



SINGAPORE'S EDUCATIONAL REFORMS TOWARD HOLISTIC OUTCOMES (UN)INTENDED CONSEQUENCES OF POLICY LAYERING

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Executive summary

Singapore is a city-state in South-east Asia of about 710 square kilometers and inhabited by 5.64 million people of Chinese, Malay, Indian, and Eurasian background. Since independence in 1965, the country's democratically-elected government has remained politically stable, allowing for long-term education policy planning. Without natural resources,

human capital development through education has been a significant policy priority over the decades, including the establishment of the sole teacher-training National Institute of Education (NIE). A distinctive characteristic of the Singapore education system is the close tripartite relationship among the Ministry of Education (MOE), NIE, and Singapore schools, which enables systemic changes to spread throughout the school system and provides an ongoing avenue for feedback and continuous improvement.¹

¹ This case study is a companion to "[Transforming education for holistic student development: Learning from education system \(re\)building around the world](#)" (Datnow et al., 2022), a summary report that explores the work of building and rebuilding education systems to support holistic student development in six education systems in Singapore, Ireland, Chile, Canada, India, and the United States and in one cross-national system (the International Baccalaureate). While different in many ways, the seven systems bear remarkable similarities in their efforts to (re)build education systems—each is working in policy contexts pressing for academic quality and equity, while also facing additional incentives to support holistic student development.

The government centralizes policy control and infrastructures to create an efficient system, making high-quality public education available to all under the Compulsory Education Act 2000, while simultaneously decentralizing the system to develop schools into learning organizations that are continuously improving with minimal governmental intervention. In line with increased school autonomy, there was a shift from a centralized external appraisal system by a team of inspectors toward schools self-appraising with rubrics-based, formative performance measures.

Education in Singapore has evolved from a focus on fulfilling economic needs and supporting students' academic development to an increasing focus on holistic student development, including character formation, societal participation, and self-actualization. The emphasis on holistic education is also to expand educational parameters beyond cognitive abilities and academic performance to other growth areas such as physical, socio-emotional, and artistic achievements. Desired holistic student outcomes are outlined in the 1997 "Desired Outcomes of Education" and further enhanced in 2010 with the "21st Century Competencies and Student Outcomes" framework.

In the transition from economic imperatives to holistic drivers, there has been a gradual move over five policy phases (from 1965 to 2022 and beyond) toward curriculum and school diversification to cater to different students, with more autonomy given to schools to innovate their pedagogy and improve instructional quality to meet their students' unique needs. Importantly, there has been a shift in policy rhetoric from focusing on educational structures to focusing on pedagogy and instructional quality.

The overall structural reform was the provision of multiple pathways to academic success, along with increased curriculum customization that recognizes students' different abilities and strengths. By 2024, streaming in all secondary schools will be replaced by Full Subject-Based Banding (FSBB) to support students' differing abilities and interests in specific subjects.

A series of reforms were also implemented to cater to students' well-being, including the 2005 Socio-emotional Learning framework, the 2007 Holistic

Health Framework to encourage students to lead a healthy lifestyle, and a comprehensive Character and Citizenship Education (CCE) curriculum with provision for knowledge, skills, values, and attitudes to be taught explicitly.

In brief, the five phases of educational policy reforms have seen gradual systemic shifts in four key aspects: (a) from top-down government control toward more bottom-up initiatives and increasing school autonomy for curriculum, pedagogy, and assessment; (b) from centralized direction to increasingly ecological whole-of-system innovations; (c) from teacher-proof instructional strategies to increasingly learner-centric pedagogies; and (d) from creating school access to focusing on instructional quality. Policies are layered upon one another to move the system in these desired directions. In the latest phase, "Learn for Life" (2020 onwards), the shift away from an overemphasis on academic achievement continues, with emphasis on preparing Singapore students to connect, collaborate, create and to be resilient to changing circumstances.

To shift pedagogy from being mainly didactic in nature—with emphasis on preparing students for national examination—the Singapore government recognized the need to focus on school leaders' and teachers' capacity building to enable new curricula and teaching practices. The school cluster structure was initiated in 1997 to enable collaboration and learning among school leaders, key personnel, and teachers. Opportunities for collaborative teacher learning are provided at different ecological levels: professional learning communities (PLCs) within schools and networked learning communities (NLCs) across schools. Beyond the education system, the Singapore government works with other ministries and community organizations, such as ethnic self-help organizations, to tackle educational equity issues.

The Singapore education system was able to adapt to the impact of the COVID-19 pandemic by switching to full home-based learning and subsequently blended learning. The centralized infrastructure facilitated the rapid deployment of technological resources to needy families and the existing tripartite relationship among MOE, NIE, and schools enabled the quick development of learning resources.

