Title	Historical development of educational leadership in Singapore
Authors	Jeanne-Marie Ho and Thiam-Seng Koh
Source	Thiam-Seng Koh and David Wei-Loong Hung (Eds.), *Leadership for change: The Singapore schools' experience* (pp. 29-83)
Published by	World Scientific Publishing

Chapter 2

Historical Development of Educational Leadership in Singapore

Jeanne-Marie Ho and Thiam-Seng Koh

In this chapter, we share the journey of how educational leadership developed in Singapore from its infancy during Singapore's independence in 1965 to an education system that is internationally recognised as one of the top performing educational systems in the world. This context will help the reader to appreciate the wider environment under which the educational innovations described in subsequent chapters came about. As this is a relatively long chapter, for readers who are familiar with the historical development of educational leadership in Singapore, we recommend that it will be sufficient to just review Table 1 to obtain a quick overview of the developments for the purpose of appreciating the context of the educational innovations described in subsequent chapters.

INTRODUCTION

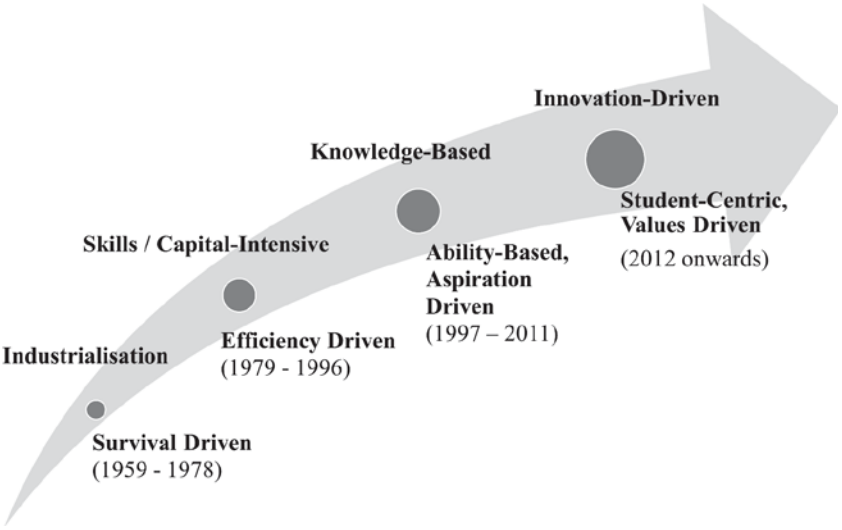
In sharing the story of the educational leadership development journey, we gathered information from a few sources. First, we drew on information found in the research literature written by our academic colleagues at the National Institute of Education and elsewhere and on political speeches by Ministers for Education in Singapore. Second, we drew on stories shared by our colleagues whom we had interviewed. They held senior leadership positions in the Singapore Ministry of Education and were directly involved in the development of educational

policies and the appointment of principals. We are very grateful to them for their generosity in giving their time to be interviewed. They are **Mr John YIP** (former Director of Education, 1987–1996), **Mrs Soon-Tze LIM** (former Director of Schools, 1997–2002), **Ms Jiak-Choo SEAH** (former Director-General of Education, 2004–2009), **Ms Peng HO** (former Director-General of Education, 2009–2015) and **Mr Siew-Hoong WONG** (current Director-General of Education, 2015–present). Finally, we also drew on our personal experiences as school leaders. For readers who are already familiar with the historical development of educational leadership in Singapore, we believe that this chapter will still be interesting to read as the historical development is being described through the personal voices of these senior leaders in education.

OUR HISTORICAL JOURNEY

In Singapore, the education of our people has moved in tandem with economic policies (Toh, 1979), with policy decisions in education closely intertwined with Singapore's priorities in nation building and economic development (Bush & Chew, 1999; Tan, 1986). From our independence in 1965 to the current phase, despite differences in focus and nuances, the essence of the objective of our education has remained the same and "simple. It was, and is, to educate a child to bring out his greatest potential, so that he will grow up into a good man and useful citizen" (Former Prime Minister Kuan-Yew Lee, in Goh *et al.*, 1979, p. iii). The educational phases aligned to Singapore's economic development are shown in Figure 1. The milestone developments of educational leadership in the four educational phases are summarised in Table 1.

Figure 1: Educational Phases Aligned to Singapore's Economic Development (Ministry of Education, Singapore)



Survival-Driven Phase (1965–1978)

The year 1965 witnessed the unexpected birth of a nation. With sudden independence, there was an urgency for education to produce the necessary skilled workers to support an export-led *industrialisation* that included attracting global multinational corporations to achieve industrial growth (Menon, 2015). In the history of Singapore's education system, the period from 1965 to 1978 was referred to as the "survival-driven" phase (Gopinathan, Wong and Tang, 2008, p. 241). The education system then was a complex mix of community-based schools that offered different curricula using different languages as media of instruction and based on values ranging from secular to religious, local to foreign cultures and various political ideologies.

Table 1: Milestone Developments in Educational Leadership by Educational Phases

Survival Driven (1959–1978)	**Efficiency Driven** (1979–1996)	**Ability-Based, Aspiration Driven** (1997–2011)	**Student-Centric, Values Driven** (2012 onwards)
▪ School management comprised the principal, senior assistant and teachers assigned specific responsibilities; only the principal was formally appointed by MOE ▪ Identification and selection of principals by MOE with the recommendations by school inspectors ▪ No formal preparation for principalship ▪ Ad hoc professional development for principals organised by school inspectors based on their own initiative	▪ School management comprised the principal, a vice-principal (VP) and heads of department (HODs) ▪ 1979: Introduction of VP position in primary and secondary schools ▪ 1984: Introduction of the HOD position in school ▪ 1980: The school inspectorate system replaced by the school appraisal system ▪ Identification and selection of principals by MOE based on the recommendations of the assessors involved in school appraisal	▪ School management comprised the principal, at least 1 VP, HODs and Subject Heads with support from Administration Manager (AM) and Operations Manager (OM) ▪ 1997: Introduction of the school cluster system with Cluster Superintendents, who were former principals, having oversight of 11-13 schools ▪ Early 2000: Introduction of non-Instructional Programme Head for discipline	▪ School management comprised the principal, 2 VPs or more, HODs, School Staff Developer, Year Heads and Subject Heads with support from AM and OM ▪ Identification and selection of principals is now systematic, structured and multi-dimensional, based on EPMS, LSE, LEP, etc. ▪ Clearly articulated pipeline for the selection of potential principals that begins with the assessment of teachers when they join the profession

Table 1 (*cont'd*)

Survival Driven (1959–1978)	**Efficiency Driven** (1979–1996)	**Ability-Based, Aspiration Driven** (1997–2011)	**Student-Centric, Values Driven** (2012 onwards)
▪ Evaluation of schools and principals by the school inspectors based mainly on proper financial management, implementation of MOE policies and the school's academic performance	▪ Alternative route to principalship for capable staff at the Curriculum Development Institute of Singapore (CDIS), which was set up in 1980 ▪ 1983: Launch of full-time management programme for HODs ▪ 1984: Formal training programme for principals and VPs including the launch of the Diploma in Educational Administration for school leadership	▪ 2006: Introduction of VP (Administration) and School Staff Developer positions in school ▪ Identification and selection of principals by MOE based on appraisal done by various people (principals, Cluster Superintendent, senior leadership at MOE including Director-General of Education & Permanent Secretary) and multiple measures ▪ 2000: Launch of Leadership Situation Exercise (LSE) for assessment of school leadership competencies	▪ 2014: Introduction of Leader Growth Model (LGM) as a toolkit for the personal growth and reflection of school leaders. ▪ Clearly articulated milestone programmes for school leadership preparation ▪ Well organised and resourced cluster system for professional support and collaboration among principals

Table 1 (*cont'd*)

Survival Driven (1959–1978)	**Efficiency Driven** (1979–1996)	**Ability-Based, Aspiration Driven** (1997–2011)	**Student-Centric, Values Driven** (2012 onwards)
	▪ 1995: Concept of Current Estimated Potential (CEP) introduced in the assessment of teachers to assess their potential to hold higher appointment including principalship ▪ Evaluation of schools and principals during an external appraisal exercise. Appraisers comprised MOE School Inspectors and Curriculum Inspectors	▪ 2001: Launch of Leaders in Education Programme (LEP) for school leadership preparation ▪ Cluster system provided peer professional support for principals ▪ 2002: Launch of Academy of Principals (Singapore) for additional professional learning and support for principals ▪ 2006: Establishment of the Education Leadership Development Centre (ELDC) within MOE to manage the professional development of principals	▪ Systematic provision of professional learning and development by ELDC and APS that includes, for example, sabbaticals and formal professional development programme after serving a tour of duty ▪ Evaluation of schools using a simplified SEM ▪ 2014: Removal of the Masterplan of Awards including Sustained Achievement Awards for recognition of school achievements

Table 1 (*cont'd*)

Survival Driven (1959–1978)	**Efficiency Driven** (1979–1996)	**Ability-Based, Aspiration Driven** (1997–2011)	**Student-Centric, Values Driven** (2012 onwards)
	▪ Schools could refer to a booklet with Guidelines on School Inspection which provided pointers and questions about the various aspects of school management & administration, instructional programme and student outcomes	▪ 2003: Phasing in of the competency-based Enhanced Performance Management System (EPMS) for the assessment of teachers, including principals ▪ 2000: Introduction of the School Excellence Model (SEM) for school evaluation (self-appraisal by schools with external validation once in 5 years) ▪ 2000: Introduction of the Masterplan of Awards including Sustained Achievement Awards for recognition of school achievements	▪ Recognition of schools with effective processes, practices and systems by Best Practice Awards (BPA) in 5 areas: (1) Teaching and Learning, (2) Student All-Round Development, (3) Staff Development and Well-Being, (4) Character and Citizenship Education and (5) Partnerships

To survive as a young nation, in which people were our main resource, there was a need to rapidly expand the provision of English-medium schools and move towards a national system of education to build a national identity. As Mr Yip observed "over time, parents found it was economically more viable to send their children to English-medium schools". This was achieved by the government building new schools, recruiting and training teachers who could teach in English.

At the school level, by 1966, there was a common national examination system for all language streams at the primary, School Certificate and Higher School Certificate levels. To enable control and ensure efficiency at the national level, both curriculum and assessment were standardised by adopting the British curriculum and the corresponding GCE Ordinary ("O") (at the end of Year 10) and Advanced ("A") Level examinations (at the end of Year 12) set by the Cambridge Examination Syndicate (Wee & Chong, 1994). At the primary school level, the Primary School Leaving Examination (PSLE) (at the end of Year 6) was implemented in 1960 (Teng, 2016). It was also a time of transitions and changes, particularly the transition from four streams (English, Chinese, Tamil, and Malay medium schools) to one stream, and one national system (Kumar *et al.*, 1987).

In 1977, Mr Sian-Chin Chua, the then Minister of Education, commented that "the importance of selecting the right persons to become principals cannot be overemphasised". He shared that the Ministry was devising a scheme, which included establishing the identification criteria as well as a development and training programme "to ensure a high rate of success when the appointments are finally made" (Chua, 1977). However, during the survival phase, when the focus was on the rapid expansion of schools, the re-training and training of thousands of teachers took priority. MOE did not have the luxury of time and resources to train potential principals before they were placed on the job.

Identification, Selection and Preparation for Principalship

From our interview of Mr John Yip, we understand that there was a "big shortage of principals" and many schools to run, particularly primary schools. Mr Yip recalled that he was a senior assistant for "just about a year, then I was taken out to become a principal". Ms Seah similarly observed that during the early years, there was no evident "pipeline" for school leadership. Singapore followed the British system then, which basically comprised teachers (known as assistant teacher in the UK system), senior subject teachers, senior assistants (an internal appointment but approved by MOE) and then the principal.

