Singapore

Ministry of Education

Introduction

Overview of Education System

A small nation with few natural resources other than its people, Singapore has always placed a high value on education. The mission of Singapore's Ministry of Education (MOE) is to mold the future of the nation by nurturing its people. Nearly all Singaporean students attend publicly funded schools. Public education in Singapore aims to help children develop passion and capabilities for learning throughout life so that they may realize their potential and use their strengths gainfully for the good of the self, family, society, and country.[1]

The Singaporean education system from the 1960s to the 1980s was largely efficiency-driven and more centrally controlled. The main goal was to rapidly raise the basic literacy and numeracy rates for a young developing nation. Launched in 1997, MOE's vision of Thinking Schools, Learning Nation represented an important inflection point in the transformation of the Singaporean education system into its current form. This fundamental shift was characterized by flexibility, diversity, and greater school autonomy.[2] Due to its small size[a] and by design, the Singaporean education system has a flat structure of governance, with no intermediary levels of government between MOE Headquarters (MOE HQ) and schools. The key design objective is to create a close nexus between policy and practice that is achieved through a purposeful balance between the centralization and decentralization of different elements of the education and school system.

MOE HQ is responsible for selected functions within the education system to ensure that important education resources are distributed equitably across schools. More specifically, MOE HQ is responsible for setting national policies that affect access to education and schools for all children (e.g., curriculum, school admission criteria, funding rates, and fees payable). For example, the adoption of a national curriculum ensures that children in all schools have access to the same core set of important knowledge and skills. Similarly, MOE HQ is responsible for recruiting public school teachers, paying for their initial teacher training at the National Institute of Education (NIE), and deploying them to schools. This structure ensures that the same high standards are applied consistently in the recruitment of teachers and that there is equitable deployment of teachers to all schools.

[a] There were 346 schools across all grade levels in the Singaporean education system in 2021.

However, MOE HQ devolves significant autonomy and responsibility to individual schools in administration and professional matters (e.g., pedagogical approaches for students with different learning needs). Schools are given autonomy within broad parameters and are highly encouraged to customize the implementation of national curriculum policies and programs set and developed by MOE HQ to meet the learning needs of their students. Similarly, schools decide the local job assignments of teachers (e.g., deployment to grade level and co-curricular activities).

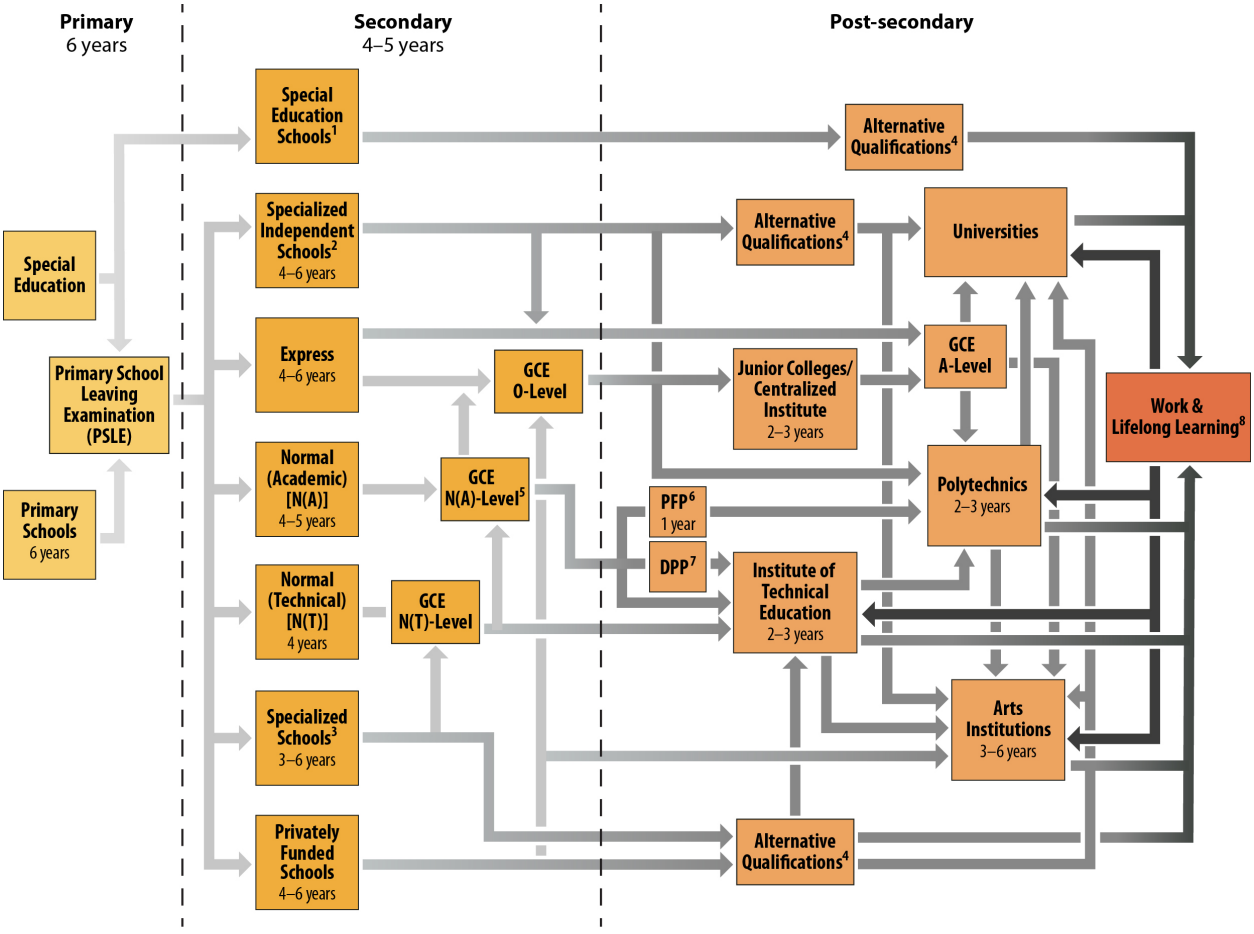
The School Excellence Model, centrally developed by MOE HQ in consultation with schools and other key stakeholders, is a self-evaluation framework that all schools use to guide continual improvement in areas such as teaching and learning, student and staff well-being, and school leadership. The school self-evaluation is supported further by a process of external validation that is carried out approximately once every six years by a team of experienced principals and quality assessors appointed by MOE HQ, who provide an unbiased assessment of school strengths and areas for improvement. This decentralized but systematic approach to school improvement allows MOE HQ to adopt a light touch in monitoring school quality and to assist schools when necessary.