Ultimately, even though the official policy narrative post-1997 has been a de-emphasis on examination results and educational infrastructure to help improve the instructional quality in schools toward holistic outcomes and improved student well-being have been developed, education systems building co-exists with an alternative underlying shadow education system valued by parents who continue to chase narrow academic outcomes. Tuition and enrichment centers in Singapore constitute the shadow education system.

Considerations for policy:

1. In changing from a narrow to a more balanced holistic development purpose of education, policymakers should continue to expand and communicate their definition of desired educational outcomes.
2. To counter the shadow education system, further reform success requires not only working with parents, but potentially even redirecting their drive to provide the best opportunities for their children.
3. There is a need for longitudinal research to study how the paradox in Singapore's education system—between academic and holistic outcomes—is creating incoherence in the system, with students in the lower primary and lower secondary given opportunities for more student-centered learning, while the focus for upper primary and upper secondary is to prepare students for high-stakes national examinations.

Introduction

Singapore is recognized for its success in supporting students' academic development. This success is mainly attributed to the close tripartite relationship between the Ministry of Education (MOE), the sole National Institute of Education (NIE), and Singapore schools, which enables systemic changes to spread throughout the school system. Less recognized is that for nearly 30 years, Singapore also has had holistic student development as a central policy priority.

BOX 1

The summary report "[Transforming education for holistic student development: Learning from education system re\(building\) around the world](#)" lays out 10 key lessons for transforming education systems, which are all exemplified in this case study. In particular, this case study highlights the need to:

- 1. Manage equity-and-rigor tension:** Engage the perceived tensions between equity and rigor in deliberation about holistic development.
- 2. Design educational infrastructure:** Design educational infrastructure to support new visions for instruction, and mobilize this infrastructure to support instructional improvement.
- 3. Support infrastructure use:** Support the use of educational infrastructure in school and classroom practice through professional learning.

Singapore pursues this goal by leveraging macro-level infrastructures, supported by the tripartite relationship.

The following analysis examines Singapore's journey toward holistic student development. It begins with an examination of the macro-level context, the evolving purposes of schooling, and the progression of reforms supporting those purposes, with attention to ways holistic student development emerged as a priority alongside academic development. It continues by examining ways that change infrastructures have accumulated throughout this policy progression, with an emphasis on how infrastructures supporting holistic student development have emerged from (and alongside) infrastructures supporting students' academic development. It then examines complicating conditions arising both from a longstanding shadow infrastructure supported by parents and, more recently, by the COVID-19 pandemic. It concludes with three key recommendations for policy.

Macro-level policy environmental factors and purpose of education

This section highlights the evolving purposes of education in Singapore, from a predominant focus on fulfilling economic needs to an increasing focus on holistic student development, including character formation, societal participation, and self-actualization. The policy environment that has enabled the pursuit of both the economic imperative and holistic student development is outlined.

There are five features of Singapore's policy environment that have a direct bearing on the educational policy reforms implemented since Singapore's Independence in 1965. First, the political party, People's Action Party (PAP), that constitutes the government remained unchanged since it came into power in 1965. As such, policies that are implemented are planned for the long term, with little resistance in parliamentary debates and with typically strong support from the citizenry. Second, the government has sought to centralize policy control and infrastructures to create an efficient system. For example, teacher education is centralized in one teacher training institute—NIE—which works closely with the MOE. This points to the third feature—the close tripartite relationship between the MOE, NIE, and Singapore schools that enables systemic changes to spread throughout the school system. The MOE acts as the centralized hub to spread reforms, receive feedback from schools on such reforms, and use research evidence from NIE to drive new initiatives. Fourth, the tripartite partnership enables the provision of inputs to the MOE for regular curriculum reviews that are conducted every five to seven years. New curriculum updates are translated into teacher education and professional development programs conducted by NIE and MOE.

Finally, at the macro policy level, the government has continuously made significant public investment in education. In 2019, the MOE spent close to S\$1.3

billion, amounting to over 16 percent of annual government expenditure, or about 2.5 percent of GDP. This exceeded expenditure of all other ministries besides Defense. As a share of total government expenditure, Singapore's spending on education remains high (Ho, 2021). Likewise, the government has apportioned over S\$120 million of funding for education research from 2018-2022.

A key reason for the heavy investment is a strong belief in the purpose of education as a form of social investment that raises the human capital of individuals and the nation. Recognizing the importance of education to economic growth and jobs, the government made high-quality public education available to all. As Ho (2021, p. 193) points out:

Education has been the lynchpin of the Singapore System, a cornerstone of the social investment state. It is the foundation for skills acquisition and employability, enabling good incomes and self-reliance for citizens while keeping the economy competitive and attractive to investment. It is also the principal means by which social mobility has been sustained.

This is reflected in ensuring that all children undergo compulsory primary education, under the Compulsory Education Act 2000. Education standards are enforced through a national high-stakes examination, the Primary School Leaving Examination (PSLE).

