
Title	Significance of educational leadership: Case for Singapore schools today
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Source	Thiam-Seng Koh and David Wei-Loong Hung (Eds.), <i>Leadership for change: The Singapore schools' experience</i> (pp. 85-101)
Published by	World Scientific Publishing

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This is the author's accepted manuscript (post-print) of a book chapter that was accepted for publication in the following source:

Shamala Raveendaran, Toh, Y., Chua, P., Hung, D. W. L., & Azilawati Jamaludin. (2018). Significance of educational leadership: Case for Singapore schools today. In T. S. Koh & D. Hung (Eds.), *Leadership for change: The Singapore schools' experience* (pp. 85-101). Singapore; Hackensack, N.J.: World Scientific, 2018.

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Chapter 3

Significance of Educational Leadership: Case for Singapore Schools Today

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In this chapter, we share our findings on an emergent type of leadership that we term as *ecological leadership* that will sustain educational innovations leading to purposeful learning in schools and facilitate the scaling of the innovations to other schools. This *ecological leadership* seeks a bi-directional alignment of ecological subsystems that comprise aligning leadership at a school to leadership across schools and up to leadership at the Ministry of Education (MOE) headquarters. We achieve this bi-directional alignment through leveraging multi-level networks, norms of practice and trust to achieve outcomes that move towards life-long, life-wide, life-deep and life-wise learning in schools. We begin our discussion on ecological leadership with an introduction on what makes a good leader.

INTRODUCTION

The study of great leaders has always been of great interest to us throughout history. No matter which style of leadership you ascribe to, it is without a doubt that leaders fascinate us. Not only do we empower leaders to make momentous decisions that affect our lives, we also look to them as role models and for guidance. “Leadership is one of the most observed and least understood phenomena on Earth.” (Burns, 1978, p. 2). This quote, as surmised by James MacGregor Burns, who is widely viewed as the founder

of leadership studies, shows that the study and understanding of what makes a good leader remains a complex topic.

Business and political leaders have drawn inspiration from the Greek philosopher Plato, and the ideas surrounding his “Great man theory” (Borgatta, Bales, & Couch, 1954) which placed a central focus on the individual, who by virtue of their exceptional talents or traits, were able to make wise decisions that led to bold action, shaped holistic vision and courageously steered the way forward despite the uncertainties and vagaries of the future. However, Burns’ theory of leadership changed the landscape of leadership theory research by shifting the focus from the individual to the collective. This shift in focus was significant as it increased the scope of research beyond the individual to a more macro level. Likewise, in a review of the last two decades of educational leadership, we found that external factors and local school contexts influence distributed leadership and transformational leadership (Hallinger, 2003).

THE LITTLE RED DOT

Before we delve deeper into what constitutes leadership, we first need to look at the current state of leadership in the Singapore context and what are the motivations of exemplary leadership. “In talking about leadership, we must first ask ourselves, ‘Leadership for what?’ ” (Bennis, 2007, p. 3).

Educational systems have gone through many cycles of improvement, change and reform as it responds to the acute needs of the economy and policies. Likewise, educational leadership has experienced its fair share of ebbs and flows congruent with the convergence and interactions between the system, stakeholders and policymakers. These occurrences are not unique to educational systems. They happen universally across corporate and political systems, and in fact, in any form of structured hierarchical organisation. Within the broad area of Singapore schools, educational leadership operates within a set of constraints, motives, values and directives that it works with. Although this chapter by itself may not be

able to fully explicate the context of Singapore and its education systems, it will attempt to give a taste of the milieu in which educational leaders function in.

As a small nation where people are the only natural resource, schools in Singapore play a very important role in moulding the next generation of students. The Singapore system has made great strides beginning from the survival-driven phase under the auspices of the Ministry of Education, keeping in line with the rapid development and needs of Singapore's economy. With the rapid technological advances that are transforming and disrupting global economies, it is critical that we prepare students for the increasingly innovation-driven global landscape. As educators, we all aspire to see our students succeed beyond the classroom. Thus our role has to change. Schools have to shift from an overemphasis on academic results to enable students to discover their interests, nurture their creativity and passions, foster a joy of learning and build resilience and adaptability.

To answer the question of how well our students are ready for the unknown future, MOE announced its vision of becoming "Thinking Schools, Learning Nation (TSLN)" in 1997. The TSLN vision aimed to solidify the vision of a thinking nation which is "capable of meeting future challenges" and "an education system geared to the needs of the 21st century" (Goh, 1997). Such guiding principles provided school leaders with the beginnings of impetus to lead school change and build the appropriate culture to meet new challenges of the global world. These guiding principles were further supplemented with policy directives such as the Information and Communication Technology Masterplans (ICT mp) which aimed to encourage the more innovative pedagogical use of ICT in Singapore schools. It was first mooted in partnership with TSLN in 1997 and has seen four iterations since then to represent the progress schools have made in ICT innovations.