MOE HQ also works very closely with schools, both directly through school visits and consultations with MOE HQ subject specialists, for example, and indirectly through a school cluster system. Every school is part of a cluster of 12 to 14 schools located in close geographical proximity. The cluster serves as a key platform for professional development, communication, networking, and sharing of good practices among schools.

The close working relationship between schools and MOE HQ is further enhanced through a deliberate centralized personnel posting policy that systematically rotates education officers between practitioner roles in schools (e.g., teachers, heads of departments, and principals) and policymaking roles in MOE HQ. Officers interested in such rotations apply for positions at MOE HQ during annual posting exercises. This process helps create a coherent system with a tight link between policy and practice. Shifting between job roles allows educators to gain insight into the policymaking and policy implementation aspects of the system such that each is informed continually by the other. The overlapping networks organically facilitate a close working relationship between school and MOE HQ personnel. Overall, this practice contributes to a strong sense of common mission among school and MOE HQ personnel, and strong alignment between policy and implementation.

New education pathways and curricular options have been introduced progressively and refined over the past two decades to enable children to discover their interests and develop their strengths in different domains. Exhibit 1 illustrates the diversity of pathways available to students today, including avenues for lateral transfers between courses of study. These pathways are designed to allow students to discover their individual talents and interests, acquire and develop skills in particular domains, and inculcate a passion for learning that will drive the continuous pursuit of new knowledge and skills throughout their lives.

Exhibit 1: Education Pathways in Singapore[3]



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

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

3 Specialized schools offer customized programs for students who are inclined toward hands-on and practical learning. Some also offer N(T)-Level examinations. These schools are Northlight School, Assumption Pathway School, Crest Secondary School, and Spectra Secondary School.

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

5 Secondary 4N(A) students who do well in their GCE N(A)-Levels can apply for the Nanyang Academy of Fine Arts (NAFA) Foundation Programme (NFP). NFP is a full-time, one-year practice-based program that prepares students to pursue a diploma in the creative arts at NAFA. Successful applicants will be given a provisional offer of admission to the diploma courses. Upon successful completion of the NFP, students will be offered a place in their chosen diploma courses.

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

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

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

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

While preschool education is not compulsory in Singapore, early childhood educational development programs are widely accessible. Most parents enroll their children in these programs, with some children starting as early as 18 months of age. Over the past several years, the government has played a more active role in raising the quality of preschool education through measures including the introduction of national curriculum frameworks for early childhood education, the implementation of a new quality assurance consultancy scheme for Kindergartens, and the

establishment of MOE Kindergartens to provide quality, affordable preschool education directly, while catalyzing improvements in the rest of the preschool sector.[4,5,6] With the establishment of the Early Childhood Development Agency (ECDA) in 2013, the government has taken further concerted efforts to facilitate the enrollment of 5-year-old children in preschool programs by reaching out to their families. With these efforts, nearly all children are enrolled in a preschool program.