While the purpose of education has expanded beyond the economic imperative in recent decades, encompassing character formation, skills for effective societal participation, and opportunities for self-actualization, the close relationship between education and the economy continues to drive curricular content. Since independence in 1965, Singapore's focus on economic growth has driven its status as a developmental state (Gopinathan, 2015), with educational policy reforms signaling a transition from economic imperatives, to one that introduces holistic drivers while retaining economic drivers, resulting in challenges and tensions described in a later section of the case study.

5 phases of education reforms

NIE researchers delineated four phases in the policies implemented from 1965 to 2019 (Goh & Gopinathan, 2008; Gopinathan, 2015), with the fifth started in 2020 (MOE, 2020). The description below focuses on K-12 reforms. Two phases focused on holistic student development: the Ability-based, Aspiration-driven Phase (1997-2011) and the Student-centric, Values-driven Phase (2011-2019), with attempts in the earlier Efficiency-driven Phase (1979-1997) to enable children to learn at their own pace through streaming and school differentiation. Over time, there has been a gradual move toward curriculum and school diversification for different learning needs, with more autonomy given to schools to innovate their pedagogy and improve instructional quality to meet their students' unique needs. A series of reforms were also implemented to cater to students' well-being.

SURVIVAL-DRIVEN PHASE (1965-1978)

In the Survival-driven Phase, there was an urgent need to educate and prepare children for an emerging economy that was transiting from an entrepot economy to an open, export-based one. The government focused on developing new skills and work attitudes to accommodate new economic strategies, with education involved in socialization and nation-building processes (Gopinathan, 2015). A national curriculum was implemented with a focus on languages, science, and mathematics to support the needs of the economy.

EFFICIENCY-DRIVEN PHASE (1979-1997)

In the Efficiency-driven Phase, Singapore became a newly industrializing economy, and the education system was unable to supply the new skills needed. There was widespread student attrition as the “one-size-fits-all” education system, implemented in the Survival-driven Phase, disengaged students. The Goh Report (Goh et al., 1979) also found low levels of literacy and ineffective bilingualism, because a large population of children (85 percent) did not speak English at home. Consequently, major structural

reforms were implemented, including “streaming,” a form of ability tracking (Oakes, 2005), which enabled students with different abilities and aptitudes to learn at their own pace. Streaming was implemented at the primary (grades 1-6) and secondary (grades 7-10) levels, and increasing school differentiation formed independent and autonomous schools, designed to cater to high-ability students.

ABILITY-BASED, ASPIRATION-DRIVEN PHASE (1997-2011)

The next phase—the Ability-based, Aspiration-driven Phase—continued structural reforms through further school deregulation and differentiation, such as the start of NorthLight School in 2007 to cater to less academically inclined students who failed their PSLE. The overall structural reform was the provision of multiple pathways to academic success along with increased curriculum customization that recognizes students' different abilities and strengths. Importantly, this phase was signalled by a shift in policy rhetoric from focusing on educational structures to focusing on pedagogy and instructional quality.

In 1997, the then Prime Minister introduced a major policy initiative, “Thinking Schools, Learning Nation” (TSLN) (Goh, 1997). He said:

Thinking schools must be the crucibles for questioning and searching, within and outside the classroom, to forge this passion for learning among our young. ... Every school must be a model learning organisation. ... Learning goes beyond simply maximising an individual's potential. A nation's culture and its social environment will shape what learning means and determine its impact. Everyone counts.

The shift in focus toward instructional quality was reinforced by the next major policy initiative, “Teach Less, Learn More” (TLLM) in 2005. Recognizing that pedagogy was mainly didactic, with emphasis on preparing students for national examinations, the former Minister of Education, Tharman Shanmugaratnam, argued that there was a need for education reforms to focus on capacity building to

improve teaching and learning (Shanmugaratnam, 2005):

We are shifting focus from quantity to quality, and from efficiency to choice in learning. ... We are progressively shifting the balance in education, from learning content to developing a habit of inquiry. ... The improvements in quality ... have to come from innovations on the ground - new teaching practices, new curricula responding to a school's unique needs, and new options and chances given to students.

The year 1997 also marked another important policy initiative, the “Desired Outcomes of Education,” (Tan, 2013). It provided a “common purpose for educators, [drove] our policies and programmes, and allow[ed] us to monitor and assess the state of our education system” (MOE, 2010a). Through schooling, students would learn to become “confident persons,” “self-directed learners,” “active contributors,” and “concerned citizens.” This was further enhanced with the “21st Century Competencies and Student Outcomes” Framework in 2010 (MOE, 2010b), which identified a list of competencies (e.g., civic literacy, communication, collaboration, and information skills, etc.) and core values (e.g., resilience, integrity, etc.) that “underpin the holistic education that our schools provide to better prepare students for the future” (MOE, 2010b).