In the survival phase, the school inspector did not only appraise the school but also appraised the teachers in the school. Thus, the school inspector visited schools every year to observe the teachers. Mr Yip speculated that he became a principal "because I was not a bad teacher. I was perhaps more extrovert, able to talk". His understanding was that if "you are a good teacher, the inspector will look at you as a potential principal", noting the irony that in the end, "we [might] lose a good teacher, and get a lousy principal". Mr Yip also had the impression that principals were usually senior assistants before their appointment as a principal, and that there was an "age specification for principals: a secondary principal was supposed to be 45 while a primary school principal was supposed to be more than 45". Nevertheless, Mr Yip became a principal when he was about 31; similarly, Mrs Poh-See Hwang became the principal of the full school of St Nicholas when she was 33 although she described herself as an "ordinary teacher" before that (Lee, 2008, p. 10).

Mr Chiaw-Meng Lee, then Minister for Education, commented on the sad state of affairs during his time:

> *"We appoint serving teachers to be principals. There was no pool of personnel already trained in the art of school administration to draw from. These newly appointed principals had no idea of their roles and functions, the scope of their duties and responsibilities,*

> *neither were they familiar with the various administrative and financial procedures which they had to observe. They had to learn from scratch, the hard way, by trial and error, stumbling and faltering along the way."* (Lee, 1974a)

This lack of preparation was confirmed by Mr Yip who shared with us that he was told on a Friday, "John, on Monday, please go to Kim Seng Technical School" to run the school. Mr Yip shared that the handing over by the previous incumbent was "very simple: safe key, cheque book, petty cash". According to Mrs Lim who was appointed as principal of Anderson Secondary in 1976, she just "groped around". Fortunately, she knew the more experienced principal who was "next door", and she had prior experience as the vice-principal of a big junior college.

Professional Support/Development and Evaluation of Principals

When asked how principals were supported by MOE during the survival phase (1965–1978), Mr Yip quipped that if MOE did not disturb the principals, they were already happy. He shared that there were two associations in the late 1980s for English and Chinese medium principals, but other than that, "you were really on your own". Mrs Lim similarly observed that she had to figure things out on her own, such as how to bank in money every month.

When Mr Yip was asked how principals during the survival phase were evaluated, his reply was that he was not sure how the Ministry evaluated principals then, but he had the impression that what MOE was most concerned about was that there were "no complaints, your finance is kept well…your accounts are correct, your safe contains the amount of petty cash you said it would contain…results are good and consistent." However, "if you lose one cent, it's a crime". Similarly, Mrs Lim did not recall a "proper appraisal system" for principals, noting that she could not even remember who her school inspector was, though she remembered one inspector coming for "a chat".

With standardisation arising from national examinations (Primary School Leaving Examination, O-levels and A-levels), and the corresponding standardisation of the curriculum, this meant that school output could be easily measured and evaluated, albeit mainly in terms of academic performance. Pak-Tee Ng (2008c), in his review of the historical development of school accountability in Singapore, referred to this as the "standardisation phase" (from 1965 to the mid-1980s). In this standardisation phase, the ministry prescribed certain standards to be met, conducted an external review which was mainly summative in nature, and put in place system-level interventions to address issues raised. During the survival phase (1965–1978), the evaluation of principals was done mainly by individual school inspectors.

Efficiency-Driven Phase (1979–1996)

By 1975, Singapore's industrialisation efforts had paid off. Based on the statistics provided by the Singapore Department of Statistics, Singapore's per capita Gross Domestic Product at market prices in 2015 grew from US$516 in 1965 to US$2,559 in 1975 (Singapore Department of Statistics, 2015); in terms of absolute number, it was almost a 5-fold increase. To further drive economic growth, there was now a need for Singapore to move up the value chain towards more *capital-intensive* and *skill-intensive* industries.

By 1987, Singapore had a national education system with English as the first language (National Library Board, 2016b). However, the rapid expansion of schools during the survival phase that had enabled the Government to achieve high student enrolment to support industrialisation had also led to education wastage — drop-out rates were high. According to the Goh Report (1979), about 71% of primary school students passed PSLE. Of these 71%, 36% did not make the grade to 3 "O" Levels. Of the remaining 35%, only 14% enrolled for pre-university, of which only 9% passed the "A" levels. Thus, there was a need for education to become more efficient through streaming and a standardised curriculum for each stream (Gopinathan, Wong, & Tang, 2008; Heng, 2012c; Tan & Ng, 2007). On the economic front, there was a need to improve labour

productivity by moving into higher value-added industries, and by increasing the quality of trained manpower (Tan, 1980, 1986). As Dr Chiaw-Meng Lee, the Minister for Education then (Lee, 1974b) indicated, MOE had two objectives: "to eliminate educational wastage… and to meet the changing patterns of our Republic's manpower needs".

Identification, Selection and Preparation for Principalship

During the efficiency phase, the selection process was still largely informal in nature, with recommendations by MOE or by the principal (Singh *et al.*, 1987), to be endorsed by MOE. Principals were selected among high performing teachers in the schools or those in MOE Headquarters. In 1980, the school inspectorate system was replaced by the school appraisal system. As the external school appraisal was conducted by a team of assessors from MOE, Ms Seah shared that MOE could "tell [if] a certain head of department of a certain school has potential" and would provide them with "exposure" to principalship by appointing them first as vice-principals. Promising vice-principals were then surfaced as potential principals.

The setting up of the Curriculum Development Institute of Singapore (CDIS) in 1980 provided another route to principalship. Selected teachers were deployed to CDIS to work on curriculum development projects that produced resources to serve the needs of the students nationally. Teachers who performed well in CDIS or in other divisions in the ministry were surfaced to become principals (Chew, Stott, & Boon, 2003). That was the case for Ms Ho who was the Assistant Director for Humanities in the Curriculum Planning Division in 1994 when she was called up one day by her Director and told "Okay, I think it's about time you go to school as a principal". Ms Ho noted that in those days, there was "fluidity [in movement of staff] between school and HQ".

In 1982, when Mr Yip was Director of Schools, MOE invited the United Nations Development Programme to work with Singapore on how to develop the principal's professional competency (Wee & Chong, 1994). Mr Yip shared that MOE adopted a "two-pronged" approach: tapping

some inspectors and principals to train existing principals as well as working with the then Institute of Education (IE) to train potential principals. MOE started by training the principals who had been around for a longer time because "they need to change their attitude towards principalship", from an administrative role to being a "professional instructional leader…[who] leads in terms of curriculum". At the same time, to "develop a pool of potential principals", MOE worked with IE to develop a sponsored full-time one-year diploma in educational administration (DEA). The diploma, which began officially in July 1984, enabled the "standardising [of] school management know-how" (Wee & Chong, 1990, p. 49).

The diploma was designed to have a strong practical orientation with management theory related directly to practice (Walker, Chong, & Low, 1993). A unique feature of the diploma was that each participant spent 8 weeks full time in a mentoring principal's school. The mentoring principals, who were identified and appointed by MOE, coached their mentees to perform school leadership tasks, and to conduct Action Research projects in the school. They served as role models, and were also involved in the assessment of their mentees, together with a facilitator from the Institute (Bush and Chew, 1999; Walker, Chong & Low, 1993). Thus, it was an integrated approach which "brings together the expertise of government, higher education and practitioners" in the training of potential principals (Bush & Chew, 1999, p. 50). Indeed, the involvement of incumbent principals in the leadership development of potential and new principals is considered a major reason for leadership efficacy in the Singapore school's system (Ng, Nguyen, Wong, & Choy, 2015b).

Feedback on the mentoring experience was positive for both mentors and mentees (Coleman, Low, Bush, & Chew, 1996). There was reciprocal learning with the further benefit of systemic renewal (Low, Chong, & Walker, 1994) as experienced principal mentors shared their tacit knowledge, skills and experiences with potential principals, while the former and their schools benefitted from the mentees' new perspectives and ideas. For mentoring principals, it served as a platform to reflect on

their own leadership, and enabled them to update their knowledge of management theories (Walker, Chong & Low, 1993; Low, Chong & Walker, 1994).

In 1983, MOE also launched a full-time management programme for Heads of Department (HOD), a position which was piloted in 1983 (Lim-Chan, 2006). In our interview with Ms Seah, she noted that "once we have HODs, then we have a way to look at who can become school principals". Similarly, Mr Wong referred to "this whole step ladder that allows us to identify and groom people — the story starts with HODship — then, through our [centralised] ranking system…identify all the top HODs for consideration". He further noted that the HOD role is a "clever mix of the teacher role with the administrative management role — and thus people who can manage the two roles well" are likely to be good school leaders.

Professional Support/Development and Evaluation of Incumbent Principals

It was only in 1979, at the beginning of the efficiency phase, that 123 primary and secondary schools were assigned vice-principals (Wee & Chong, 1994), while the post of Head of Department (HOD) for primary and secondary schools was introduced by Mr Yip, when he was Director of Schools, in 1984. This meant that principals were henceforth supported by a management team comprising a vice-principal and HODs. By 1989, 58 out of 140 secondary schools had appointed HODs (Lim-Chan, 2006). Over the years, in recognition of the growing complexity of leading a school, MOE increased the number of key personnel or middle management level posts to support principals so that they would have a strong middle management team (Ng, 2010), including the first non-Instructional Programme Head in the form of a Discipline Master in the late 80s.

During this efficiency phase, before 1984, professional development for incumbent principals and vice-principals was still mainly ad hoc in nature (Bush & Chew, 1999). Ms Seah remembered that when she was a

principal (1990–1993), her school inspector would occasionally get some of the principals together for sharing sessions. This more nurturing role of the school inspectors was aligned to MOE's commitment to change the role of school inspectors so that they would "no longer breathe down the necks [of schools]…[but] help schools identify problems, plan ahead, and to support them" (Goh, 1981, cited in Wee & Chong, p. 43). Mrs Lim, who was a senior inspector of schools in 1980s, shared that there was a move to change the role of inspectors to be "more collegial in helping the principals".

With respect to the evaluation of schools, in 1979, the Goh Report recommended the development of "group inspection" of schools, together with a self-appraisal programme (Goh, *et al.*, 1979). This revised school appraisal approach was put in place in 1980. The external appraisal was conducted once every 4 to 5 years by a team of inspectors from MOE, with 4 areas appraised: management of school, instructional programmes, extra-curricular activities and pupil welfare programmes (Wee & Chong, 1994). School appraisal remained mainly about reporting performance and conforming to standards, driven by MOE (Ng, 2008c, 2013b). The main difference from the survival era was the move from schools being appraised by 'individual' school inspectors, to a more structured appraisal by a group of people. Mrs Lim recalled writing school appraisal reports, which were then typed using typewriters, resulting in a need to "type all over again" if there were changes that were necessary.

According to Pak-Tee Ng (2007), the mid-1980s saw a shift in school evaluation towards a phase of local accountability. A milestone event in 1992 was the introduction of school ranking, which consisted of the publication of schools' academic results, including schools which value-added to their students' results, in the press. Mr Teo, the then Minister for Education, referred to the ranking system as a "tool of accountability" at the local level (cited in Ng, 2013b). Ms Seah reflected on the pros and cons of this school ranking system. On the one hand, she was concerned that the ranking was a rather "stern rod [which] got everybody very focused on academic performance". On the other hand, she felt that "the

value-added component was very good" and not used in other education systems; it acknowledged the good work of specific schools which helped their students to achieve a marked improvement from their PSLE score to their "O" Level scores. In addition, she observed that the ranking system got schools that were doing very badly academically to "wake up to the task". The value-added component also enabled ordinary, mainstream schools like Xinmin Secondary and Boon Lay Secondary to "come to prominence, and their community was so happy".

Ability-Based Aspirations-Driven Phase (1997–2011)

By the 1980s, Singapore had become one of the leading newly-industrialised economies that was growing at a strong annual rate of about 10%. However, in the 1990s, Singapore began to face increasing competition, on one hand, from other developing countries that could manufacture at a lower cost and, on the other hand, from developed countries achieving economic growth that were increasingly driven by knowledge-based industries fueled by the discovery of novel ideas. Hence, Singapore pursued economic diversification by moving from manufacturing industries to *knowledge-based* industries such as technology, finance and services (Dimmock & Goh, 2011).