Primary school education (Grades 1 to 6) is compulsory, and formal schooling starts in first grade (Primary 1) in the year in which children turn 7. To build a strong foundation in literacy and numeracy, English language, mother tongue, and mathematics are emphasized in the primary school years, following a national curriculum. Science is introduced in third grade (Primary 3). The curriculum also includes art, music, character and citizenship education, social studies, and physical education, as well as a wide range of co-curricular activities that allow students to explore their interests while imparting values, inculcating life skills, and building character.

At the end of sixth grade (Primary 6), all students take the Primary School Leaving Examination (PSLE), which assesses students in four subjects: English language, mother tongue, mathematics, and science. For the majority of students, results from the PSLE are used as a measure of academic merit in the centralized secondary school admission system, which is both merit- and choice-based. Some students utilize their strengths in other areas (e.g., sports, music, and leadership) to gain direct admission to specific secondary schools, especially those offering special programs in these areas.

Secondary school is not compulsory, but it is completed by nearly all students in Singapore. At the secondary levels, students enroll in Express, Normal (Academic), or Normal (Technical) courses of study. The secondary academic programs lead to the Singapore-Cambridge General Certificate of Education (GCE) Ordinary or Normal Level (O-Level or N-Level) qualifications. The differentiated curricula are designed to match student aptitudes and interests. Students may transfer laterally between courses of study. Because students' strengths vary across subjects, students in one course are allowed to take certain subjects in a more demanding course. For example, students in the Normal (Technical) and Normal (Academic) courses are allowed to take subjects in the Normal (Academic) and Express courses respectively, when appropriate.

MOE has taken this provision for lateral transfers between courses one step further by planning to progressively implement Full Subject-Based Banding (FSBB) in all public secondary schools from 2020 to 2024. Beginning in 2024, with FSBB fully in place, students will no longer be placed in Express, Normal (Academic), or Normal (Technical) courses. Instead, they will take subjects at three subject levels: G1, G2, and G3 (G stands for General), all leading to a common national examination and common national certification starting in 2027, based on their aptitude and interest in the subjects. Students will also be in mixed-ability form classes, which will provide additional opportunities to interact with other students with diverse strengths and interests.[7]

Students with special talent in the arts, sports, mathematics, or science can also choose to enroll in specialized independent schools that offer customized curricula to develop these talents. There are also specialized schools that cater to students who would benefit from a more customized and practice-oriented curriculum. In addition, some schools offer the Integrated Program, which combines secondary and preuniversity education without an intermediate national examination. Students in the Integrated Program experience an enriched curriculum that aims to broaden and deepen their thinking, leadership, teamwork, and communication skills.

After secondary school, the majority of students in each first grade (Primary 1) cohort matriculate to a course of study at a preuniversity institution (29 percent), a Nitec/Higher Nitec course at the Institute of Technical Education (ITE) (25 percent), or a publicly funded diploma course (49 percent).[8] A preuniversity institution focuses on preparing students for university education, and students graduate from these institutions with a Singapore-Cambridge GCE Advanced Level (A-Level) or an International Baccalaureate (IB) qualification. ITE offers a broad-based, multidisciplinary curriculum ranging from engineering to technical, business, and service skills. Working closely with industry partners, ITE provides students with enriched learning experiences, equipping them with industry-relevant technical and professional knowledge and skills. Students who perform well in their Nitec/Higher Nitec courses and have an interest in pursuing further education may progress to a polytechnic. The polytechnics offer practice-oriented diploma courses in diverse disciplines, such as business, chemical and biological sciences, communication, design, digital media, engineering, and manufacturing. Students who perform well in their diploma courses and have an interest in pursuing further education may progress to a university.

As of 2021, there are six government-funded, autonomous universities in Singapore: Nanyang Technological University, National University of Singapore, Singapore Institute of Technology, Singapore Management University, Singapore University of Social Sciences, and Singapore University of Technology and Design. These universities receive government funding to subsidize the fees for part-time and full-time degree programs.

In addition to providing preemployment training, ITE, polytechnics, and universities are key providers of continuing education and training for working adults. These options include full-time courses and part-time skill- and knowledge-building programs that enable employees to continue developing useful and industry-relevant skills throughout their working lives. The focus on lifelong learning and skill development received a boost at the national level with the 2015 launch of SkillsFuture. The SkillsFuture movement encompasses a multitude of initiatives and programs, including helping students discover and develop interests during their school years, providing various opportunities and support for skill development, and actively engaging industry leaders in systematically grooming and deepening industry-relevant skills for prospective and current employees.[9] For instance, the SkillsFuture Work-Study Programs provide opportunities for Singaporeans to pursue a work-study pathway from the diploma to postgraduate and degree levels

offered by the institutes of higher learning and private providers appointed by SkillsFuture Singapore, as well as the industry.[10] Building on the good progress of the SkillsFuture movement, the Next Bound of SkillsFuture was announced in 2020 to further support Singaporeans. Initiatives include scaling up SkillsFuture work-study pathways, supporting midcareer workers, and enhancing workplace learning capabilities.[11]