STUDENT-CENTRIC, VALUES-DRIVEN PHASE (2011-2019)

The Student-centric, Values-driven Phase further shifted the focus toward the holistic development of the child, continuing the momentum gained from TSLN and TLLM, which attempted to change societal fixation on academic performance. By 2024, streaming in all secondary schools will be replaced by Full Subject-Based Banding (FSBB) to support students’ differing abilities and interests in specific subjects. The emphasis on holistic education is also to expand educational parameters beyond cognitive abilities and academic performance to other growth areas, such as physical, socio-emotional, and artistic achievements. In 2016, then Acting Minister for Education (Schools) Ng Chee Meng stated that the MOE “will create an environment conducive for holistic development, by providing [students] the time, space, and opportunity

to discover and nurture their talents, strengthen their character, and develop their lifelong love for learning” (Philomin, 2016).

Tan (2022) points to two key initiatives in line with the drive for holistic education. The first is an updated scoring system for the national primary examinations. From 2021, a new scoring system for PSLE, using broad bands that are criterion-referenced and standards-based, was implemented to reduce the exam-centric and competitive schooling environment. Previously, absolute numeric PSLE scores enabled comparison of scores and drove competition among students. The second initiative is the expansion of the Direct School Admission (DSA) programme that began in 2004. Through DSA, students can apply to schools based on their talents in specific academic subjects, co-curricular activities (such as music, chess, etc.), and sports. From 2018, DSA was opened to all secondary schools so that students would have “more options and opportunities to access secondary schools with distinctive programmes that match their areas of strengths and interests via direct entry” (MOE, 2017).

LEARN FOR LIFE (2020 – PRESENT)

In the latest phase, coined by the MOE as “Learn for Life” (began in 2020), the shift away from an over-emphasis on academic achievements continues, with a focus on preparing Singapore students to connect, collaborate, create, and to be resilient to changing circumstances. The attention on pedagogy and instructional quality continues with teachers encouraged to deepen their pedagogical skills, with emphasis on the teaching of values and socio-emotional competencies. Schools and teachers are encouraged to be change agents to innovate and prepare students for life, not just the next examination.

STUDENT WELL-BEING POLICY REFORMS

In addition to these five major reform phases, three new policies were implemented to improve student well-being. First, schools were encouraged to develop programs that focus on the physical, mental, and social health of students. The 2007 Holistic Health Framework (HHF) was established to broaden the health promotion efforts of schools to encourage

students to lead a healthy lifestyle. A recent review of the HHF suggests that many students “reported practising the healthy habits they were taught. The proportion of students in our schools who were overweight remained stable in the past 10 years at between 11 and 13%.” (MOE, 2022a).

Second, in 2005, the Socio-emotional Learning (SEL) framework (MOE, 2022b) was implemented as a compulsory component of the national school curriculum, and guided schools to develop student self-awareness, social awareness, self-management, relationship management, and responsible decision-making. SEL advocated a whole-of-school approach to support students’ socio-emotional development and the promotion of positive teacher-student relationships. Importantly, resources were developed by the MOE for parents to support the socio-emotional development of children at home, including resources to help students transit between kindergarten, primary, and secondary school levels, and resources to help children develop resilience, and learn about gratitude and confidence (MOE, 2022c).

Third, SEL was taught within the Character and Citizenship Education (CCE) curriculum, which included Education and Career Guidance, Sexuality Education, Cyber Wellness, Mental Health, Family Education, and National Education. Aligning with the 21st Century Competencies Framework (MOE, 2010b), MOE’s CCE curriculum emphasized the interconnectedness of core values, social and emotional competencies, and citizenship dispositions, and a sense of purpose in students. The primary and secondary CCE syllabi (MOE, 2021a; MOE, 2021b) posited students’ engagement through key principles for effective pedagogical practices (that is, positive relationships for learning, sense-making, and metacognition and deep learning) and also recommended selected pedagogical approaches for use in CCE lessons. The CCE syllabus provided for knowledge, skills, values, and attitudes to be taught explicitly during CCE lessons, Form Teacher Guidance Periods (FTGP), CCE Mother Tongue Language (MTL) lessons, Programme for Active Learning (PAL), and CCE programs.

Policy transitions and change infrastructures

The five phases of educational policy reforms have seen gradual systemic shifts in four key aspects: (a) from top-down government control toward more bottom-up initiatives and increasing school autonomy for curriculum, pedagogy, and assessment; (b) from centralized direction to increasingly ecological whole-of-system innovations; (c) from teacher-proof instructional strategies to increasingly learner-centric pedagogies; and (d) from creating school access to focusing on instructional quality (Ng, 2008). In describing these shifts, Ng (2017, p. 13) points to how they create new paradoxes, such as centralized decentralization (detailed in the next section), because the “system is undergoing change from an old paradigm to a new one, where two contrasting states exist at the same time.”