There was a corresponding need to develop manpower with the relevant disposition and skills to meet the challenges of this new knowledge economy, which placed a premium on knowledge and innovation. According to then Prime Minister Chok-Tong Goh, "Singapore's vision for meeting this challenge for the future is encapsulated in four words: Thinking Schools, Learning Nation (TSLN). It is a vision for a total learning environment, including students, teachers, parents, workers, companies, community, organisations and the government…The concept of Thinking Schools is central to this vision. Schools must develop future generations of thinking and committed citizens, capable of making good decisions to keep Singapore vibrant and successful in future" (Goh, 1997).

To develop thinking schools, which "will be sites of learning for everyone, including those who shape our educational policies", the then Prime Minister Goh announced that more autonomy would be given to schools, so that principals and teachers "can devise their own solutions to problems". (Goh, 1997). Pak-Tee Ng (2004) observed that there was a need for a more diverse educational system to cater to a diversity of student talents, with schools expected to lead in curricula and pedagogical innovations. With the TSLN vision came a slew of MOE initiatives, including the First IT Masterplan (April 1997) and the launch of National Education (May 1997).

In moving towards a more diverse educational system in the ability-based, aspirations-driven phase (1997 to 2011), Mr Chee-Hean Teo (2000b), the then Minister for Education, saw MOE's role as "setting the broad directions and guidelines, not detailed rules and procedures". For Thinking Schools to emerge, Mr Teo (2000b) noted that Singapore needed "dynamic principals to lead our schools so that they can make the best use of this autonomy." As such, principals were acknowledged to be the "key leaders" who would determine the quality of our education system (Teo, 1998) and their development and deployment was "too important to be left to chance" (Teo, 2002a).

Identification and Selection for Principalship

A "rigorous system" was put in place to identify school leaders, who "go through a careful selection process which involves the top management in MOE HQ, including the Director-General of Education, the Permanent Secretaries, and other MOE Directors" (Teo, 1998). Ms Seah reflected that the selection process was "formalised" and commented that unlike earlier phases, with some rare exceptions, "you don't see someone popping up to be a principal without being a vice-principal previously or without attending the formal training for potential principals."

Near the end of the efficiency-driven phase, in 1995, MOE introduced the concept of current estimated potential (CEP) to assess an officer's capability to assume positions of higher responsibility in the future,

including becoming a principal (Chew, *et al.*, 2003). The CEP is a Civil Service wide assessment measure of leadership potential which was adapted from Shell Petroleum's assessment of their employees' leadership potential. A teacher with a high CEP generally performed better compared to peers holding the same grade of job. A valued capability is the teacher's intellectual capability and what is referred to as 'helicopter qualities'. School leaders and key personnel are involved in appraising the teachers in their schools.

With the implementation of the cluster system in 1997, the cluster superintendents, who have oversight of 11–13 schools, are also involved in the appraisal process. Their involvement helps to ensure some level of consistency of appraisal across schools (Chew *et al.*, 2013). The cluster system further enables the cross ranking of HODs and school leaders (both vice principals and principals) across all the clusters. Mr Wong observed that because the "whole appraisal system is centralised", the CEP concept "is very instrumental in allowing the system to pick people up", to groom them as key personnel and eventually as school leaders.

Mr Teo, the then Minister for Education, shared that "There is no one mould from which we look for potential principals…All officers (*teachers*) who meet our stringent selection criteria…are appointed principals." (Teo, 2000b). He elaborated on the qualities that MOE looked for in a principal:

- Solid track records
- Proven management abilities in schools/in MOE HQ
- A desire and commitment to develop students to their full potential
- The ability to grasp the new challenges facing education and to develop effective programmes

At our interview, Ms Seah agreed that the principal is the most important person in a school, and that "we must have a good principal…because without a good principal, we cannot have a good school. We can have a bad school which needs a good principal. That's how a bad school can turn around". Thus, she observed that, at MOE, "both the administrative

and the professional side" were "thoroughly committed to finding the right person": to "find the right person, to train the person, to sustain the person, to post the person to the right school". Ms Seah shared her personal take on what she looked out for in a potential principal:

> *"When we select leaders,…we are looking for people who take the initiative in whichever position they are in to bring whatever resources they have to improve a situation...I am always looking for a person who can be left alone to improve a situation — because if the person cannot do this when left alone, then we are in a bad state — then we won't get improvement. I like the person [who] is able to in a savvy way hit the nail on the head to make improvements…Then the system can leave things to the principal."*

Besides the time and effort invested in the selection of potential principals through the involvement of cluster superintendents and top management in MOE HQ, Singapore further invested in a Leadership Situational Exercise (LSE). LSE is a 2-day simulation exercise (Teo, 2000b) in which participants are provided with a scenario (non-education related), and they have to develop and present a strategic work plan to sell their proposed strategies and action plans. Participants also have to deal with various 'stakeholders' who present different grievances and agendas. At the end of the simulation exercise, participants must respond in writing to various professional scenarios. After the exercise, each participant is provided with a 'report card' of their strengths and weaknesses in various leadership, managerial and administrative competencies, such as service orientation and communication.

When asked for the motivation behind LSE, Ms Seah noted that it provided "a more objective way of finding out a person's skills"; it provided "another dimension" of a person, allowing for "triangulation". She observed that "if we use different instruments and different assessments, you will get a more comprehensive, fuller and deeper picture" of a person. In choosing a principal, Ms Seah shared with us that it is important to know the person's weaknesses, and be careful that these

do not become "derailing factors" in a crisis. She stressed that LSE was "not the last word", not a "be all and end all of the person's standard and quality of leadership". If a person's LSE score is on the low side, it does not mean s/he has no chance to become a principal — the score will be triangulated with other data which MOE has on this person. Reflecting on changes in the selection process over the different phases, Ms Seah observed that MOE has "shifted from fewer to more ways", with "more data points" and "different dimensions", thus providing a "fuller picture of who this person is". She felt that human judgement is still very important, but it is good to involve more people and have access to more data points.

In 2011, the then Minister for Education, Mr Heng, echoed what his predecessor, Mr Teo said in 2002, that in Singapore, we do not leave the development of school leaders to chance. Mr Heng observed that we have "a robust system for leadership development to groom education officers with high potential into school leaders." (Heng, 2011b). If every school is to be a good school, every leader needs to be an inspiring leader.

Preparation for Principalship

When Thinking Schools, Learning Nation (TSLN) was launched in 1997, the then Minister for Education, Mr Teo, observed that under TSLN, with more autonomy devolved to schools, the principal had to be more than just skillful at administrative and executive functions. A thinking school "seeks creative solutions to its own unique local problems", which demands "a different kind of school leadership…strong leaders with clear direction and who set firm parameters." (Teo, 1998). There was a need to develop "a new breed" of "forward looking" school leaders (Ng, 2004, p. 21) who possess an innovation mindset, can challenge their existing mental models, and move beyond mere compliance (Walker *et al.*, 2003). When asked for her personal take on what she looks for in a principal, Ms Ho observed that from TSLN onwards, it became more important for school leaders to have a vision and to be able to derive strategies to work towards that vision.

Launched in 2001, the Leaders in Education Programme (LEP) was once again the outcome of an 'integrative' partnership between MOE and the National Institute of Education (Capra, 1996, in Walker, Stott, & Cheng, 2003). It is a 6-month full-time full-pay course, which selected vice-principals and ministry officers attend to prepare them for school leadership (NIE, 2013b).

When asked how LEP was different from DEA, Ms Seah noted that in the earlier phases, you need at least to be able to "administer" a school — that was "basic". However, once "we have a way to select leaders who are already quite strong administratively, then LEP is about having them break the boundaries, introduce freshness, introduce innovations." Ms Seah commented that being able to innovate was critical in the kind of economy that Singapore wanted to develop, one where Singapore is leading by continuing to innovate. When asked a similar question, Mr Wong observed that it was a move from training school leaders to be administrators to training them to be able to envision, and to be able to think and plan strategically.

Mr Teo, then Minister for Education, in his speech at the 1st LEP Graduation Ceremony in October, 2001, told the graduates that "innovation was the key emphasis of the programme that you have gone through" (Teo, 2001b). Pak-Tee Ng (Ng, 2004, 2008a) indicated that the central themes guiding LEP are knowledge creation and innovation, and the aim is to develop "visionary" and "futuristic leaders" who can continuously innovate to "develop schools for tomorrow" (Ng, 2004, p. 22). The programme content includes systems thinking, organisational learning, and dealing with complexity (National Institute of Education, 2013). Participants were exposed to how schools, government agencies and industries generate and manage innovations and change, both locally and overseas through an opportunity to visit other countries on a 2-week fully sponsored trip.

To cultivate an innovative mindset, a signature project of LEP was the Future School Project, introduced in 2004 (Ng, 2008). This project, undertaken by participants as a group, required them to scan future

trends, create a futuristic vision, and design a plausible futuristic school which addresses societal and students' needs in 15 years' time (Ng, 2004; 2008). One key objective of the project was to enable potential principals to develop the strategic skill to do 'futuring', which Pak-Tee Ng (2008a) defined as "deciding how to ride the crest of [future] waves" (p. 244).

At the same time, while innovation was important, it was also deemed important that school leaders understood MOE's philosophy of education and the "conceptual underpinnings of our various education policies" (Teo, 2001b). LEP thus included a series of dialogue sessions with senior management in MOE, including the Permanent Secretary and the Director General of Education. As Ms Seah commented, while it is important to innovate, schools also cannot simply innovate "and do your own things"; school leaders still "need to know the bigger framework" as "certain things [like personnel] are centralised". Ms Ho similarly stressed that it is important for the LEP curriculum to be a "balance between looking at the future and making sure the present, how you handle the post, is important". Mr Wong highlighted that it is important to train school leaders so that they can perform both "purely administrative" tasks such as the financial processes involved in budgeting, and executive functions such as strategic budgeting.

Interestingly, the need to "strike a balance…between safe and innovative…[between] maintaining the academic standing of a school, for example, while managing to take a more creative, adventurous approach" was also highlighted by Dr David Ng, Associate Dean of Leadership Programmes in 2009 (Academy of Principals (Singapore), July 2009). In the same publication, he stressed the need for school leaders to "appreciate the connection between what he or she does in the school and its impact on the nation as a whole", to "understand the importance of bringing the school's direction into alignment with the nation's needs — economically, culturally and socially" (p. 6).

To date, LEP remains the key programme to prepare potential principals. A major change in the LEP design was the introduction in 2010 of the

Creative Action Project (CAP), which replaced the Future School Project. In the case of CAP, it involves participants proposing and working on a "value-adding change" in their attachment school (NIE, 2013b, p. 5) while the Future School Project was mainly a mental exercise since there was no school in which to trial the ideas. Also, the latter was a group exercise while CAP is designed and implemented by individual participants. The school chosen for each participant is deliberately different from the participants' own context so as to challenge participants and provide them with fresh perspectives (Ng, 2013a).

The LEP participants have to envision what their attachment school would be like in 10–15 years' time, convince and work with the school staff to prototype a key component of their future vision. This is challenging since the LEP participants are not official leaders in their attachment schools, and they are not familiar with the staff. LEP participants learn how to do futuring, which involves them scanning horizons and exploring trends, and how to contexualise and adapt their long-term vision to the specific needs of their attachment schools (Ng., 2013). The CAP expects LEP participants to do the same balancing act which they need to do as potential principals (Ng, 2016), to "strike a balance…between safe and innovative…" (Academy of Principals, 2009, p. 9). A previous LEP participant reflected on her enriching CAP experience:

> *"When would I ever again have the chance to use another school as playground, to learn, to field test a project without the day-to-day demands of being a school leader? For this reason, my project 'Growing Leaders' was my adventure; an adventure that I hope will create ripples in the development of students in Yuhua."* (Janis Koh, in Academy of Principals (Singapore), January 2009, p. 5)

Beyond the LEP programme, graduates from the same LEP cohort remain in touch with one another, forming a fraternity or a professional and personal network that they can tap on for support. Thus, Mr Wong

noted that the LEP is "very powerful for the period of time when they [the participants] are together, but also very powerful for the after effects".

