy.... It was in the schools, more than in any other institution, that the abstract values of multiracialism and of Singaporean identity were given concrete form. (LePoer, 1989, p. 116)

Singapore, within its educational system, has done this through several mutually interdependent mechanisms. First, they invest in children's welfare and they work to provide resources equitably, so that all schools first have adequate services, teacher salaries, and working conditions, and then schools with students with high needs receive additional support. Resources and supports that teachers have, as well as teachers themselves as a key resource, are equitably distributed.

Second, Singapore recruits and supports teachers and leaders for high-needs students and schools. They create strong incentives to place well-qualified educators

in schools with the greatest needs. As stated earlier, the Ministry hires teachers when they are accepted into teacher education and pays them a salary while they receive their preparation, which is free. When they complete preparation, new teachers are expected to serve in the school system for at least three years,<sup>11</sup> or repay the cost of their education. Teachers are assigned to schools where they are needed.

Third, Singapore prepares all educators in equity pedagogies and provides curricula (often developed by teachers) that support success for traditionally underserved groups.

Finally, Singapore enacts school improvement strategies that continually upgrade teaching and learning, while targeting resources and supports to students and schools with the greatest needs. The Ministry organizes the sharing of expertise among teachers and administrators within and across schools so that the system as a whole becomes more effective and equitable. For instance, as educators are moving up the career ladder, especially in the leadership track, they are encouraged, and sometimes assigned, to take positions in schools that have greater staffing needs in order to develop and deploy their skills in support of all students.

## **Educators are Respected and Rewarded**

Educators in Singapore are held in high social regard. A survey of Singapore's children (Adecco, 2012) shows that children regard being a teacher as their top career choice, followed by being a doctor or pilot. From another perspective, 70% of teachers believe that the teaching profession is valued by the Singapore society (OECD, 2014).

In addition to the high quality and quantity of the efforts of educators, several other factors support this high social regard. The MOE has several outreach efforts to the public. For example, they sponsor recruitment campaigns to position teaching as a career of choice (MOE, n.d.-i). Singapore has also created prestigious awards to recognize exemplary teachers. Some of the awards include: President Award for Teachers, Outstanding Youth in Education Award, Academy Awards for Professional Development, and Distinguished Fulbright Awards in Teaching. In addition, they have taken deliberate steps to raise public awareness of what teachers do. Rosmiliah notes that the public perception of teaching has changed over time towards increasing respect and recognition:

---

11. The length of teachers' bond with MOE varies across different pre-service programs they attend (i.e., three years of bond for graduates from the postgraduate diploma in education programs, four years of bond for graduates from the degree programs).

I think Singaporeans still look up to teachers even though there are mixed reactions about teachers having a “good time” during the holidays and so on. They [MOE and schools] are more open about sharing teachers’ workloads now. Previously, people were not very aware of what teachers go through. Only the teaching fraternity will know how much time we dedicate to students both at school and at home. But now, people are a bit more aware of teachers’ dedication in developing their child. Parents are also more understanding towards teachers’ situations.

Selectivity into the profession also enhances the respect throughout society. As described earlier, MOE, NIE, and the schools collaborate on a very stringent selection process (Lim, 2014) involving a careful short-listing of candidates from the top one-third of each cohort; an interview to assess candidates’ skills, attitudes and aspirations; and a teaching stint to further assess the suitability of the candidates to be teachers.

Financial rewards also play a role. Singapore’s starting salary for teachers is roughly equivalent to the starting salary of other university-educated workers, equivalent to that of lawyers, engineers, and accountants. Candidates who are mid-career professionals receive additional salary increments in recognition of their previous working experience. Salary growth over the career remains competitive with generous annual increments that are based on performance and advancement on the three-pronged career ladder.

## A Final Word

**T**his case documented how one school in Singapore allocates teacher and student time within the school day. It then explored the systemic factors that enable the time to be used to support the growth and development of students and the adults who work with them daily. Time is probably the most precious commodity in any school and undoubtedly there is not a teacher in the world who would argue that she or he has enough time to accomplish all that needs to be done in a school day or year. Singapore teachers are no different; in conversations with them, they too expressed how keenly they feel the pressure of insufficient time and the challenge of managing all their professional and instructional responsibilities within those constraints. Lack of time is the universal teacher story. So, to be clear, this is not a story about enough time. Rather, it is an illustration of the ways in which time, regardless of perceptions of adequacy and within given realities of availability, can be employed in the service of positive academic and social outcomes. The key is decision-making around time allocation, guided by a sharp focus on what should be—but is not always—paramount in schools: learning, on the part of both students and teachers. This better ensures that time is used optimally, distributed across a range of activities designed to support teacher and student development, and differentiated in ways that can sustain a diversity of learners (adult/child, teacher/student, novice/expert, etc.) as well as multiple short- and long-term goals. The most profound take-away of this case study may be that when teachers are perceived as professionals, and therefore afforded the time to develop and grow in ways that align with the goals and aspirations of and for students, schools can become places of deep learning for everyone.