As a consequence of these shifts, policies are layered upon one another (Thelen, 2004; Wong, Kwek & Tan, 2020) to move the system in the direction outlined in the Desired Outcomes of Education. Infrastructures supporting increasing school autonomy and holistic student development have emerged from (and alongside) infrastructures supporting students’ academic development.

CENTRALIZED DECENTRALIZATION

TSLN and TLLM were attempts to develop schools into learning organizations that are continuously improving and innovating with minimal governmental intervention. However, such changes take time and have residual effects from previous reforms. One such example is what Ng (2017, p. 77; see also Chua, 2014) terms the “centralized decentralization” paradox of the Singapore system:

In essence, the Singapore education system centralizes to achieve system level synergy. The system is not merely a loose collection of schools with no central direction. It is a tight knit community

of schools coming together to serve the higher order needs of the country... The system decentralizes to achieve diversity, innovation, and customisation at the school level. It is not a one-size-fit-all system, where all schools are faceless, characterless, and merely a piece of the great machinery.

With TSLN's push for school autonomy, the so-called paradoxical situation places a heavy emphasis on school leaders to adapt the MOE's policies into their unique school contexts and manage implementation issues (Teo, 1998). The increasing school autonomy has changed the MOE's role from "an interventionist role to a supervisory role, ... Such an approach challenges school leaders ... to find the balance between autonomy and accountability" (Ng, 2017, p. 77). School and teacher leaders undergo professional development to enhance their capacities to drive school-based curriculum innovations. In 2006, the MOE began to appoint School Staff Developers (SSDs) in every school, a senior practitioner tasked to ensure that the school's professional development programs cater to the school's and staff's needs.

Consequently, in line with increased school autonomy, there was a shift from a centralized external appraisal system by a team of inspectors toward involving schools in self-appraisal. The previous external validation framework was modified to a customized validation, with schools having a choice of which outcomes they would like to focus on using formative, rubrics-based performance measures to support school self-evaluation.

ECOLOGICAL INFRASTRUCTURES

The ministry recognizes that to drive school improvements, additional infrastructures are needed to coordinate and support school improvement efforts. The school cluster structure was initiated by the MOE in 1997 as "another important step in nurturing the culture of Thinking Schools" (Teo, 1997). In the cluster structure, a cluster superintendent oversees and supports a cluster of 11-13 schools. The cluster was designed as a formal platform to circulate ideas among school leaders, who could learn from and collaborate with one another (Ho & Koh, 2018).

To enable teachers to move from implementing set curriculum toward designing their own curriculum and exploring new teaching practices, there was a shift toward supporting teachers to learn and share collaboratively. Opportunities are provided at different ecological levels: networked learning communities (NLCs) across schools at the national, zonal, or cluster levels (Ho & binte Munir, 2022; Lee et al., 2020) and professional learning communities (PLCs) within schools (Hairon et al., 2015). Introduced in 2009, PLCs are supported by schools that provide time during curriculum hours for teachers to participate in these PLCs, while teachers participating in NLCs may be excused from certain school duties. NLCs are considered one of the MOE's "key professional development programmes" (Goh & Tan, 2016), and while mainly centrally administered, assist teachers to experiment with pedagogies that are aligned with efforts to improve instructional quality and innovative practices (Shaari & Hung, 2017). There are about 221 NLCs in Singapore to date, and they have become "another collaborative platform for teachers and schools to transform curriculum and instruction in the context of education reform" (Salleh, 2020, p. 511).

Another important infrastructure to enhance instructional quality is the establishment of the Academy of Singapore Teachers (AST) in 2010. AST's mission is "building a teacher-led culture of professional excellence centred on holistic development of the child" (AST, 2022). At the system level, AST provides a key educational infrastructure in supporting a strong school culture for teacher-driven collaborative learning, with the purpose of impacting curricular and pedagogical innovations (Salleh, 2020). AST houses the Principal Master Teachers and Master Teachers, perceived as teacher leaders known for their pedagogical excellence. AST also developed two Centres for Teaching and Learning Excellence (CTLE) in 2015 for the secondary level and in 2021 for the primary level. The two centers provide in situ professional development where teacher learning occurs within classrooms through master classes and demonstration classes, supported by the tripartite partnership involving master teachers from AST, experts from NIE, and teachers in the CTLE school. A key feature of the CTLE is to enhance teacher capacities through professional development

that closes the gap between research and practice, including experimentation with research-based curriculum innovations.

Taken together, these various infrastructures provide platforms for teachers to simultaneously lead and learn, reinforcing the strong link between teacher leadership and teachers' professional development (Poekert, 2012). The MOE also encourages teachers to adopt a critical inquiry approach to examine and improve their instruction, providing courses for teachers to learn about different inquiry methods such as action research, lesson study, and learning study (AST, 2022). However, research suggests that teachers' adoption of critical inquiry is still nascent, with some teachers unsure as to what constitutes an inquiry method or process (Ho et al., 2020), or with teachers focusing on completing the inquiry stages as milestone checks rather than to problematize and reflect on their practice (Hairon et al., 2015).