Professional Support/Development of Incumbent Principals

The increase in key personnel posts in the previous phase was complemented by more administrative support. The role of Administration Manager was created in 1996, and the role of Operations Manager in 1998 (Teo, 2000a). Over the years, there has been an increase in the quantity and job scope of middle management, to include a School Staff Developer (SSD), two Year Heads to see to the needs of specific cohorts of students across subject areas, and two vice-principals in most of the schools.

In 1997, at the beginning of the ability-based, aspirations-driven phase (1997–2011), MOE piloted the school clusters as another key support structure. In the cluster structure, a cluster superintendent oversees and supports a cluster of about 11–13 schools. In explaining the role of school clusters, Mr Teo (1997), then Minister for Education, positioned school clusters as "yet another important step in nurturing the culture of "Thinking Schools". School clusters were a strategy to devolve greater autonomy to schools, within a culture of collaborative decision making, to enable schools to "be more innovative and creative in providing education to their students" (Teo, 1997). Ms Seah saw the school cluster as a "formalised way to "circulate ideas" — "they meet, they have a board, they have money". Ms Ho agreed that the cluster system was very helpful because principals could "listen to one another…learn a lot just from listening to how others were running their schools". Ms. Ho also shared how the cluster system provided principals with emotional support, citing the Sabah earthquake incident in 2015, when a primary school lost several students and teachers (National Library Board, 2016a). She shared that the cluster principals "rallied around the principal [concerned] and provided support". In his interview, Mr Wong similarly highlighted the role of the cluster system as a platform to develop HODs, vice-principals and principals through "the support, the

mentoring, [and] the opportunities to discuss professional issues with one another".

When it was first implemented, there was much discussion and calibration of the cluster system, to ensure that the cluster superintendent did not end up being a "super principal". Mr. Wong stressed that the cluster structure was not meant to be a suprastructure with more authority than the school, because "the school as the unit of management, administration and delivery of education still remains key". The role of the cluster structure is to provide a "light cover that provides all the more invisible, more professional aspects", to support the following:

> *"…the building of the principal fraternity that is so fundamental when we talk shop and share value systems, and become socialised into what it means to be a principal, the kinds of expectations…"*

The cluster superintendent's role involves facilitating collaboration and the sharing of resources and good practices amongst the schools in their clusters (Dimmock & Tan, 2013; Gopinathan, *et al.*, 2008). These cluster superintendents are senior and experienced principals who are expected "to seed new ideas, share good practices and serve as examples for their colleagues…to emulate" (Teo, 1998). In our interview with Ms Ho, she shared the example of one "well-loved" superintendent who knew "when to come in to provide advice, and when to literally be in the background…it was a presence that was reassuring, not interfering and non-intrusive". Cluster superintendents, while serving as reporting officers for principals, are simultaneously meant to be mentors, to be available if principals need advice and support.

Ms Ho observed that the cluster system was also designed to be a platform to "build…[MOE's] relationship" with schools, to help schools "understand the key issues…taking them [school leaders] into confidence" and seeking "the perspectives of school leaders as partners". Mr Wong described the cluster superintendent as the "point of nexus" between MOE and schools. In 1998, to further support schools on their

journey towards an ability-driven education, MOE initiated the annual work plan seminars as "key signposts...We come together, exchange notes and take stock regularly." (Teo, 2000a). From 1998 to 2000, school leaders, selected key personnel and MOE came together during the annual work plan seminars to discuss and figure out the whys, the whats and the hows of the ability-driven paradigm (Teo, 2000a). The work plan seminars are still run today, and they have evolved to involve more key personnel, with breakout sessions organised at the cluster level.

Director of Schools (DOS) meetings were initiated in 1997 by Mrs Lim Soon Tze, the Director of Schools then, to "make sure there is communication" with school leaders, both principals and vice-principals. Mrs Lim felt that the meetings were a "good forum to share problems, share ideas…get everything thrashed out.". She shared that when anything new was introduced, "[school leaders] can ask questions, and get a better understanding because they have to explain to parents". This was important as in the past, there used to be principals who said, "I don't know, you just ask the ministry, they introduced this — so we had to make sure they also take ownership for policy changes". DOS meetings were thus one way to achieve synergy and a common purpose at the systems level.

Initially, the meetings, held on average once a month during term time, were simply lecture theatre style. However, to support better communication, Ms Ho recalled that Mrs Lim decided to experiment with the "wedding table style [using] round tables so people could communicate". In addition, there was a deliberate attempt to bring together the primary and secondary schools, instead of holding separate meetings for each level, so that principals would have "the larger view of education".

Before 2002, principals could choose to join one of the following principals' associations — the Association of Principals of Primary Schools, the Singapore Secondary School Principals' Association, or the Singapore Educational Administration Society. In 2002, the three principals' associations amalgamated to become the Academy of

Principals (Singapore), or APS for short. Admiral Teo (2002b) noted that this was "a significant development for principals as a profession" and would help to "foster greater support, understanding, and a sense of fraternity and collegiality amongst school leaders" (Teo, 2001c). The aim of APS was to promote peer learning, networking and to tap on the tacit knowledge of principals (Academy of Principals (Singapore), 2011).

Indeed, a signature programme of APS is a peer-mentoring scheme initiated in 2007 for newly appointed principals, developed in collaboration with the Education Leadership Development Centre (ELDC) in MOE (Academy of Principals (Singapore), 2007). Beginning principals choose their own mentors, and the mentor-mentee pair set up their own schedule of mentoring. Mr Michael de Silva, the then Deputy Director of ELDC, saw this mentor-mentee scheme as formalising a system "where there could be an active transfer of this knowledge from one generation of principals to the next." (APS, July 2007, p. 10).

Mrs Belinda Charles, the then president of APS, explained that the mentoring programme is based on executive coaching, which "aspires to help individuals ask those kinds of questions about their own practice and the practices of others that enable them to best understand their own leadership style". (Academy of Principals (Singapore), 2007, p. 11). The programme, which today lasts for 18 months, is sponsored by MOE. The then Minister for Education, Mr Tharman Shanmugaratnam, expressed confidence that the programme would involve "two-way learning, with ideas and reflections being exchanged between experienced and new principals." (cited in Academy of Principals (Singapore), 2007, p. 13). His confidence is amply justified in the testimonies given by various mentors, suggesting that while the mentoring programme provided a form of support for new principals, it simultaneously served as a reflective platform for the experienced principals:

> *"The mentoring sessions have turned into sparring sessions where iron sharpens iron, allowing me to crystallise my own thinking and take on various issues".* (Tony Low, Kuo Chuan Presbyterian Secondary, APS, 2009, p. 14)

> *"It has helped me re-evaluate my position as a principal"* (Lak Pati Singh, St Patrick's Secondary, Academy of Principals (Singapore), 2009, p. 17)

Beyond LEP which focuses on potential principals, MOE realised the importance of enabling serving principals to "take a step back and re-look at their role as school leaders after each tour [generally 5–6 years] in a school" (Shanmugaratnam, 2004). From 2003, principals could apply for a sabbatical after their first tour as a Principal (Shanmugaratnam, 2006). This bears testimony to Ms Seah's conviction that "I think if there is one reason why Singapore succeeds it's because when we have a challenge, we tackle it through a multi-pronged approach, and the multiple prongs reinforce each other". The multiple prongs included training of a more practical kind. Thus, for new principals and vice-principals, there was in-service training on areas such as Human Resource, financial management and management of the media (Darling-Hammond & Rothman, 2011).

While APS was led by the principals themselves, MOE established an Education Leadership Development Centre (ELCD) in 2006 to provide resources to develop "top quality school leaders" (Shanmugaratnam, 2005a). Ms Seah spoke passionately about the need to "sustain incumbent principals" over their different tours of schools. She saw the role of the ELDC as "a place that keeps an eye on all the different aspects and tries to make sure they reinforce each other well", to ensure that the different training programmes, the tours that principals are sent on, et cetera, "dovetail nicely with things that are already in place". ELDC helps to "rationalise" what MOE has done for principals and provides an "overarching report". Today, ELDC oversees the coordination of leadership development for middle managers, vice-principals and principals, supported by the Schools Division in MOE and APS.

Finally, principals are deliberately rotated every 5–7 years, to a new school or to serve at HQ as cluster superintendents or as Deputy Director. This is an integral part of the leadership development process, which also contributes to the renewal of the education system by raising "overall standards in our schools, and ensure that high quality is not just

about a few schools" (Shanmugaratnam, 2007). Teo (1999a) observed that such movement "allows for renewal of ideas and gives fresh perspectives". Ms Seah noted that unlike systems where the senior assistant automatically becomes the principal, an "internal succession", in Singapore what was important "is that there must be freshness". To her, this explained why in Singapore we rotate principals rather than get the vice-principal of the school to succeed the principal. While she acknowledged that there are downsides to this approach, the "upside is that there is freshness" and innovation.

Evaluation of Schools and Principals

During the ability-based aspirations-driven phase (1997–2011), there was a need to continue to devolve autonomy to schools to encourage innovation. However, MOE was concerned that greater autonomy "is associated with responsibility for the educational outcomes" (Teo, 1997). Ng (2013) classified the mid-1990s and beyond as the phase of diversity and innovation in school quality assurance. In this phase, schools were expected to improve their innovation capacity, while remaining accountable for quality educational outcomes. There was thus a need for a standardised assessment tool which would enable schools to improve their internal quality assurance capacity through self-appraisal, while enabling MOE to ensure system quality across all schools through periodic external appraisals to validate the schools' self-appraisal (Ng, 2008).

In 2000, such a tool, the School Excellence Model (SEM) was introduced. Seah and Ow (Seah & Ow, 2003), who were involved in the development of SEM, explained that though there was already a self-appraisal component in the previous efficiency-driven phase, there was no common framework in use, resulting in uneven practice across schools. In addition, as there was no link then between self-appraisal and the external inspection conducted by school inspectors, schools were not motivated to do a rigorous self-assessment. SEM was a tool customised specially for Singapore schools though incorporating ideas from business assessment models, a "borrowing of what is already happening in the

wider environment". At her interview, Ms Seah shared that SEM was "about taking ownership — it's about the school taking ownership of its own pathway or journey to excellence". She viewed this as unlike inspection, which was "hoping to survive the final exam so to speak", a "summative judgement" which does not help the school know how to move on.

> *"Once we have a model, everyone has to work towards that model, but the point is this — you work towards it, you strive towards it — and after you have been told where you stand …, you tell yourself I can move up, I can do better. It's to put ownership and initiative at the school end — rather than it's about inspection, and to be concerned oh my school is going to be inspected this year, and so I try to sort things out to pass my inspection, and then if I pass, I am so relieved, and life goes on."*

Ms Ho shared that as a principal, it was "a very unnerving experience" when a school appraisal team visited her school. She expressed support for SEM as "it is about school empowerment, you take charge of your own school and when the [appraisal] team comes, it's just to validate, meant to be as unintrusive as possible". Similarly, Mr Wong observed that because SEM "does not dictate…[and] is a validation approach as opposed to a prescriptive approach", it represents a "certain philosophy of school autonomy" and recognises that the "principalship is so important".

SEM set out broad standards/performance indicators, which provided a notion of success "beyond a narrow focus on academic results" (Teo, 1999b). Like the philosophy behind business assessment models, SEM was designed to "allow for variations in approaches towards achieving outcomes" and required schools to "continuously question current practices" and "think of more creative and effective ways to deliver the desired outcomes of education", thus supporting the TSLN vision for thinking and innovative schools (Seah & Ow, 2003; Teo, 2002c). MOE set the strategic direction by spelling out in SEM the key performance areas and sample indicators, and monitored school performance through

periodic external appraisals to validate schools' self-appraisal, while facilitating schools to evaluate themselves and take responsibility for their own improvement (Ng, 2008c; Seah & Ow, 2003).