Holistic education is integral to the Singaporean education system. In addition to academic studies, the development of competencies that are essential for students to thrive in the 21st century (e.g., socio-emotional competencies, critical and inventive thinking, communication and collaboration, and leadership), and character and citizenship education are integral aspects of the education experience across all grade levels in Singapore. Students are provided with age-appropriate opportunities, both within and beyond the formal curriculum, that help to cultivate these competencies and values. Regular participation in co-curricular activities and community projects is open to students in all grade levels and is an integral part of school experiences that help students achieve these goals while contributing actively to the community.

Use and Impact of PIRLS

Singapore has participated in every cycle of PIRLS since 2001. Findings from PIRLS provide valuable benchmarking and trend information about students' attainment of reading literacy proficiencies and other important aspects related to their learning of English (the language of instruction for most subjects in Singaporean schools), such as students' attitudes toward reading, their home language environment, and practices in their schools and classrooms.

National-level findings from every cycle of PIRLS were shared with policymakers, educators, and key stakeholders, and these findings have helped to identify specific strengths and gaps in different groups of students and the possible factors that contribute to variation in student performance. For example, the latest findings from PIRLS 2016 and ePIRLS 2016 showed that Singaporean students have made steady progress in reading literacy, including reading online texts. In particular, there is evidence of students' readiness to navigate and transfer their reading comprehension skills from print to online reading. With the changing profile of learners and the increased use of digital texts, students need to learn and apply reading strategies that constitute multiliteracy and metacognitive skills. Teaching approaches, resources, and materials will need to factor into the development of such higher-order reading skills that are identified using PIRLS data.

PIRLS data also serve as an additional high-quality source of rich information, complementing other local sources, which MOE uses for secondary analyses to inform policy and program reviews, where appropriate. For example, PIRLS data on students' reading habits and attitudes facilitated a better understanding of reading behavior and the impact of reading and library programs. While Singapore's students generally performed well in academic and purposeful reading, findings from PIRLS 2016 suggest that more could be done to inculcate in them the joy of reading for pleasure to achieve the ultimate aim of motivating students to become lifelong readers.

The Language/Reading Curriculum in Primary Grades

Reading Policy

Literacy development is at the heart of Singaporean schools' English instructional programs. The goal is to help students achieve a level of competency that will enable them to use English effectively and appropriately. A Strong Foundation and Rich Language for All is the key approach, which emphasizes building a strong foundation in language and enriching language learning for all students. Language learning is achieved through the integrated teaching of listening, speaking, reading, and writing skills based on purpose, audience, context, and culture. All students are expected to be able to speak, read, and write in English by the time they leave primary school.

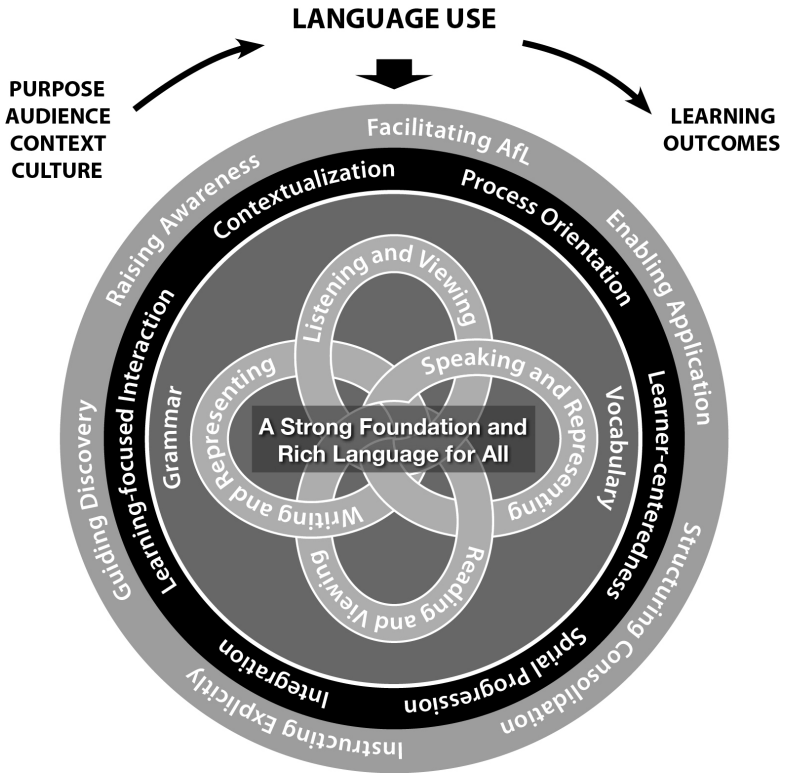
Summary of National Curriculum

The goal of the national 10-year *English Language Syllabus 2010*[12] is to help primary to secondary students communicate effectively in English. The syllabus covers the coherent learning outcomes for language learning from the primary to secondary levels. It aims to help students acquire the following skills by the end of secondary education:

- Listen, read, and view critically and with accuracy, understanding, and appreciation of a wide range of literary and informational/functional texts from print and nonprint sources
- Speak, write, and represent ideas in internationally acceptable English that is grammatical, fluent, mutually intelligible, and appropriate for different purposes, audiences, contexts, and cultures
- Understand and use internationally acceptable English grammar and vocabulary accurately and appropriately; understand how speakers and writers use language to communicate meaning and achieve impact

A strong foundation in language is achieved through a systematic and engaging approach to teaching grammar explicitly using meaningful texts. A rich language environment is provided through the use of a range of multimodal texts from print and nonprint sources. An integrated approach to language learning and literacy development helps students achieve the learning outcomes to become independent readers, lifelong learners, creative thinkers, and problem solvers who can communicate effectively in English (see Exhibit 2). The *English Language Syllabus 2010* is still in effect for the fourth grade (Primary 4) students who were assessed in PIRLS 2021.

Exhibit 2: Key Features of the *English Language Syllabus 2010*[13]



The syllabus outlines the areas of language learning and learning outcomes for all students. To achieve these learning outcomes, teachers are guided by the principles of English teaching and learning, taking into account the teaching processes when developing instructional programs and lessons (see Exhibit 3).

Exhibit 3: Principles (CLLIPS) and Teaching Processes (ACoLADE) of English Teaching and Learning[14]

Principles of English Teaching and Learning (CLLIPS)	
Contextualization	Learning tasks and activities will be designed for students to learn the language in authentic and meaningful contexts of use. For example, lessons will be planned around learning outcomes, a theme, or a type of text to help students use related language skills, grammatical items/structures, and vocabulary appropriately in spoken and written language to suit the purpose, audience, context, and culture. Learning points will be reinforced through explicit instruction and related follow-up practice.
Learner-Centeredness	Learners are at the center of the teaching and learning process. Teaching will be differentiated according to students' needs, abilities, and interests. Effective pedagogies will be used to engage them and strengthen their language development.
Learning-Focused Interaction	The teacher will provide a rich environment for communication that explicitly fosters listening and speaking skills and focuses on the achievement of the learning outcomes. At the same time, the teacher will actively engage students by encouraging participation, boosting their confidence in the use of language, and promoting collaboration among learners from different sociocultural backgrounds.
Integration	The areas of language learning—the receptive skills, the productive skills, and grammar and vocabulary—will be taught in an integrated way, together with the use of relevant print and nonprint resources, to provide multiple perspectives and enable meaningful connections to be made.
Process Orientation	The development of language skills and knowledge about language involves the teaching of processes. The teacher will model and scaffold such processes for students, while guiding them in putting together their final spoken, written, and/or multimodal products.
Spiral Progression	Skills, grammatical items, language structures, and various types of texts will be taught, revised, and revisited at increasing levels of difficulty and sophistication. This will allow students to progress from the foundational level to higher levels of language use.
Teaching Processes of English Teaching and Learning (ACoLADE)	
Raising **A**wareness	Motivate learning and help students pay attention to what is to be learned. Help them make connections with what they already know.
Structuring **Co**nsolidation	Revisit and reinforce what has been learned.
Facilitating Assessment for **L**earning	Diagnose students' needs, abilities, and interests. Identify learning gaps, monitor their learning, and provide timely and useful feedback for improving learning and self-assessment.
Enabling **A**pplication	Teach language in authentic contexts of use and model its use. Let students learn through working collaboratively with the teacher and other students.
Guiding **D**iscovery	Facilitate discovery by prompting, posing questions, and supporting the process by which students can learn about a skill, strategy, process, or rule without prior or explicit instruction.
Instructing **E**xplicitly	Explain and clarify a skill, strategy, or process directly and systematically, in addition to teaching it in contexts of meaningful use.

In the initial primary school years, students learn to read. As they move to the middle and upper primary levels, they read to learn. The syllabus is organized around areas of language use and focuses on exposure to and the study of a wide range of texts. Learning to read, view, enjoy, respond to, and understand critically a variety of print and nonprint texts help students progressively achieve fluency in reading and viewing in order to learn in the content areas.