Equity and support for disadvantaged families and students

In his memoirs, the late Prime Minister Lee Kuan Yew argued that Singapore's approach toward redistribution was guided by the "need for balance between individual competition and group solidarity" (cited in Ho, 2021, p. 55). A fine balance between economic growth and equity is a key principle of the Singapore system, driven by meritocratic ideals that maintain individual self-reliance and taking responsibility for family. This was made explicit by Prime Minister Lee Hsien Loong in his 2005 government budget speech (cited in Phang, 2007, p. 18):

We must not breed a culture of entitlement, encouraging Singaporeans to seek Government support as a matter of right, whether or not they need it. ... The better-off must help the poor and the disadvantaged ... In many developed countries, the state takes on this responsibility... Our social compact is rather different. It is based on personal responsibility, with the family and community playing key roles in supporting people through difficulties.

The state will provide a safety net, but it should be a last resort, not a first resort... We thus avoid state welfare, which will erode our incentive to achieve and sap our will to strive.

The organizing principle of Singapore's socio-economic system is therefore one "that is centered on individual effort and self-sufficiency through income from work, accompanied by strict fiscal rectitude. The pursuit of economic growth has primacy, as it is seen as the means of achieving all other objectives – creating jobs, raising incomes, improving living standards, providing financial security, and giving the state the resources for public spending and redistribution" (Ho, 2021, p. 55). This translates in educational terms into a tension between meritocratic ideals and equity, especially since meritocracy is a primary underlying philosophy of the education system. Students compete for a place in the school of their choice based on merit. With increasing recognition of how some families are unable to provide resources for their children, a broad range of policy measures have been undertaken to address issues of inequity and support holistic student development, including:

- Redistribution and stronger social safety nets;
- Increasing assistance to children from disadvantaged families;
- Enhancing state support for early childhood education; and
- Increasing investment in education for less well-off families and children.

Specific education measures

Over the past few decades, a range of policies have been implemented to level the playing field in education. This includes financial support for ethnic self-help organizations so that they can provide low-cost tutoring to improve academic achievements. Parental workshops are also conducted to educate disadvantaged parents on how to provide a conducive

home environment for their children. The Education Endowment Scheme, implemented in 1993, provides every child between the ages of 6 and 16 in mainstream schools, special education schools, and madrasahs with financial subsidies. Recent years have seen the increase in government support for preschool education and support for children from disadvantaged families. This required coordination between the MOE, the Ministry of Social and Family Development, and community organizations, such as the Family Services Centres, which provide social services for low-income or vulnerable families. There is an increased awareness that equity issues must be addressed through a more holistic approach involving multiple stakeholders (Ho, 2021). For example, the KidSTART initiative launched in 2016 coordinates support for families and monitors the developmental progress of children from birth through home visitations by health or social service professionals. It builds an ecosystem of support where multidisciplinary professionals and the community work together with parents to support the child's development in his immediate settings.

The MOE Financial Assistance Scheme (FAS) is a redistributive strategy to provide financial support to primary, secondary, and pre-university students from lower-income families. Through FAS, students can apply for full-fee waivers, free uniforms and textbooks, and transport subsidies, etc. The Uplifting Pupils in Life and Inspiring Families Taskforce (UPLIFT), launched in 2018, enhances support for students from disadvantaged families, for example, by providing scholarships for such students who are admitted into independent schools that typically have higher school fees and other costs. Further holistic approaches to provide integrative support for students involve social service agencies that provide after-school care, tuition, and mentoring programs.

From 2020, all primary schools will be equipped with a Student Care Center (SCC) to provide after-school care and programs; such SCCs will be expanded to secondary schools to support students from disadvantaged families. Further coordination between multiple stakeholders and community resources, including volunteers, ethnic self-help groups, and other support units are made possible through a new UPLIFT Program Office. Pedagogically, a Learning Support

Programme (LSP) was implemented in 1992 to help support primary 1 and 2 (grades 1-2) students who are weak in literacy and numeracy through additional small-group lessons. LSP was subsequently extended to provide support for students up to the end of secondary-school education (Ng, 2017).

Complicating conditions

Ultimately, even though the official policy narrative post-1997 has been a de-emphasis on examination results, and educational infrastructures have been developed to help improve the instructional quality in schools toward holistic outcomes and improved student well-being, such education systems building co-exist with an underlying shadow infrastructure that supports an alternative education system valued by parents who continue to perceive educational outcomes differently. The recent COVID-19 pandemic fast tracked plans to move toward blended learning and further demonstrated the policy capacity (Woo, 2022) of the Singapore government.