SEM was accompanied by a framework of awards: the Masterplan of Awards (Teo, 2000a). Teo (Teo, 1999b) observed that "as a first step in underlining our commitment to developing talents and abilities and broadening the notion of success", MOE would be giving out Sustained Achievement Awards (SAA) in five areas: the Arts, Sports, Uniformed Groups, Academic Value-Added and Physical Fitness. In the Best Practices Award, schools were also recognised for good SEM scores in the enablers category, sending the message that it was important for school leaders to put in place effective and sustained processes, structures and systems to bring about desired results. At the apex, there is a School Excellence Award to recognise overall systemic excellence, and schools may apply for the Singapore Quality Award. In alignment to the move towards a broader notion of success, the ranking of schools was changed in 2004 to be by performance band instead of by position (Sim, 2014). In addition to academic performance, the revised ranking also highlighted the schools' performance in terms of their value-add, as well as achievements in non-academic fields such as the arts and sports (Sim, 2014).

With the SEM and the Masterplan of Awards in place, there was now an objective and comprehensive framework to evaluate both the performance of principals and schools based on a broad range of indicators that were not limited to students' academic results.

Student-Centric Values-Driven Phase (2012–current)

Currently, Singapore, as with many other developed countries, is facing the prospect of slower economic growth, an ageing population, and disruptions to industries and businesses caused by relentlessly advancing technology (Ng, 2016b). In the 21st century, the economy continues to be one which is knowledge-based, with the focus shifting from simply adding value to creating value (Ng, 2015b). There is now a need to

encourage *innovation* to ensure that Singapore would continue to achieve economic progress. There are also challenges in Singapore's demographic balance due to changes arising from an increasing need for immigrants and a larger foreign workforce. As of end June 2016, Singapore had about 3.9 million residents, of which 0.5 million were permanent residents (Singapore Department of Statistics, 2016).

On the education front, Ms Ho Peng, the Director General of Education in 2014, observed that the "Thinking Schools, Learning Nation" vision, launched in 1997, "remains to this day the vision for the entire education fraternity" (Ho, 2014). Indeed, in our interview with Ms Ho Peng, she reiterated that TSLN was "fundamental to our educational success". A framework for 21st century competencies and student outcomes was developed to "better prepare our students for the future" (MOE, 2015). To address economic and social challenges, there was an emphasis on developing innovators and value creators with the "entrepreneur dare" (Ng, 2016b) and the "important national imperative" of nurturing our students to possess a strong Singapore heartbeat and sound values (Ng, 2015b).

In 2014, the Learning for Life Programme (LLP) and the Applied Learning Programme (ALP) were launched (Heng, 2014). These programmes were positioned as the creation of multiple pathways to cater to different student interests and strengths. The Minister for Education then, Mr Swee-Keat Heng, envisioned "niches of excellence in every school" (Heng, 2012c) with each secondary school being "distinctive" and having a "signature" ALP and LLP (Heng, 2013). This is aligned to MOE's directive to provide an education that is both broad and deep, and prepares students for life (Heng, 2013).

In alignment to MOE's focus on a holistic education, Mr Heng took the "bold" move of announcing on 12 September 2012 that school banding by academic results was to be abolished (The Straits Times, 2015). The practice of naming the top PSLE scorers was also stopped (Teng, 2016) signifying MOE's commitment to broaden the definition of school excellence and encouraging schools to provide a student-centric, values-

driven (Heng, 2011a) holistic education. Based on Mr Heng's conviction that every school in Singapore could cater to the needs of its specific student profile (student-centric), he urged all schools to work towards the vision of "every school a good school" (Heng, 2012a).

Identification, Selection and Preparation for Principals

By 2012, the identification and selection of principals had become a systematic multi-dimensional process that starts as early as when a beginning teacher joins a school. Under the Enhanced Performance Management System (EPMS), the assessment of a teacher's potential to be principal starts with a Head of Department/Subject Head assessing the Current Estimated Potential (CEP) of that teacher from the time the teacher enters the profession, with revisions to the CEP during the teacher's career, based on the performance of the teacher.

As far as the senior author can remember, as early as in the 1980s when he was a young teacher, teachers who are identified as having high potential are selected annually for scholarships to pursue postgraduate studies to expand their professional knowledge and experiences so that they will be able to assume higher appointments upon their return from postgraduate studies. These scholarships are for studies at top universities such as Harvard and Stanford in the US and the Institute of Education London, Cambridge and Oxford in the UK. The career journey and performance of these scholars are closely monitored to assess their suitability for school leadership, either as vice-principals or as principals, thus serving as another pipeline for principalship.

In preparing for principalship, there are milestone programmes that a teacher must attend; starting with the Management and Leadership in Schools (MLS) programme for Heads of Department and Leadership Situation Exercise (LSE) and Leaders in Education Programme (LEP) before assuming principalship.

In 2014, the Ministry introduced the Leader Growth Model (LGM), to serve as a toolkit for leadership development (MOE, n.d.), which is also

adopted by the National Institute of Education in its development of Heads of Department and school leaders. The LGM indicates the priorities for leadership in Singapore schools and is guided by the Philosophy for Educational Leadership in Singapore, which views leadership as anchored in values and purpose (NIE, n.d.). The model states six major domains of school leadership: (1) Ethical leader, (2) Educational leader, (3) Visionary leader, (4) Culture builder, (5) Change leader, and (6) Network leader.

Professional Support/Development of Incumbent Principals

A principal now operates within a well-organised and supported system. Participation in the cluster system and the LEP provide peer support. The Cluster Superintendent not only provides the principal with guidance in the implementation of MOE level initiatives but also acts as his/her mentor. The professional learning needs of principals are looked after by the Educational Leadership Development Centre (ELDC), the Schools Division which includes the Cluster Superintendents, and the Academy of Principals (Singapore). There are opportunities for principals to go on sabbaticals after each tour of duty, which generally lasts for 5–6 years.

Evaluation of Incumbent Principals

Although the Sustained Achievement Awards (SAA) in five areas (the Arts, Sports, Uniformed Groups, Academic Value-Added and Physical Fitness) broadened the notion of success beyond academic performance, they were still based on quantitative summative results, which provided only one perspective of performance. To further expand the definition of school excellence and to reiterate the importance of a student-centric, values-driven education, MOE removed school banding in 2012 and SAA in 2014 (The Straits Times, 2015). The focus on quantitative results was replaced by the Best Practice Award (BPA), which recognises schools for their effective processes, practices and systems that lead to good education outcomes in both academic and non-academic areas: in teaching and learning, student all-round development, staff development and well-being, character and citizenship education, and partnership.

While the ranking of schools has stopped, principals have access to data which indicates the value add of their own schools, which is still important in informing the principal if his/her school has met the academic needs of its particular cohort of students. In addition, principals have access to various data which provide a complete picture of how the school is performing in the key areas of student and staff development and well-being. These include the School Climate Survey (SCS) and the Qualitative School Experience (QSE), which provides respectively the perspectives of staff and students at individual schools and nationally across schools. The access to such data enables principals to conduct a thorough school self-appraisal and to compare their school's performance with other schools. Ms Ho Peng explained that the main reason HQ provides such data is for schools to "understand internal school processes" as "one of the roles of HQ is to help schools improve".

At the individual level, principals continue to be appraised under the Enhanced Performance Management System (EPMS), as are superintendents, key personnel and teachers. EPMS was introduced in 2003 (Teo, 2002c) and the competencies assessed are differentiated based on the three career tracks which MOE offers: leadership, teaching and senior specialist (Teo, 2001a). Teo (2002c) observed that with EPMS, MOE's appraisal of officers will be "more customised to the role they play", noting that for school leaders, "greater emphasis is given to their ability to provide visionary leadership".

Principals are appraised on both performance and leadership competencies. In terms of performance, the reporting officer considers processes and results in the following: vision for the school, strategic planning and administration, development and management of staff, management of resources and school processes. In terms of competencies, principals are appraised on nine main qualities as well as their 'helicopter' quality. The nine qualities include power of analysis, imagination, sense of reality, achievement motivation, political sensitivity, decisiveness, capacity to motivate, delegation and communication. Helicopter quality refers to whether the principal can view things from a higher vantage point and is able to exhibit systems thinking (Chew, 2003). Three additional qualities

which are considered are commitment to the job, integrity and teamwork. When we asked Ms Seah how MOE decides what makes a good principal, this was her reply:

> *"We formalised it like performance appraisal for those on the leadership track — all the criteria we put there are the things that we look for and also what we call the no go factors — like if we cannot trust you in terms of integrity, you are out, we don't care how good you are in terms of other things — all these documents [e.g. the EPMS form] would indicate that these are the values."*

In our interview with Mr Wong, he highlighted intellectual capacity as a key characteristic, "whether people can think at a higher level", and the capacity to lead people, "whether one has the capacity to work with people, able to influence people in a way that is positive". Mr Wong explained that as principals are provided "with a certain level of autonomy", the "requirement for principals to be strong thinkers becomes something that is prized". At the same time, principals need a level of strategic thinking which enables them to "understand all the national imperatives and be able to develop a strong professional take about what the school needs, and how to move the school forward… how to plan the leadership and curriculum instruction".

When asked if principals know how they are evaluated, Ms Ho observed that principals "should know what standard they are held against", particularly since their reporting officer, the Cluster Superintendent, walks the principal through and shares "objectively what they see as your strengths and your areas of improvement".

The Cluster Superintendent, who is the main reporting officer under the school cluster system, also assesses the principal's current estimated potential (introduced in 1995) and his/her likelihood of being appointed to the next higher level, such as that of a divisional director in HQ. Another key role of the Cluster Superintendent is to plan for the principal's development in the next 3 years and beyond. Thus, appraisal is linked to development. After the individual assessment of principals by their

respective Cluster Superintendents, all the Cluster Superintendents would come together, with the Deputy Directors of the Schools Division and the Director of Schools, to discuss, calibrate and cross-rank the principals across schools. This is to ensure "uniformity of standards" (Chew, 2003, p. 38).

CHALLENGES

Era of Transitions, Expansion and Centralisation

During the survival phase, Mr John Yip remembered that when he was a school principal, principalship was "complicated by the fact that some principals had to run schools which had two or even three (*language medium*) streams", known as integrated schools. For Mr Yip, his role was further complicated as he had to run a big school with an enrolment of 3027 that was both integrated and bilateral: New Town Secondary (New Town Secondary School, 2017). A bilateral school was both an academic school and a vocational school. It was during a phase when the Ministry was keen to "promote technical education, to promote the dignity of using one's hands". This meant that Mr Yip had to report to two masters in MOE: the General Education department and the Technical Education department. The "three-dimensional increases" in the principal's burden in running a school was acknowledged by Inche Sha'ari Bin Tadin, then Parliamentary Secretary to the Minister for Education: from a one-language stream to a bilingual or trilingual school, schools having two sessions instead of just one, and a two to three-fold increase in the enrolment of students (Bin Tadin, 1972).

Although the Ministry acknowledged the important role of the principal in "moulding" the school environment (Lee, 1972), the rhetoric from MOE positioned the principals as "key digits in the system", as "ground contact and executive agent of the ministry" (Lee, 1972). During the survival phase, the principal's role appeared to be mainly one of implementing policy, providing feedback, and "exercising supervisory responsibility on behalf of the ministry" (Lee, 1972). Indeed, the then

Permanent Secretary and Director of Education in 1972 observed that "principals generally felt that they were not given a free hand to run their schools: there was too much centralised control by the Ministry, too much bureaucracy, too much paper work, too much red tape." (Wee & Chong, 1994, p. 40). This observation was supported by the 1979 Goh Report, which acknowledged that MOE took a long time to formulate plans, did not consult principals sufficiently, and gave schools little time to implement policies (Goh, *et al.*, 1979). In general, there was a lack of communication between MOE and school principals, while the role of school inspectors was perceived to be mainly one of appraising schools.

At the ground level, principals felt that they were "bogged down with administrative work" (Chua, 1978) and supervising routine tasks (Wee & Chong, 1994), instead of spending time on instructional leadership. Although Mr John Yip acknowledged that the principal "could do a lot of things", particularly with the curriculum, he nevertheless felt that principals then had "very little authority" and were "basically a maintenance man". He felt that he would generally not use the word leadership to describe what principals did during the survival phase as basically, their main role was to "run the school", to mainly manage rather than to lead the school.