In primary schools, the Strategies for English Language Learning and Reading (STELLAR) program aims to develop in students a strong foundation in the English language and a love for reading. STELLAR supports teachers by providing the pedagogic framework for lesson design and instructional materials for implementing the *English Language Syllabus 2010*. STELLAR provides schools with a variety of print and nonprint resources from genres such as literary and informational/functional texts to provide authentic contexts for teaching and language learning. Print resources such as newspaper articles, print advertisements, and photographs, and digital resources such as web-based texts, videos, and audio texts are commonly used. As they progress through the grade levels, students use English at increasing levels of difficulty and sophistication.

The English Language curriculum advocates the use of reading strategies such as decoding through phonics, shared reading, close reading and viewing, critical reading, viewing and appreciation, and extensive reading and viewing. At all grade levels, attention is given to promoting reading for enjoyment. Students are encouraged to read widely and learn to analyze and evaluate what they read. Reading and viewing skills are organized into three focus areas:

- Reading Comprehension and Viewing Skills, Strategies, Attitudes, and Behavior—These are organized over three progressive stages:

Stage 1: Beginning Reading	Students who are learning to read are guided using teacher-supported strategies. Modeling is done through reading aloud before moving toward independent silent reading with greater fluency.
Stage 2: Close Reading and Viewing	Students learn to read closely to infer meaning and process information.
Stage 3: Critical Reading and Viewing	Students learn to read critically for implied meaning and develop judgment, higher-order thinking, and evaluation skills. Teachers encourage students to compare texts to make critical connections to what is read and viewed.

- Reading and Viewing of Different Types of Texts—Students apply critical reading and viewing skills and strategies to appreciate how language works in different texts. This enables students to move from reading to writing with greater ease.
- Opportunities for Extensive Reading and Viewing—Exposure to a wide range of texts that model good writing and use of language builds students' language skills and general knowledge, moving them toward reading independence and fluency.

To develop reading skills, teachers need to recognize that students learn in many different ways and progress at different rates.

Professional Development Requirements and Programs

Recognizing that teaching is a craft that needs to be honed continually through both reflective practice and purposeful professional development (PD), MOE is committed to ensuring that teachers remain current, in terms of skills and knowledge, and are well positioned for the future.

MOE works closely with the NIE to provide in-service training courses and advanced programs, including master's and doctoral degrees. MOE also provides specialized PD courses to help teachers stay up to date on content knowledge, pedagogical innovations, and diverse assessment modes. To further and more systematically enable teachers to develop competencies in key strategic areas of importance, in 2020, MOE introduced the SkillsFuture for Educators, a PD road map specially customized for teachers, to help them build and deepen competencies, especially in areas of heightened needs such as assessment literacy, differentiated instruction, and e-pedagogy in tandem with other transformations made in the education system (e.g., shifts toward technology-enabled Blended Learning).[15]

Teachers also have the opportunity to participate in experiential learning in the business and community sectors through the Teacher Work Attachment program. Through these local or overseas attachments, teachers gain new experience and bring fresh perspectives that benefit students back to their classrooms.[b]

More broadly, MOE encourages the growth of a teacher-led culture of professional excellence and innovation. Teacher academies, language institutes, and MOE HQ departments work together to foster a strong culture of professional excellence, underpinned by a philosophy of teacher ownership and teacher leadership for professional development.[16] The establishment of the Academy of Singapore Teachers (AST) in 2010 was a significant step toward achieving this aim and it is still bearing fruit today. For instance, AST has developed the Instructional Mentoring Program, which provides more experienced teachers with the tools to understand mentees' needs, resulting in valuable mentor-mentee relationships.[17] Other efforts of AST to build a culture of professional excellence through collaboration involve the formation of professional learning communities[18] and other networked learning communities[19] to support the sharing of good practices.

In 2011, the English Language Institute of Singapore (ELIS) was launched to drive excellence specifically in the teaching and learning of the English language in Singaporean schools. It offers professional learning programs conducted by Master Teachers and specialists in pedagogy.[20] For instance, ELIS's Professional Learning Programs (PLPs@School) are designed to enable teachers to deepen their knowledge, skills, and classroom practice in the areas of language learning. Some areas of language learning at the primary level include e-pedagogy and Blended Learning in English, teaching grammar; oracy; reading, viewing, and vocabulary; and writing and representing. Also, a range of programs is offered for key personnel, lead teachers, and senior teachers to grow professionally by learning and collaborating with one another, with support from ELIS Master Teachers.[21]

[b] The Teacher Work Attachment program allows teachers to work in another organization for a period ranging from three days to several weeks or even up to a year. These organizations can be in the public or private sector in Singapore or overseas.

Monitoring Student Progress in Reading

National Assessments

Reading is assessed at the national level in the Primary School Leaving Examination (sixth grade) and at all levels of the General Certificate of Education.[22] These assessments include listening comprehension, oral communication, grammar, vocabulary, reading comprehension, and writing. Performance in the individual language components is not reported separately in these national assessments used for summative purposes.