PARENTOCRACY

Singaporean parents across all ethnicities generally value education as a means of social mobility. This is driven by a key pillar of Singapore's society – meritocracy – and the strong belief that hard work in school and the workforce translate to financial security and success. In recognizing the importance of parents, the MOE has implemented a suite of initiatives to increase parental engagement with their children's learning and schooling. In 1998, the Community and Parents in Support of Schools (COMPASS) was set up and included MOE officials, school-based parent support group representatives, ethnic self-help organizations, members of the business community and media. COMPASS aimed to strengthen and promote school-home-community collaboration and engage parents to partner schools to deliver a holistic education for children. Parent support groups were implemented in all schools to engage parents in educational endeavours and to raise awareness of how education has changed toward holistic outcomes. These infrastructures seek

to align parents with educational purposes that are increasingly different from what they themselves experienced and believed in.

The rise of proactive parenting, especially among families with the financial means and time to help their children, is in part due to rising family incomes and entrenched views by parents that university credentials are the primary means for success and security in life. This has led to an increasing conflict with meritocratic ideals, with researchers arguing that in Singapore, there is a shift from a “meritocracy” to a “parentocracy,” whereby one’s success is contingent on parents’ capacities to invest in their children’s educational success (Chiong, 2022; Tan, 2019). The government provides public education for all children, but parentocracy is producing behaviors that encourage intense competition among children, and a heavy emphasis on responsibility by families rather than the state, especially for those with the means to do so.

In a rare Singapore study that examined the lives and beliefs of 12 disadvantaged families, Chiong (2022) highlights how the state, schools, and disadvantaged families develop a surprisingly close, collaborative relationship, contrary to Anglo-American research that describes such relations as distrustful, disenfranchised, and even alienating. Chiong’s study found that disadvantaged families in Singapore have developed a strong dependency on schools and the state, one which paradoxically facilitates the internalization of individual and familial responsibility for future success, creating a “dependent yet responsible” mentality (p. 130). In reality, such state dependency reflects a lack of alternatives facing such families.

SHADOW EDUCATION INFRASTRUCTURE

A key challenge to achieving the aims of holistic education is parental obsession with examination results and getting their children into elite schools (Ng, 2017). This “pushback” from parents has the potential to constrain efforts for education systems building, as parents themselves construct an arguably “shadow” education infrastructure that supports instructional strategies that they value—strategies geared toward narrow academic achievement outcomes. For example, although the MOE abolished official school ranking in

2012 to reduce interschool competition, some parents and private education providers constructed their own informal school ranking league table based on public MOE information (Ng, 2017). The change in PSLE test scoring from numerical grades to grade bands was meant to reduce stress and competition, but there continues to be active discussions in a popular parents’ discussion forum, *kiasuparents.com*, on school selections based on PSLE bands.

Many students still focus on grades, and are under pressure from parents, teachers, or themselves to excel in examinations. Since 1997, the MOE had moved away from a linear progression pipeline model toward a flexible pathway model that is still premised on meritocratic ideals but allows for greater educational choices and pathways. Social mobility is potentially enhanced through a flexible pathways model since students are provided with more varied educational opportunities throughout the different levels of the system and can progress up the educational ladder at their own pace (Kwek, Miller & Manzon, 2019). Then Minister for Education Heng Swee Keat urged Singaporeans to “make the transformation from a ‘scarcity mentality’ that focuses on a single pathway to success to an ‘abundance mentality’ with multiple pathways” (Philomin, 2015). However, some parents continue to pursue entry into elite schools that historically generate strong academic results. This includes volunteering time for school activities, relocating homes to be closer to the schools they value, and putting their children through tuition and enrichment classes.

Such tuition and enrichment centers in Singapore also constitute the shadow education system (Bray, 2013), estimated at S\$1.4 billion per annum (Seah, 2019). While some students do value tuition as a form of remediation to support their learning, others are pressured by parents to go for tuition to “maintain a competitive edge in school” (Ng, 2017, p. 134). Academic credentials gained from national examinations have significant value. It is not uncommon to hear of Singaporean parents taking a year’s leave during their child’s PSLE year to support their child. Parental aspirations for their children to enter the best schools have driven an “education arms race” for the limited spaces in these schools

(Ng, 2017). In line with the shadow education system, there is a booming publications industry that collates examination test papers from elite schools for students to practice on. Such shadow infrastructures continue to exist alongside official infrastructures.

Nevertheless, recent attempts to reform and reduce the emphasis on examinations toward holistic education and student well-being have resulted in new parenting styles. In a survey of 1,500 parents conducted by the Institute of Policy Studies on their perceptions of Singapore's primary school system (Mathews, Lim & Teng, 2017), the researchers discovered three profiles: 29 percent constitute "old school" parents who want their children to focus on achieving good grades, 34 percent comprise "new school" parents who tend to prioritize holistic learning over academic achievement and want their children to pursue their passions and character building, and 30 percent of parents fit the "loving lion" profile where they want their children to focus on both academic results and holistic outcomes, such as soft skills and competencies.