MOE's Calibrated Move towards more Autonomy

What was heartening was that MOE was able to conduct an honest internal appraisal, as evident in the 1979 Goh Report (Goh, *et al.*, 1979; Toh, 1979). There was a growing realisation that the ministry had "grown too large and…had lost contact with the ground"; there was also concern that the high degree of centralisation had resulted in some principals settling "into a state of inertia, activating themselves only upon the receipt of instructions" (Lee, 1974a).

Near the end of the survival-driven phase, changes were initiated to reduce the degree of centralisation and provide more space for schools to innovate, given "rapid changes which are now taking place in the field of education" (Lee, 1970). In 1975, with the standardisation of administrative

and financial procedures and processes, captured in a revised school funds instruction manual, principals were given the power to "employ more freely their funds in the interests of their pupils" (Lee, 1974a). Mr Chiaw-Ming Lee, the then Minister of Education, also announced the issue of a principal's handbook to "cut down dependence on the Headquarters and provide principals with a ready source of information on all matters relating to their duties and responsibilities" (Lee, 1974a). In addition, to provide support to principals in the "routine administration" of their schools, beyond the one clerk the schools had, MOE created an Executive Office post with the functions of a registrar (Lee, 1972).

Beyond the provision of handbook and manuals, Mr Lee assured principals that the Ministry would not entertain any anonymous complaints; instead, these would be referred to the principals for their information (Lee, 1974a). This was an important assurance because even in the early days of our education system, Mr Yip shared that "we were all firefighting all the time, firefighting with complaining parents and sometimes with people who don't give their names...[there were] lots of anonymous letters". Mr Yip observed that "those were the days when PAP (the People's Action Party) first came in and they needed to take care of these complaints. Complaints were not ignored; they were actually investigated, even anonymous complaints." While Mr Yip acknowledged that some of these complaints were valid, he understandably felt that MOE should "throw away" anonymous letters. Symbolically, in referring anonymous letters to principals for their follow up, MOE was sending the message that principals were trusted, which boosted their morale.

There were also various efforts to involve or consult principals in decision making at MOE level. In 1974, the first batch of 12 principals were attached to MOE Headquarters, to enable them to better understand MOE policies and procedures (Lee, 1974a), and to act as "liaison officers between the schools and ministry" (Lee, 1973). In the late 1970s, there was also more effort to consult principals as well as teachers on professional matters and to bring them into MOE's decision making process (Chua, 1977, 1978). Recognising that the tight centralised control during the survival phase had resulted in "the cult of obedience",

the Schools Council was set up in 1981 to enable selected principals to participate in "a unique experience of mass involvement in the management decision making process" (Goh, 1981, cited in Wee & Chong, 1990, p. 48). Ms Seah remembered that "one of the key innovations" was that the proceedings were broadcast to the public.

More importantly, acknowledging principals' frustrations with the "power" of the school inspectors, the Ministry reviewed the role of school inspectors, to change the role to "something more acceptable — perhaps school advisors" (Lee, 1972). In 1974, Mr Lee announced that the Ministry was considering "decentralising the inspectorate of the primary school section" (Lee, 1974a). This was the beginning of a gradual and deliberate move towards greater decentralisation over the next few phases.

Tensions in Decentralising within a Centralised System

While the move was towards decentralisation and more autonomy for principals during the efficiency phase (1979–1996), there was a tension in that the more complex education system with academic streaming meant that principals "had to act as efficient implementers in a [still] highly centralised system" (Gopinathan *et al.*, 2008, p. 244). A 1987 Report, "Towards Excellence in Schools", noted the Minister's acknowledgement that Singapore's education system was still a "highly centralised one", with the consequence that "schools tended to develop into stereotyped units…it was hard to tell one school from another" (p. 2). The same Report indicated the continued existence of red tapes and bureaucracy. Gopinathan, Wong and Tang (2008) compared the principal during the efficiency phase to "a plant manager" to "ensure processes & standards established by MOE were adhered to" (p. 244). In addition, MOE issued a 252-page Principal's Handbook, which enabled principals to independently run the school but was simultaneously a means to ensure compliance to standardised processes and procedures (Dimmock & Goh, 2011).

Despite the intent and the rhetoric, and the enlarging of the principal's roles (Chong & Low, 1991; Wee & Chong, 1994), there was still tension experienced by principals in needing to align to MOE's directives while enacting school autonomy, perhaps explaining why principals experienced role ambiguity (Wee & Chong, 1994). Were principals CEOs (Bush & Chew, 1999; Ng, 2004) or line managers and officers for MOE? (Dimmock & Goh, 2011; Gopinathan, *et al.*, 2008). Or perhaps it was a balancing act between the two roles?

Breakthrough in the Move towards School Autonomy and Innovation

A breakthrough during the efficiency-driven phase came in the form of the 1987 Report, put together by 12 principals who were sponsored by MOE to visit 25 schools in the United States of America and the United Kingdom to identify factors that make an effective school. Dr Tony Tan, then Minster for Education, noted that "So far, in seeking to achieve excellence in education, the initiative has generally been taken by the Ministry of Education. Principals and teachers are often implementors of government policies rather than initiators." This Report is a "break-through in fostering educational innovation at the school level" (cited in Goh *et al.*, 1987). Based on the report's recommendation, between 1987 and 1995, a small number of independent and autonomous schools were set up to encourage ground-up initiatives within broad educational policies (Bush & Chew, 1999, p. 44).

Although the 1987 Report is normally associated with the launch of independent schools, it is arguable that the report planted the seeds for further decentralisation in general, by recommending greater autonomy for principals to develop educational programmes and appoint teachers to positions of authority. The report also argued for single session schools, beginning with secondary schools, to enable more flexible time-tabling and a more creative use of physical resources. In 1989, the Fourth School Building programme was launched to develop these single session schools, which Tan (1987) noted would require principals to have the "resourcefulness & imagination to exploit the opportunities that become

available in the single session system" (Tan, 1987). Today, all secondary schools and most primary schools are single session schools (National Library Board, 2016a).

In the late 1980s, more autonomy was given to schools to foster creativity and innovation (Yip, Eng, & Yap, 1994). While the report supported more autonomy for principals, it nevertheless recognised the need for schools to be "subject to the requirements arising from national considerations as well as an understanding of the place of national examinations" (p. vi). School leaders were given greater autonomy to run their schools, as long as they operated "within the framework of national educational policies" (Bush & Chew, 1999, p. 44). Ng refers to this state of affairs, in which the Ministry sets the overall direction and guiding policies, and schools develop signature programmes to align to MOE's directives while meeting the needs of their students, as the paradox of centralised decentralisation (Ng, 2017), in which there is simultaneously "strategic alignment" and "tactical empowerment" (p. 76).

Constant Balancing Act

To enable the strategic vision of Thinking Schools, Learning Nations, a slew of initiatives were launched, with two major initiatives in 1997 alone: IT Masterplan 1 (April) and National Education (May). The result was a "buffet spread" of educational initiatives, requiring principals to be able to prioritise and make decisions about "the most appropriate diet which best meets the needs of their student population and capacity of their staff" (Teo, 1999b). Teo (2002b) acknowledged that the "job of a principal today is definitely more challenging than before", and the greater autonomy comes with greater responsibility to make the right decisions and balance demands from various stakeholders, including MOE (Teo, 2002a). For Mr Wong, a key milestone in recognising the "key" role of the principal was the Ministry's elevation of the position of principal to the superscale grade. Before the principal's position was pegged at superscale grade, only senior leadership positions in the various Government Ministries were pegged at superscale grade.

During the ability-based aspiration-driven phase, and continuing into the student-centric, values-driven phase, the main challenge facing principals is retaining the "rigorous standards of the past while embracing diversity and innovation" (Ng, 2008c). While the rhetoric of MOE stresses the importance of schools innovating in education and providing a holistic education, the importance of academic performance underlies much of what is said:

> *"Whichever way we cut back and redefine the curriculum, we will ensure our students retain mastery over the core knowledge and concepts that give them the basis for further learning. We must also retain the high standards needed to stretch all our pupils and keep them striving for excellence. Whatever we do, we must not abandon these fundamentals. We must not level down"* (Goh, 1997).

> *"Schools seeking to become Autonomous Schools must have in place a system that has demonstrated the ability to achieve sustained good academic results. Beyond academic results, the schools must also have a well-rounded education programme…"* (Teo, 2000b).

> *"However, I wish to underscore that while we seek to broaden notions of success, and develop and recognise achievements in different arenas, academic achievement continues to be important"* (Teo, 1999b).

These high expectations of MOE are accompanied by the increasing expectations of parents for both a holistic education and good academic results (Stott & Low, 2000). While schools are tasked to move towards quality in teaching and learning, "many parents have been used to a quantitative measure of academic success" (Ng, 2008b, p. 13). During the ability-driven phase, school ranking was still in place, with academic performance as the main criteria. Today, although official school ranking has been removed, there are plenty of online sites and social media networks which continue to provide their own ranking of schools

(Salary.sg, 2017; Singapore Learner, 2017) with cut off points for secondary schools and junior college as the main criterion, suggesting that Singapore society still puts a premium on academic achievement.

Thus, principals are "stretched in multiple directions" by different stakeholders, as acknowledged by the current Minister for Education, Mr Chee-Meng Ng (2016a). Principals face long hours, unpredictable days, and expectations to perform both as pedagogical and transformational leaders (Academy of Principals (Singapore), January 2010; Ng, Nguyen, Wong, & Choy, 2015a). The Best Practice Awards suggest that principals need to play multifaceted roles, in order to sustain achievement in student learning, teacher engagement, and organisational effectiveness. Indeed, Mr Heng, then Minister for Education, outlined five roles that a principal needs to fulfil to be an inspiring leader: leading learning, leading people, leading culture, leading change and also leading nationally (Heng, 2012c, 2014). The ministry is aware of the principal's "heavy responsibility" (Ng, 2015a); nevertheless, there is a need to keep a pulse on the well-being of principals, or principalship might not be sustainable (Ng, 2015).

The tensions, which arise from efforts to enable decentralisation within a centralised system, have persisted till the current day. The cluster structure, while serving as a source of professional support for school leaders, also serves as a way that MOE maintains control over the implementation of policies and educational initiatives. Mr Heng acknowledged that the cluster structure works both bottom-up, with more autonomy given to schools to innovate, and top-down, with the Cluster Superintendent ensuring that policies are implemented in schools "in line with the policy intent" (Heng, 2012b). The scope of autonomy that schools have within Singapore's centralised education system is mainly in terms of setting their own vision, mission and values, strategies and action plans for implementation of both school and national educational initiatives, discretion in admitting a small percentage of students, and in choice of pedagogy and formative assessment (Toh *et al.*, 2016). With respect to pedagogy, local research on existing pedagogical and assessment practices suggests that the dominant practice in schools still mainly caters to

achieving good results at the high stakes national examinations for the sake of the students (Luke *et al.*, 2005 in Dimmock & Goh, 2011).

MOVING FORWARD

A key strength of Singapore's education system is our ability to constantly and honestly assess our performance and to discuss, in consultation with schools and key stakeholders, how we can continue to do well. Although Singapore has consistently been amongst the top countries in global school rankings (Goy, 2015; Ng, 2015), our current Minister for Education, Mr Chee-Meng Ng, noted the need to "continue to scan the horizons and understand the future needs and challenges that Singapore and our students will face" (Ng, 2015b), the need to "keep building up our education system to meet new challenges" (Ng, 2016a). He acknowledged that Singapore has done well so far due to two "critical features": "high quality teachers and schools leaders…[and] clarity of purpose of education". Beyond mechanistic accountability, our school leaders have proven themselves to have a strong sense of responsibility (Ng, 2017) to achieve the mission of our education system: to "mould the future of our nation by moulding the people who will determine the future of our nations" (Ng, 2016a).

While it is understandable that education in Singapore is such a critical strategy and lever in our success as a nation that it cannot be left totally in the hands of individual schools, it is not clear if the existing centralised — decentralisation model can enable our education system to innovate sufficiently to meet the needs of the 21st century. Thinking out of the box while doing well in the box (Ng, 2007) can be challenging in maintaining a fine balance between constancy and change. Furthermore, in a culture like ours where there is generally a high-power distance, principals may defer to MOE or to their Cluster Superintendents (Ng, Nguyen, Wong, & Choy, 2015; Stott & Low, 2000). There is a thus a tension between a cultural pull towards conformity and the need for innovation (Stott & Low, 2000). There is correspondingly a tension between providing students with an all-round education "although it

does not show up in victories…[or] help in the school ranking" (Shanmugaratnam, 2005b) and maintaining the unofficial 'ranking' of the school.