## References

- Adecco. (2012). Survey of children in Singapore reveals that becoming a teacher is the career of choice [Press release]. Retrieved from [http://sg.adecco-asia.com/Adecco/RSS/newspress\\_pressreleases/20120110\\_Press\\_Release\\_-\\_Adecco\\_Singapore\\_-\\_Latest\\_Career\\_Findings\\_From\\_The\\_Adecco\\_Singapore\\_Childrens\\_Survey\\_\(10th\\_January\\_2012\).pdf](http://sg.adecco-asia.com/Adecco/RSS/newspress_pressreleases/20120110_Press_Release_-_Adecco_Singapore_-_Latest_Career_Findings_From_The_Adecco_Singapore_Childrens_Survey_(10th_January_2012).pdf)
- Becker, E. S., Goetz, T., Morger, V., & Ranellucci, J. (2014). The importance of teachers' emotions and instructional behavior for their students' emotions—An experience sampling analysis. *Teaching and Teacher Education*, 43, 15–26.
- Chan, D., & Tan, J. (2008). Privatization and the rise of direct subsidy scheme schools and independent schools in Hong Kong and Singapore. *International Journal of Educational Management*, 22(6), 464–487.
- Chua, S. K. C. (2015). Singlish strikes back in Singapore. In R. Tupas (Ed.), *Unequal Englishes: The politics of Englishes today* (pp. 185–202). London, England: Palgrave Macmillan.
- Darling-Hammond, L., Burns, D., Campbell, C., Goodwin, A. L., Hammerness, K., Low, E. L., ... Zeichner, K. (2017). *Empowered educators: How leading nations design systems for teaching quality*. San Francisco, CA: Jossey-Bass.
- Darling-Hammond, L., & Richardson, N. (2009). Research review/teacher learning: What matters. *Educational Leadership*, 66(5), 46–53.
- Elmore, R. F., & Burney, D. (1997). Investing in teacher learning: Staff development and instructional improvement in Community School District #2, New York City. New York, NY: National Commission on Teaching and America's Future; Philadelphia, PA: Consortium for Policy Research in Education. Retrieved from <http://eric.ed.gov/?id=ED416203>
- Goddard, Y. L., Goddard, R. D., & Tschannen-Moran, M. (2007). A theoretical and empirical investigation of teacher collaboration for school improvement and student achievement in public elementary schools. *Teachers College Record*, 109(4), 877–896.
- Goh, C. T. (1997, June 2). Shaping our future: Thinking schools, learning nation—Speech by Prime Minister Goh Chok Tong at the opening of the 7th International Conference on Thinking on Monday, 2 June 1997, at 9.00 am at the Suntec City Convention Centre Ballroom. Retrieved from <http://www.moe.gov.sg/media/speeches/1997/020697.htm>
- Goodwin, A. L., Low, E. L., & Darling-Hammond, L. (2017). *Empowered educators in Singapore: How high-performing systems shape teaching quality*. San Francisco, CA: Jossey-Bass.
- Goodwin, A. L., Low, E. L., & Ng, P. T. (2015). Developing teacher leadership in Singapore: Multiple pathways for differentiated journeys. *New Educator*, 11(2), 107–120.
- Heng, S. K. (2012, September 12). Keynote address by Mr. Heng Swee Keat, Minister for Education at the Ministry of Education work plan seminar on Wednesday, 12 September 2012 at 9.20 am at Ngee Ann Polytechnic Convention Centre. Retrieved from <http://www.moe.gov.sg/news/speeches/keynote-address-by-mr-heng-swee-keat--minister-for-education--at-the-ministry-of-education-work-plan-seminar--on-wednesday--12-september-2012-at-920-am-at-nee-ann-polytechnic-convention-centre>