Monitoring Individual Student Progress

Schools also assess students formally and informally through school-based assessments. Starting in third grade (Primary 3), schools conduct short assessments to monitor student learning throughout the year. For formative assessment, teachers adopt assessment methods such as oral presentations, written tests, and portfolios to assess listening, speaking, reading, and writing skills. Formative assessment allows teachers to monitor student progress, identify strengths and weaknesses, and provide meaningful and immediate feedback. Teachers can then adapt teaching methods and materials to meet students' needs and abilities. Teachers also work closely with parents to support student learning. Parents are updated regularly about their child's learning through progress reports, personal calls, and parent-teacher meetings.

Special Reading Initiatives

National Initiatives for Reading

MOE collaborates with strategic partners and supports initiatives to raise awareness and promote reading for pleasure among the young and adults. One key partner is the National Library Board, Singapore. MOE supports initiatives by the National Library Board such as Read@School and the National Reading Movement to nurture a vibrant reading community. Read@School promotes reading among students in schools through reading programs such as storytelling, games, book talks, and workshops that cater to their reading abilities and interests.[23] Read@School also utilizes technology through its interactive online reading portal, discoveReads, which aims to encourage students to connect with one another over their love for books.[24] Programs designed for teachers and parents also help adults become reading role models. For example, the National Reading Movement nurtures a love for reading in adults, encouraging them to Read More, Read Widely and Read Together.[25]

Reading Specialists

Specialists employed by MOE, including reading specialists, educational psychologists, and dyslexia coaches, work with students with special educational needs (SEN), particularly those with literacy difficulties.

Reading specialists work with schools to identify and support students with literacy difficulties. They design reading instruction and intervention programs based on research to support students who lack developmentally appropriate early literacy skills. Two such programs implemented in all primary schools are the Learning Support Program for students in Grades 1 and 2 (Primary 1 and 2) and the Reading Remediation Program for students in Grades 3 and 4 (Primary 3 and 4). Reading specialists provide on-site support to teachers trained to implement these programs. They also provide advice to schools on supporting students with literacy difficulties across all grade levels.

Educational psychologists and dyslexia coaches develop evidence-based resources for teachers and parents to support students with dyslexia at home and in school. The School-Based Dyslexia Remediation Program is a targeted intervention program available at all primary schools to help students with dyslexia.[26] Dyslexia coaches provide training and consultation to schools to enable them to conduct the program.

Programs for Children with Reading Difficulties

At the beginning of first grade (Primary 1), a screening tool is used to identify children without developmentally appropriate English language and basic early literacy skills. These students are then placed in the Learning Support Program for additional instructional support on top of their regular English lessons. This support is sustained for the first two years to build students' basic English literacy skills. In the middle of second grade (Primary 2), students who have not made sufficient progress in the program are identified and screened for dyslexia. Students diagnosed with dyslexia are then placed in the School-Based Dyslexia Remediation Program to receive further literacy support for two years (in Grades 3 and 4).

Students in the Learning Support Program attend specially tailored lessons conducted daily by Learning Support Coordinators (LSCs). Teaching in small groups of 8 to 10 students, LSCs focus on the development of students' basic oracy and literacy skills. The lessons are systematic and skills focused and provide a conducive environment for multiple practice opportunities with modeling by the LSCs. Students leave the program upon achieving age-appropriate reading competency.

Besides these programs, children with SEN, including those with reading disabilities, have access to a core group of teachers who are trained in special needs (TSNs) and Allied Educators[c] with deeper knowledge and skills in supporting the teaching and learning of students with mild SEN (e.g., dyslexia, attention deficit hyperactivity disorder, or mild autism spectrum disorder). The TSN training enables teachers to adapt instructional strategies and lessons to meet the needs of students with SEN.[27]

MOE also works collaboratively with community-based agencies to provide additional support and intervention to address the learning needs of students. One such agency is the Dyslexia

[c] Allied Educators play an important role in providing support to teachers, in areas such as special needs, counseling, and care for at-risk students.

Association of Singapore, to which MOE provides grants for specialized literacy remediation for students with dyslexia.

Second Language Instruction

Schools are supported by Allied Educators and other trained professionals to help students who may not have a good foundation in English, particularly those who do not use English as a predominant language at home. Some schools engage these students in specialized programs to enrich learning outside the curriculum. These could be in the form of more intensive phonics programs, speech and drama classes, or intensive reading programs. English language teachers are trained to differentiate their teaching for students who may need extra support, especially in building the foundational literacy skills.

Response to COVID-19 Pandemic

Teaching and Learning During the COVID-19 Pandemic

Since the beginning of the COVID-19 outbreak, Singapore has been taking precautionary measures to safeguard the well-being of all students and staff in schools.