Going forward, to remain competitive internationally, Singapore must maintain a strong education system that prepares our students to be future ready. As Singapore principals are increasingly given more autonomy to execute policies differently to suit the needs of local contexts, they may have to move beyond exercising distributed leadership to a new type of leadership known as ecological leadership to ensure that educational change or innovation to improve education in schools are fully supported and sustainable. The following chapter illustrates how ecological leadership may be needed to pave the way for school improvement. Ecological leadership is about the alignment of leadership efforts within schools, across schools in formal or informal clusters, and including the Ministry of Education Headquarters, based on strengthening networks, and establishing norms of practice and trust.

References

Academy of Principals (Singapore). (2011). Special edition: The untold story. *Principia*. Retrieved from http://www.aps.sg/files/principia/Principia_SE.pdf

Academy of Principals (Singapore). (2009). Flight paths. *Principia, 2*(2). Retrieved from http://www.aps.sg/files/principia/principia4_lowres.pdf

Academy of Principals (Singapore). (2010). Leaders past, future & present. *Principia, 3*(2). Retrieved from http://www.aps.sg/files/principia/principia_janV3N2%202010.pdf

Academy of Principals (Singapore). (2007). Guiding principles. *Principia, 1*(1). Retrieved from http://www.aps.sg/files/principia/principia1_lowres.pdf

Academy of Principals (Singapore). (2009). Sharing Principals. *Principia, 3*(1). Retrieved from http://www.aps.sg/files/principia/principia%235_lowres.pdf

Bush, T., & Chew, J. (1999). Developing human capital: training and mentoring for principals. *Compare: A Journal of Comparative and International Education, 29*(1), 41-52.

Chew, J. (2003). Principal performance appraisal in Singapore. In M. David & C. Cardno (Eds.), *Managing teacher appraisal and performance* (pp. 29-42). London: Routledge Falmer.

Chew, J., Stott, K., & Boon, Z. (2003). On Singapore: The making of secondary school principals. *International Studies in Educational Administration, 31*(2), 54-75.

Chong, K., & Low, G. (1991). *School management in Singapore-What research says.* Singapore: Southeast Asian Research Review and Advisory Group (SEARRAG).

Chua, S. C. (1977, July 23). Speech at the *Annual Dinner of the Singapore Educational Administration Society.* Retrieved 22 October 2017, from http://www.nas.gov.sg/archivesonline/speeches/record-details/70804dbb-115d-11e3-83d5-0050568939ad

Chua, S. C. (1978, September 1). Speech at the *Dinner to Commemorate Tachers Day.* Retrieved 22 October 2017, from http://www.nas.gov.sg/archivesonline/data/pdfdoc/csc19780901bs.pdf

Coleman, M., Low, G. T., Bush, T., & Chew, O. A. J. (1996). *Re-Thinking training for principals: The role of mentoring*. Paper presented at the American Educational Research Association, New York.

Darling-Hammond, L., & Rothman, R. (2011). *Teacher and leader effectiveness in high-performing education systems*. Washington, D.C.: Alliance for Excellent Education and Stanford Center for Opportunity Policy in Education.

Dimmock, C., & Goh, J. W. (2011). Transformative pedagogy, leadership and school organisation for the twenty-first-century knowledge-based economy: The case of Singapore. *School Leadership & Management, 31*(3), 215-234.

Dimmock, C., & Tan, C. Y. (2013). Educational leadership in Singapore: Tight coupling, sustainability, scalability, and succession. *Journal of Educational Administration, 51*(3), 320-340.

Goh, C. L., Thomas, W., Wijeysingha, E., Bryne, K., Chan, T. F., Fong, B., Tham, A. (1987). *Towards excellence in schools: A report to the Minister for Education, Republic of Singapore*. Singapore: Ministry of Education.

Goh, C. T. (1997, June 2). Shaping Our Future: Thinking Schools, Learning Nation. Keynote address presented at the *7th International Conference on Thinking*, Singapore. Retrieved from https://www.moe.gov.sg/media/speeches/1997/020697.htm

Goh, K. S., Chow, K. K., Kang, K. H., Lau, W. M., Lim, S. G., Low, P. Y., Wee, H. K. (1979). *Report on the Ministry of Education 1978*. Singapore: Ministry of Education.

Gopinathan, S., Wong, B., & Tang, N. (2008). The evolution of school leadership policy and practice in Singapore: responses to changing socio-economic and political contexts (insurgents, implementers, innovators). *Journal of Educational Administration and History, 40*(3), 235-249.

Goy, P. (2015). Singapore tops biggest global education rankings published by OECD, *The Straits Times*. Retrieved 22 October 2017, from http://www.straitstimes.com/singapore/education/singapore-tops-biggest-global-education-rankings-published-by-oecd

Heng, S. K. (2011a, September 22). Opening address at the *Ministry of Education Work Plan Seminar.* Retrieved 22 October 2017, from http://www.nas.gov.sg/archivesonline/data/pdfdoc/20110929001/wps_opening_address_%28media%29%28checked%29.pdf

Heng, S. K. (2011b, October 13). Speech at the *NIE Leaders in Education Programme Graduation Dinner.* Retrieved 22 October 2017, from https://www.moe.gov.sg/news/speeches/speech-by-mr-heng-swee-keat--minister-for-education--at-the-nie-leaders-in-education-programme-graduation-dinner-on-thursday--13-october-2011--at-730pm-at-the-regent-singapore-hotel

Heng, S. K. (2012a, September 12). Keynote address at the *Ministry of Education Work Plan Seminar.* Retrieved 22 October 2017, from https://www.moe.gov.sg/news/speeches/keynote-address-by-mr-heng-swee-keat--minister-for-education--at-the-ministry-of-education-work-plan-seminar--on-wednesday--12-september-2012-at-920-am-at-ngee-ann-polytechnic-convention-centre

Heng, S. K. (2012b, February 8). Education for Competitiveness and Growth. *Prepared Remarks at the Singapore Conference in Washington D.C., USA.* Retrieved 22 October 2017, from https://www.moe.gov.sg/news/speeches/prepared-remarks-for-mr-heng-swee-keat--minister-for-education--on-and8220education-for-competitiveness-and-growthand8221-at-the-singapore-conference-in-washington-dc--usa--on-wednesday--8-february-2012

Heng, S. K. (2012c, October 22). Speech at the *15th Appointment and Appreciation Ceremony for Principals.* Retrieved 22 October 2017, from https://www.moe.gov.sg/news/speeches/speech-by-mr-heng-swee-keat--minister-for-education-at-the-15th-appointment-and-appreciation-ceremony-for-principals-on-thursday--27-december-2012--at-island-ballroom--shangri-la-hotel#sthash.siqNTkri.dpuf

Heng, S. K. (2013, September 25). Keynote Address at the *Ministry of Education Work Plan Seminar.* Retrieved 22 October 2017, from https://www.moe.gov.sg/news/speeches/keynote-address-by-mr-heng-swee-keat--minister-for-education--at-the-ministry-of-education-work-plan-seminar-2013--on-wednesday--25-september-2013-at-915am-at-ngee-ann-polytechnic-convention-centre#sthash.64vu3zhI.dpuf

Heng, S. K. (2014, December 30). Speech at the *17th Appointment and Appreciation Ceremony for Principals.* Retrieved 22 October 2107, from https://www.moe.gov.sg/news/speeches/speech-by-mr-heng-swee-keat--minister-for-education-at-the-17th-appointment-and-appreciation-ceremony-for-principals--shangri-la-hotel--30-december-2014--at-310pm#sthash.tGGee3ry.dpuf

Ho, P. (2014, March 31). Opening remarks at the *Principals' Forum and PISA 2012 Problem Solving Results Launch.* Retrieved 22 October 2017, from https://www.moe.gov.sg/news/speeches/opening-remarks-by-ms-ho-peng--director-general-of-education--at-the-principalsand8217-forum-and-pisa-2012-problem-solving-results-launch-on-31-march-2014--230pm-at-victoria-junior-college#sthash.AW1niJRU.dpuf

Kumar, S., Chan, L. C., Chia, C. C., Chew, Y., Tan, C. S., & Tan, J. (1987). Assessments and Examination. In Ministry of Education (Ed.), *Pre-U seminar: Towards excellence in schools: The report* (pp. 107-125): Ministry of Education, Singapore.

Lee, C. M. (1970, May 24). Opening address at the *Forum on Education and Innovation.* Retrieved 22 October 2017, from http://www.nas.gov.sg/archivesonline/data/pdfdoc/PressR19700523c.pdf

Lee, C. M. (1972, June 22). Opening address at the *National Seminar on Administration and Management of Schools.* Retrieved 22 October 2017, from http://www.nas.gov.sg/archivesonline/data/pdfdoc/PressR19720622j.pdf

Lee, C. M. (1973, August 31). Speech at the *Combined Teachers Union's Dinner in Commemoration of Teachers' Day.* Retrieved 22 October 2017, from http://www.nas.gov.sg/archivesonline/data/pdfdoc/PressR19730831d.pdf

Lee, C. M. (1974a, March 16). Speech at the *Course on Education Administration for Recently Appointed Principals.* Retrieved 22 October 2017, from http://www.nas.gov.sg/archivesonline/data/pdfdoc/PressR19740316.pdf

Lee, C. M. (1974b). Speech at the *Combined Teachers Union's Dinner in Commemoration of Teachers' Day.* Retrieved 22 October 2017, from http://www.nas.gov.sg/archivesonline/data/pdfdoc/PressR19740901.pdf

Lee, P. S. (2008). Lecture by a former principal of St. Nicholas Girls' School. In S. W. Poon (Ed.), *Lectures from the Principals: The past, present and future of the Chinese schools* (pp. 9-24).

Lim-Chan, G. C. Y. (2006). *The role of heads of department in cluster secondary schools in Singapore.* Doctor of Education, University of Leicester.

Low, G. T., Chong, K. C., & Walker, A. (1994). Passing on the baton. *International Journal of Educational Management, 8*(3), 35-37.

Menon, R. (2015, August 5). An economic history of Singapore–1965–2065. Speech at the *Singapore Economic Review Conference*, Retrieved 22 August 2017, from http://www.mas.gov.sg/News-and-Publications/Speeches-and-Monetary-Policy-Statements/Speeches/2015/An-Economic-History-of-Singapore.aspx

MOE (n.d.). Leader Growth Model: A toolkit for leadership development. Singapore: Ministry of Education.

MOE (2015). *21st Century Competencies*. Singapore: Ministry of Education. Retrieved 22 October 2017, from https://www.moe.gov.sg/education/education-system/21st-century-competencies.