IMPACT OF THE COVID-19 PANDEMIC

The COVID-19 pandemic posed many challenges to Singapore schools. During the "Circuit Breaker" period, schools were closed for two months. The MOE implemented remote learning at all schools to ensure that learning loss could be minimized. Referred to as Home-based Learning (HBL), teachers struggled with getting students to set up technological resources and protected spaces to continue their lessons, while developing lesson packages that could be taught remotely. Families with limited internet access or ICT equipment were at a disadvantage, with the MOE and schools providing laptops to students who urgently needed them. Post "Circuit Breaker," students taking national examinations returned to school for lessons. Other students went on a weekly rotation schedule alternating between physical classes and online ones. HBL was perceived to be successful in encouraging student self-directed behaviors and independent learning, and the MOE stipulated HBL should be a regular feature at secondary schools and junior colleges, using a blended learning approach.

A few points are worth noting. First, the system was able to adapt to the impact of the pandemic on the nature of schooling by switching to full HBL and subsequently blended learning. The centralized hub infrastructure facilitated the rapid deployment of technological resources to needy families, and MOE curriculum officers provided lesson packages on an existing ICT platform, Student Learning Space (SLS). Second, some curriculum innovations were made possible through ground-up initiatives by teachers in collaboration with the MOE and researchers. An important example is the use of Facebook by teachers during the "Circuit Breaker" period to form a self-help group called "SG learning Designers Circle" to share, learn, and design technology-enabled learning experiences for students. Currently standing at over 20,000 users, the group, including MOE curriculum designers and NIE researchers, work together to design and support HBL. The group continues to provide resources and advice on the use of SLS and how to leverage technology to enable holistic outcomes. Third, a plan to provide all secondary students with their own Personal Learning Device (PLD) was implemented, with all secondary 1 students to have PLDs by 2024 and all secondary students by 2028. The timeline for this policy initiative was pushed forward by seven years due to the pandemic. The rapid deployment and implementation of PLDs signal that the MOE has four different types of policy capacities (Woo, 2020; 2022): a) the required material capacity (especially financial resources to purchase PLDs for students); b) the operational capacity to implement PLDs in schools; c) the analytical capacity to recognize that this was an important opportunity to facilitate self-directed and independent learning among students; and d) the political capacity to convince the public of the importance of this initiative.

Finally, there was reinforcement of the importance of focusing on instructional quality throughout the pandemic and post-pandemic period. During the pandemic, the MOE introduced "SkillsFuture for Educators", a professional development roadmap for teachers to improve their pedagogical competencies and encourage lifelong learning. Six Areas of Practice were identified through research, teacher feedback, and in alignment to new system initiatives such as the FSBB and the PLD implementation: assessment literacy;

inquiry-based learning; differentiated instruction; support for students with special educational needs; e-pedagogy; and character and citizenship education.

teachers prepare students for high-stakes national examinations (Kwek et al., 2018). How this translates to student (and parental) stress and how it affects student well-being are in urgent need for longitudinal research.

Lessons for policy

SOME LESSONS FOR CONSIDERATION ARE LISTED BELOW.

1. Reform efforts in Singapore are very much a “work-in-progress.” This remains a journey as we seek to change from an entrenched and narrow purpose of education to a more balanced purpose that focuses on the holistic development of children. The MOE has continued to highlight that an academic focus on curriculum content and on acquiring foundational knowledge needed for the workforce is, and continues to be, essential as an educational outcome. However, they also recognize the need to expand educational outcomes.
2. The reform change process, however, has created two parallel educational infrastructures—one sanctioned and one informal. The official educational infrastructures continue to emphasize instructional quality toward holistic outcomes, even while a shadow educational infrastructure exists and is reinforced by other stakeholders, including parents, private educational providers, and book publishers. This is despite national policy narratives that sought to change societal perceptions about how education can lead to different forms of success. Further reform success requires not only working with parents, but potentially even parental interventions to redirect their drive to provide the best opportunities for children.
3. As such, there remains a paradox in Singapore’s education system—between academic outcomes and holistic outcomes—that can create incoherence in the system, depending on how a “system” is defined. NIE research has shown that students in the lower-primary and lower-secondary levels experience less examination stress and are given opportunities for more student-centred learning; pedagogies change toward more direct instruction in the upper primary and upper secondary as

Appendix: Methods

The case study draws on research literature on Singapore's educational development, document analysis of national policies, and extant theoretical understandings of education systems. The authors' involvement in Singapore's education research for close to two decades and one author's contributions toward research policy planning with NIE and the MOE have provided further insights for the case study. The study also draws on policy reviews conducted by the authors, including examination of assessment policies, curriculum innovations, and empirical pedagogical research that examined shifts in teaching and learning since 2004 in Singapore schools.

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