- Heng, S. K. (2014, April 12). Speech by Mr. Heng Swee Keat, Minister for Education, at the MOE ExCEL Parent Support Group Conference 2014, at Suntec Convention Centre on 12 April 2014. Retrieved from <http://www.moe.gov.sg/news/speeches/speech-by-mr-heng-swee-keat--minister-for-education--at-the-moe-excel-parent-support-group-conference-2014--at-suntec-convention-centre-on-12-april-2014>
- Jackson, C. K., & Bruegmann, E. (2009). Teaching students and teaching each other: The importance of peer learning for teachers (NBER Working Paper No. 15202). Cambridge, MA: National Bureau of Economic Research. Retrieved from <http://www.nber.org/papers/w15202>
- Jensen, B., Sonnemann, J., Roberts-Hull, K., & Hunter, A. (2016). Beyond PD: Teacher professional learning in high-performing systems. Washington, DC: National Center on Education and the Economy.
- Koh, Y. H. (2013). Nurturing communities of reflective and independent learners through thinking curriculum. *Kranji in Touch Newsletter*, 2, 1. Retrieved from <http://www.kranjisec.moe.edu.sg/qql/slot/u493/About%20Us/Our%20Newsletters/2013/2013%20-%20Issue%202,%20October.pdf>
- Kraft, M. A., & Papay, J. P. (2014). Can professional environments in schools promote teacher development? Explaining heterogeneity in returns to teaching experience. *Educational Evaluation and Policy Analysis*, 36(4), 476–500.
- Kranji Secondary School. (2015). *Kranji Secondary School Annual 2014*. Retrieved from [https://issuu.com/myothu/docs/kranji\\_secondary\\_school\\_annual\\_2015](https://issuu.com/myothu/docs/kranji_secondary_school_annual_2015)
- Kranji Secondary School. (n.d.-a). Character education. Retrieved November 18, 2015, from <http://www.kranjisec.moe.edu.sg/holistic-education/student-development/character-education>
- Kranji Secondary School. (n.d.-b). *Kranji Secondary School [Brochure]*. Retrieved November 18, 2015, from <http://www.kranjisec.moe.edu.sg/qql/slot/u493/Announcement/Kranji%20Brochure.pdf>
- Kranji Secondary School. (n.d.-c). NCC. Retrieved April 12, 2017 from <http://kranjisec.moe.edu.sg/holistic-education/ccas/uniformed-groups/ncc>
- Lee, Y. J., & Poon, C. L. (2014). The professional work of teachers in Singapore: Findings from a work-shadowing study. *Asia Pacific Educational Review*, 15, 525–535.
- LePoer, B. L. (1989). *Singapore: A country study*. Washington, DC: Library of Congress, Federal Research Division.
- Lim, K. M. (2014, October). *Teacher education & teaching profession in Singapore*. Paper presented at the International Conference on the Teaching Profession in ASEAN, Bangkok, Thailand. Retrieved from [http://www.researchgate.net/publication/266477034\\_Teacher\\_Education\\_Teaching\\_Profession\\_in\\_Singapore](http://www.researchgate.net/publication/266477034_Teacher_Education_Teaching_Profession_in_Singapore)
- Ministry of Education. (2001, September 26). More career advancement opportunities for teachers [Press release]. Retrieved from <https://www.moe.gov.sg/media/press/2001/pr26092001.htm>
- Ministry of Education. (2005, September 22). Greater support for teachers and school leaders [Press release]. Retrieved from <http://www.moe.gov.sg/media/press/2005/pr20050922b.htm>
- Ministry of Education. (2008, March 18). Assumption Pathway School to start in 2009 [Press release]. Retrieved from <http://www.nas.gov.sg/archivesonline/speeches/record-details/7f91079c-115d-11e3-83d5-0050568939ad>