NIE (n.d.). *Leadership and School Organisation.* Singapore: National Institute of Education. Retrieved 22 October 2017, from http://www.nie.edu.sg/research/research-offices/office-of-education-research/research-development-framework/leadership-and-school-organisation

NIE (2013a). *Developing School Leaders for the Nation: Leadership Programmes*. Singapore: National Institute of Education. Retrieved 22 October 2017, from http://155.69.97.30/docs/default-source/GPL/leadership-programme.pdf?sfvrsn=4

NIE. (2013b). *Leadership Programmes in NIE*. Singapore: National Institute of Education Retrieved 22 October 2017, from http://155.69.97.30/docs/default-source/GPL/leadership-programme.pdf?sfvrsn=4

National Library Board. (2016a). *Introduction of Single Session System in Schools.* Singapore: National Library Board. Retrieved 22 October 2017, from http://eresources.nlb.gov.sg/history/events/53f31349-1918-493d-9c05-74017f98b9cb

National Library Board. (2016b). *Vernacular education.* Singapore: National Library Board. Retrieved 26 July, 2017, from http://eresources.nlb.gov.sg/infopedia/articles/SIP_2016-10-03_094744.html

New Town Secondary School. (2017). *School history*. Retrieved 15 April, 2017, from http://newtownsec.moe.edu.sg/about-us/school-history/

Ng, C. M. (2015a, October 16). Speech at the *NIE Leaders in Education Programme Graduation Dinner.* Retrieved 22 October 2017, from https://www.moe.gov.sg/news/speeches/speech-by-mr-ng-chee-meng--acting-minister-for-education-schools-and-senior-minister-of-state-for-transport--at-the-nie-leaders-in-education-programme-graduation-dinner-on-friday--16-october-2015--7-30pm-at-the-regent-singapore-hotel#sthash.xutiiBgE.dpuf

Ng, C. M. (2015b, December 29). Speech at the *18th Appointment and Appreciation Ceremony for Principals.* Retrieved 22 October 2017, from https://www.moe.gov.sg/news/speeches/speech-by-mr-ng-chee-meng--acting-minister-for-education-at-the-18th-appointment-and-appreciation-ceremony-for-principals

Ng, C. M. (2016a, December 29). Speech at the *19th Appointment and Appreciation Ceremony for Principals.* Retrieved 22 October 2017, from https://www.moe.gov.sg/news/speeches/speech-by-mr-ng-chee-meng--minister-for-education-schools--at-the-19th-appointment-and-appreciation-ceremony-for-principals

Ng, C. M. (2016b, October 27). Speech at the *Singapore Economic Policy Forum.* Retrieved 22 October 2017, from https://www.moe.gov.sg/news/speeches/speech-by-ng-chee-meng--acting-minister-for-education-schools-at-the-singapore-economic-policy-forum

Ng, D. F. S., Nguyen, D. T., Wong, B. K. S., & Choy, W. K. W. (2015a). Instructional leadership practices in Singapore. *School Leadership & Management, 35*(4), 388-407.

Ng, D. F. S., Nguyen, D. T., Wong, B. K. S., & Choy, W. K. W. (2015b). A review of Singapore principals' leadership qualities, styles, and roles. *Journal of Educational Administration, 53*(4), 512-533.

Ng, E. H. (2010, September 23). Speech at the *MOE Workplan Seminar*. Retrieved 22 October 2017, from http://www.nas.gov.sg/archivesonline/data/pdfdoc/20100930001/speech_by_minister_wps2010.pdf

Ng, F. S. D., Nguyen, T. D., Wong, K. S. B., & Choy, K. W. W. (2015). Instructional leadership practices in Singapore. *School Leadership & Management, 35*(4), 388-407.

Ng, J. Y. (2015). *Singapore tops OECD's global education ranking: Report*. Singapore: Channelnewsasia. Retrieved 20 December 2016, from

http://www.channelnewsasia.com/news/singapore/singapore-tops-oecd-s/1843546.html

Ng, P. T. (2004). Engaged learning for school leaders: The future school project of the Leaders in Education Programme. *Teaching and Learning, 25*(1), 19-30.

Ng, P. T. (2007). Quality assurance in the Singapore education system in an era of diversity and innovation. *Educational Research for Policy and Practice, 6*(3), 235-247.

Ng, P. T. (2008a). Developing forward-looking and innovative school leaders: The Singapore leaders in education programme. *Journal of In-service Education, 34*(2), 237-255.

Ng, P. T. (2008b). Educational reform in Singapore: From quantity to quality. *Educational Research for Policy and Practice, 7*(1), 5-15.

Ng, P. T. (2008c). The phases and paradoxes of educational quality assurance: The case of the Singapore education system. *Quality Assurance in Education, 16*(2), 112-125.

Ng, P. T. (2013a). Developing Singapore school leaders to handle complexity in times of uncertainty. *Asia Pacific Education Review, 14*(1), 67-73.

Ng, P. T. (2013b). An examination of school accountability from the perspective of Singapore school leaders. *Educational Research for Policy and Practice, 12*(2), 121-131.

Ng, P. T. (2015). Aspiring principals' perception of the challenges of beginning principals and the support that they need. *Asia Pacific Journal of Education, 35*(3), 366-376.

Ng, P. T. (2017). Paradox 3: Centralised decentralisation. *Learning from Singapore: The power of paradoxes* (pp. 75-81). Singapore: Taylor & Francis.

Salary.sg. (2017). School ranking, from http://www.salary.sg/?s=school+ranking

Seah, J. C., & Ow, A. (2003). *School Excellence Model*. Singapore: Civil Service College. Retrieved 26 April 2017, from https://www.cscollege.gov.sg/Knowledge/Ethos/Ethos%20June%202003/Pages/The%20School%20Excellence%20Model.aspx

Shanmugaratnam, T. (2004, December 30). Speech at the *Appointment Ceremony for Principals.* Retrieved 22 October 2017, from http://www.nas.gov.sg/archivesonline/speeches/view-html?filename=2004123093.htm

Shanmugaratnam, T. (2005a, December 29). Speech at the *8th Appointment Ceremony for Principals.* Retrieved 22 October 2017, from http://www.nas.gov.sg/archivesonline/speeches/view-html?filename=20051229993.htm

Shanmugaratnam, T. (2005b, September 22). Speech at the *MOE Workplan Seminar.* Retrieved 22 October 2017, from http://www.nas.gov.sg/archivesonline/speeches/view-html?filename=20050922991.htm

Shanmugaratnam, T. (2006). Building on Individual and Collective Leadership in our Schools. Speech at the *9th Appointment Ceremony for Principals.* Retrieved 22 October 2017, from https://www.moe.gov.sg/media/speeches/2006/sp20061228.htm

Shanmugaratnam, T. (2007, December 28). Speech at the *10th Appointment Ceremony for Principals.* Retrieved 22 October 2017, from https://www.moe.gov.sg/media/speeches/2007/sp20071228.htm

Sim, C. (2014). *Singapore Ranking*. Singapore: National Library Board. Retrieved 22 October 2017, from http://eresources.nlb.gov.sg/infopedia/articles/SIP_512_2005-01-03.html

Singapore Department of Statistics. (2015). *Time Series on Per Capita GDP at Current Market Prices*. Singapore: Ministry of Trade and Industry. Retrieved 22 October 2017, from https://www.singstat.gov.sg/docs/default-source/default-document-library/statistics/browse_by_theme/economy/time_series/gdp.xls

Singapore Department of Statistics. (2016). *Population Trends 2016*. Singapore: Ministry of Trade and Industry.

Singapore Learner. (2017). *School rankings.* Retrieved from http://singaporelearner.com/category/school-rankings/

Singh, T., Vaswani, K. R., Ye, A., Mei, R., Qong, R., & Li, J. (1987). The school community. In Ministry of Education (Ed.), *Pre-U seminar: Towards excellence in schools: The report* (pp. 126-156): Ministry of Education, Singapore.

Stott, K., & Low, G. T. (2000). Leadership in Singapore schools: The impact of national culture. *Asia Pacific Journal of Education, 20*(2), 99-109.

Tan, C., & Ng, P. T. (2007). Dynamics of change: Decentralised centralism of education in Singapore. *Journal of Educational Change, 8*(2), 155-168.

Tan, T. (1980, August 16). Speech at the *Nanyang University Convocation.* Retrieved 22 October 2017, from http://www.nas.gov.sg/archivesonline/data/pdfdoc/tkyt19800816s.pdf

Tan, T. (1986, July 22). Economic change and the formulation of education policy. Speech at the *NTI Forum at the Nanyang Technological Institute.* Retrieved 22 October 2017, from http://www.nas.gov.sg/archivesonline/data/pdfdoc/tkyt19860722s.pdf

Tan, T. (1987). Education - New horizons and new challenges. In Ministry of Education (Ed.), *Pre-U seminar: Towards excellence in schools: The report* (pp. 169-176): Ministry of Education, Singapore.

Teng, A. (2016, July 13). PSLE through the Years. Retrieved from The Straits Times website: http://www.straitstimes.com/singapore/education/psle-through-the-years

Teo, C. H. (1997, July 11). Improving School Management through School Clusters: Speech at the *Official Opening of the New Campus of Tanjong Katong Girls' School.* Retrieved 22 October 2017, from https://www.moe.gov.sg/media/speeches/1997/110797.htm

Teo, C. H. (1998, December 21). Principals - The Key Leaders in Building Thinking Schools based on Strong School-Home-Community Relations: Speech at the *Appointment Ceremony for Principals.*

Teo, C. H. (1999a, December 30). Speech at the *Appointment Ceremony for Principals.* Retrieved 22 October 2017, from http://www.nas.gov.sg/archivesonline/data/pdfdoc/1999123001/tch19991230a.pdf

Teo, C. H. (1999b, September 4). Speech at the *MOE Work Plan Semina.* Retrieved 22 October 2017, from http://www.nas.gov.sg/archivesonline/data/pdfdoc/1999090403/tch19990904d.pdf

Teo, C. H. (2000a, September 23). Ability Driven Education - Putting the System in Place. Speech at the *MOE Work Plan Seminar.* Retrieved 22 October 2017, from http://www.nas.gov.sg/archivesonline/speeches/view-html?filename=2000092302.htm

Teo, C. H. (2000b, January 12). Dynamic School Leaders and Schools - Making the Best Use of Autonomy. Speech at the *Diploma in Educational Administration (DEA) Graduation Dinner.* Retrieved 22 October 2017, from http://www.nas.gov.sg/archivesonline/data/pdfdoc/2000011201/tch20000112b.pdf

Teo, C. H. (2001a, April 14). A High-Quality Teaching Force for the Future: Good Teachers, Capable Leaders, Dedicated Specialists. Speech at the *Senior Education Officer Promotion Ceremony.*

Teo, C. H. (2001b, October 23). Leading Innovation in Education. Speech at the *LEP Graduation Ceremony*. Retrieved 22 October 2017, from http://www.nas.gov.sg/archivesonline/speeches/view-html?filename=2001102302.htm

Teo, C. H. (2001c, December 28). Speech at the *Appointment Ceremony for Principals*.

Teo, C. H. (2002a, October 22). The Singapore Model of Educational Leadership. Speech at the *Leaders in Education Programme Graduation Ceremony*.

Teo, C. H. (2002b, January 11). Speech at the *Launch of Academy of Principals.* Retrieved 22 October 2017, from http://www.nas.gov.sg/archivesonline/speeches/view-html?filename=2002011102.htm

Teo, C. H. (2002c, December 30). Speech at the *Appointment Ceremony for Principals*.

The Straits Times. (2015). Heng Swee Keat as Education Minister: A study in bold moves. Retrieved from http://www.straitstimes.com/singapore/education/heng-swee-keat-as-education-minister-a-study-in-bold-moves

Toh, C. C. (1979, March 28). *Speech by Dr Toh Chin Chye in Parliament on the education resolution.* Retrieved from http://www.nas.gov.sg/archivesonline/speeches/record-details/70be432c-115d-11e3-83d5-0050568939ad

Toh, Y., Hung, W. L. D., Chua, P. M.-H., He, S., & Jamaludin, A. (2016). Pedagogical reforms within a centralised-decentralised system: A Singapore's perspective to diffuse 21st century learning innovations. *International Journal of Educational Management, 30*(7), 1247-1267.

Walker, A., Chong, K. C., & Low, G. T. (1993). Principalship training through mentoring: The Singapore experience. *Journal of Educational Administration, 31*(4).

Walker, A., Stott, K., & Cheng, Y. C. (2003). Principal supply and quality demands: a tale of two Asia-Pacific city states. *Australian Journal of Education, 47*(2), 197-208.

Wee, H. T., & Chong, K. (1994). 25 years of school management. In J. S. K. Yip & W. K. Sim (Eds.), *Evolution of educational excellence: 25 years of education in the Republic of Singapore* (pp. 33-60). Singapore: Longman Singapore Publishers (Pte) Limited.

Yip, J. S. K., Eng, S. P., & Yap, J. (1994). 25 years of educational reform. In J. S. K. Yip & W. K. Sim (Eds.), *Evolution of educational excellence: 25 years of education in the Republic of Singapore* (pp. 1-32). Singapore: Longman Singapore Publishers (Pte) Limited.