A national circuit breaker with heightened safe-distancing measures to preempt escalating infections of COVID-19 was implemented from April 7 to June 1, 2020, during which only essential services that supported daily needs (including childcare and student care services) remained open, with safe-distancing precautions in place, in order to significantly reduce movement and interactions in public and private places to bring the infection numbers down.[28] As part of the heightened safety measures, students from all primary schools, secondary schools, preuniversity institutions, and institutes of higher learning, including those from special education schools, shifted to full home-based learning (HBL) from April 8 to May 4, 2020.[29] However, schools remained open to continue supporting students who were the children of essential workers without alternative care arrangements, as well as students with higher needs.[30] In addition, the school academic calendar was revised such that the 4-week midyear school holiday period shifted from June 1 to May 5, 2020, so that lessons could resume on June 2.[31] After the circuit breaker period ended, students from graduating cohorts attended school daily, while other cohorts rotated weekly, alternating between HBL and returning to school for lessons from June 2–28, 2020. This allowed greater distancing between students and staff in school as Singapore transitioned from the circuit breaker period and prepared for further relaxation of safety measures. On June 29, 2020, when it was deemed safe to resume more activities, all primary, secondary, and preuniversity students returned to school every day.[32] Restrictions on co-curricular activities were gradually loosened.

Impact of the Pandemic on Student Learning

Throughout the full HBL phase in 2020, schools continued to provide instruction and support for students to access a range of both online (e.g., the Singapore Student Learning Space (SLS)) and hard copy HBL materials, so that learning continued uninterrupted. For example, schools were provided with a revised scope and sequence for the English Language curriculum, which helped schools manage learning gaps. Schools adopted the strategy of Blended Learning, a mix of face-to-face teaching and online learning, to prepare for curriculum disruption.

MOE also provided schools and teachers with other necessary support to allow them to pivot quickly to alternative modes of teaching and learning to ensure as much learning as possible would continue, even amid the pandemic. This included a curriculum continuity plan that provided guidance on strategic and coordinated coverage of teaching units across the national curriculum and intervention programs. Adjustments were made to curricular materials, and sample lesson plans reflecting those adjustments were provided to teachers. More online resources were developed and made accessible through the SLS. A reading resource pack containing a curated reading list and suggested activities supported schools' reading befrienders program during the school holidays and school closures.

MOE HQ conducted regular check-in surveys with schools to further understand the kind of support they needed. When necessary, customized support such as the deployment of additional officers and senior teachers was provided to staff schools.

Schools also loaned digital devices or provided internet access to students who needed those resources. During the implementation of full HBL, school staff, including those in special education schools, maintained regular contact with students and their parents to provide ongoing academic and socio-emotional support.

Policy and Practice Changes

In Singapore, COVID-19 has hastened the system-wide adoption of technology-enabled teaching and learning, a shift that had already started when MOE launched the first Information and Communications Technology (ICT)-in-Education Masterplan in 1997. The pandemic also precipitated the implementation of Blended Learning as a regular feature of the school experience to further develop students' ability to be self-directed, passionate, and lifelong learners. Blended Learning will be supported by the use of educational technology such as the SLS, and the National Digital Literacy Program, which will ensure that all secondary students will own a personal learning device by the end of 2021.

Through Blended Learning, regularly scheduled HBL Days will complement in-person teaching and learning in schools. Secondary schools and preuniversity institutions will start to implement Blended Learning for some levels from Term 3 of 2021 and at all levels by Term 4 of 2022. As part of Blended Learning, students will learn what is prescribed by the curriculum through a mix of home-based and in-school activities, and leverage both online and offline

approaches to learning. This will provide students with more opportunities to learn at their own pace and to be empowered to take charge of their learning. There will also be an emphasis on student-initiated learning, whereby dedicated time and space will be provided to allow students to pursue their own interests outside of the curriculum.[33]

Students who need to return to school on HBL Days can do so. These include students with higher needs, students who require closer supervision, and those who lack a home environment conducive for learning. These students will conduct their HBL Days according to the school's planned lessons and activities, similar to those who are at home.[34] This ensures that no students are disadvantaged by the adoption of technology for learning.

Cyber Wellness education within the curriculum has been enhanced with a greater emphasis on equipping students with the skills to navigate online spaces safely and be able to recognize risks in the digital space and identify and discern negative influences and inappropriate websites. Students are also taught how and when to seek help. These efforts will better equip students to learn using personal learning devices and be able to navigate the online space safely and responsibly.[35]

Impact of the Pandemic on PIRLS 2021

The national circuit breaker period was effective in curbing the spread of COVID-19 in Singapore, resulting in low rates of COVID-19 transmission during Singapore's PIRLS 2021 data collection period from October to November 2020. Thus, the pandemic did not have a significant impact on the data collection procedures for PIRLS 2021 in general, except for challenges in the conduct of school visits by the International Quality Control Monitors due to safe-distancing measures implemented in schools.

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