- Ministry of Education. (2009, September 17). Teachers—The heart of quality education [Press release]. Retrieved from [http://www.nas.gov.sg/archivesonline/data/pdfdoc/20090924006/moe\\_workplan\\_seminar\\_09.pdf](http://www.nas.gov.sg/archivesonline/data/pdfdoc/20090924006/moe_workplan_seminar_09.pdf)
- Ministry of Education. (2010, July). Building a national education system for the 21st century: The Singapore experience. Building Blocks for Education: Whole System Reform, Toronto. Retrieved from [https://www.edu.gov.on.ca/bb4e/Singapore\\_CaseStudy2010.pdf](https://www.edu.gov.on.ca/bb4e/Singapore_CaseStudy2010.pdf)
- Ministry of Education. (2015a). School clusters year 2015. Retrieved April 6, 2017, from [http://sis.moe.gov.sg/medias/pdfs/school\\_clusters\\_2015.pdf](http://sis.moe.gov.sg/medias/pdfs/school_clusters_2015.pdf)
- Ministry of Education. (2015b, March). Bringing out the best in every child: Education in Singapore [Corporate Brochure]. Retrieved from <http://www.moe.gov.sg/docs/default-source/document/about/files/moe-corporate-brochure.pdf>
- Ministry of Education. (2015c, October). Secondary school education: Shaping the next phase of your child's learning journey [Corporate Brochure]. Retrieved from <https://www.moe.gov.sg/docs/default-source/document/education/secondary/files/secondary-school-education-booklet.pdf>
- Ministry of Education. (2015d). Education statistics digest 2015. Retrieved from: <http://www.moe.gov.sg/docs/default-source/document/publications/education-statistics-digest/esd-2015.pdf>
- Ministry of Education. (2016). Education statistics digest 2016. Retrieved from: <https://www.moe.gov.sg/docs/default-source/document/publications/education-statistics-digest/esd-2016.pdf>
- Ministry of Education. (n.d.-a). 21st century competencies. Retrieved December 17, 2015, from <https://www.moe.gov.sg/education/education-system/21st-century-competencies>
- Ministry of Education. (n.d.-b). Desired outcomes of education. Retrieved December 17, 2015, from <http://www.moe.gov.sg/education/education-system/desired-outcomes-of-education>
- Ministry of Education. (n.d.-c). The Singapore education journey. Retrieved April 10, 2017, from <https://moe.gov.sg/education/landscape>
- Ministry of Education. (n.d.-d). Express course curriculum. Retrieved January 13, 2016, from <http://www.moe.gov.sg/education/secondary/express-course-curriculum>
- Ministry of Education. (n.d.-e). Nurturing students. Retrieved November 17, 2015, from <http://www.moe.gov.sg/education/nurturing-students>
- Ministry of Education. (n.d.-f). Co-curricular activities (CCAs). Retrieved November 18, 2015, from <https://www.moe.gov.sg/education/programmes/co-curricular-activities>
- Ministry of Education. (n.d.-g). Career information: Enhancing your strengths—Career tracks. Retrieved April 6, 2015, from <http://www.moe.gov.sg/careers/teach/career-information>
- Ministry of Education. (n.d.-h). Parents in education. Retrieved November 17, 2015, from <http://parents-in-education.moe.gov.sg>
- Ministry of Education. (n.d.-i). HR solutions & capabilities division. Retrieved January 5, 2016, from <https://www.moe.gov.sg/about/org-structure/hr-group/hscd>
- National Center on Education and The Economy. (n.d.). Singapore: System and school organization. Retrieved January 19, 2016, from <http://www.ncee.org/programs-affiliates/center-on-international-education-benchmarking/top-performing-countries/singapore-overview/singapore-system-and-school-organization>



- National Institute of Education. (2009). TE21: A teacher education model for the 21<sup>st</sup> Century. Singapore: Author.
- OECD. (2014). TALIS 2013 results: An international perspective on teaching and learning. Paris, France: Author. doi:10.1787/9789264196261-en
- Quintero, E. (2016, February 23). Beyond teacher quality [Blog post]. Retrieved from <http://www.shankerinstitute.org/blog/beyond-teacher-quality>
- Saunders, R. (2013). The role of teacher emotions in change: Experiences, patterns, and implications for professional development. *Journal of Educational Change*, 14(3), 303–333.
- Sclafani, S., & Lim, E. (2008). Rethinking human capital: Singapore as a model for teacher development. Washington, DC: Aspen Institute.
- Tan, H. P. (n.d.). Principal message. Retrieved February 2, 2016, from <http://www.kranjisec.moe.edu.sg/about-us/principal-message>
- Tan, K. S., & Wong, Y. F. (2012). Developing quality teachers for the Singapore School System: The impact of the National Institute of Education and the tripartite relationship with the Ministry of Education and Schools. In I. Žogla & L. Rutka (Eds.), *Teachers' life-cycle from initial teacher education to experienced professional* (pp. 452–453). Brussels, Belgium: Association for Teacher Education in Europe.
- Teh, L. W. (2014). Singapore's performance in PISA: Leveling up the long tail. In S. K. Lee, W. O. Lee, & E. L. Low (Eds.), *Educational policy innovations: Leveling up and sustaining educational achievement* (pp. 71–83). Singapore: Springer.



**Stanford Center for Opportunity Policy in Education**

**<http://edpolicy.stanford.edu>**

**@scope\_stanford**

**scope**  
Stanford Center for  
Opportunity Policy in Education