ICT Masterplan 4 (ICT mp4) which is the current iteration of the MOE initiative, articulated the reality of innovations in education and its importance in building the next generation of learners and leaders. Innovations are becoming the mainstay of the education system. It

indicates a need to exhibit appropriate leadership to encourage and to trailblaze with new cultures and practices to overcome challenges related to the tensions of contrasting dichotomies that schools leaders face in the Singapore education system. Binaries such as encouraging autonomy and agency are contrasted with top-down policy rollouts can create tensions within the school. Such dichotomies manifest itself as schools function as decentralised microcosms within a centralised system (Tan and Ng, 2007). In this vein, the educational policy ICT mp4 knowingly or unknowingly provided school leaders with a sense of mission to build the desired culture in their school and the social architecture necessary for this school culture.

Another key national educational policy in recent years is that of the 21st century competencies (21st CC). It has become paramount that schools need to inculcate the 21st century skills as their students move into a new world order that requires skills such as critical thinking, communication and cross-cultural skills (Ministry of Education, 2015). The 21st CC framework is centred around the idea that students are defined by their core values and principles which are shaped by social and emotional competencies (Ministry of Education, 2015). Beyond these social and emotional skills, we consider the 21st CC as representing competencies that will be critical for the students to engage in the global world. The 21st CC include civic literacy, global awareness and cross-cultural skills; critical and inventive thinking; and communication, collaboration and information skills. These skills were conceptualised to render our students future-ready as they step into the world that is rife with uncertainties. This framework goes hand in hand with ICT mp4 that outlines how digital technologies should lead the way in terms of changes in teaching and learning in schools.

CONNECTING THE DOTS: FROM PAST TO PRESENT

We argue that educational leadership theories are culturally bound (Hairon & Goh, 2015), and, therefore, when we understand the indigenous culture, we are also able to understand leadership styles. Although there is a wealth of leadership literature on school change, they do not adequately reflect

the cultural nuances of Singapore and its education system. Singapore is influenced by East Asian values that reflect communitarianism and paternalism that can offer insights which other systems may not offer. These values places community and the 'greater good' above personal gains. Singapore's education system is also subjected to international interests on its governance models and leadership practices that have enabled it to sustain stellar performance in all international benchmarking evaluations. Together with these international interests and local developments on policies such as TSLN and ICT mp4, it is interesting to find out how school leaders facilitate changes and school improvements in these areas.

In addition to the East Asian values, it is also worth mentioning that Singapore is a tightly coupled system underpinned by a strong tripartite partnership. MOE enjoys a collaborative partnership with both schools and the National Institute of Education (NIE), the sole teacher training institution for all Singapore teachers. This tripartite relationship facilitates the transmission of ideas and directives efficiently as MOE manages a centralised system. Even though there is tight centralisation of the education system in terms of curriculum and assessment, TSLN and ICT mp4 policies aim to give schools more autonomy to decentralise governance of schools at a local level, especially in terms of pedagogical manoeuvrability. The degree of autonomy gives rise to a unique environment of a centralised-decentralised (Tan and Ng, 2007) system where broad-based policies and accountability systems have served as central anchors at the national level with pedagogical flexibility encouraged at the local level. At a central level, educational policies are rolled out with a view on the global educational landscape. Educational policies such as TSLN, the 21st century competencies (21st CC) framework (MOE, 2014) and ICT masterplans (MOE, 2015) are conceptualised to be put in place by all schools leaving the exact execution to the decentralised vision and leadership of school leaders. Even though there are centralised policies, schools are increasingly given the autonomy to execute the policies differently depending on the leadership styles of the school principals and their management team. The school is then able to adjust pedagogical decisions that fit the need of the local environment and

contexts. This unique context and cultural nuances make for interesting studies on educational leadership as we uncover distinctive challenges and opportunities.

We distilled three dualities based on a meta-analysis done by Toh and her colleagues (2017) on 26 leadership-related projects conducted by researchers at National Institute of Education. They are the need to balance curriculum content expertise and 21st century competencies, the need to align top-down policy directives with translated bottom-up school goals, and the need for sustainability of school change. There are instantiations of tensions between academic performance and responsible teaching where schools seek to uphold their high performing status and yet also are cognisant of the need to teach 21st century competencies to prepare their students for the future. This is reflected in policy initiatives such as the ICT masterplans that advocate the need to foster autonomy yet while maintaining accountabilities for performance in schools.

Schools leverage different forms of leadership practices to circumvent these tensions. One such leadership style that we have observed in schools is distributed leadership where multiple teachers and staff collectively exercise instructional leadership for school change and improvement in teaching and learning (Camburn, Rowan, & Taylor, 2003). We view distributed leadership as transformational by seeking to coordinate the efforts of a team of people rather than just a single individual (Hallinger, 2003; Spillane, 2005). Distributed leadership requires the planned distribution of decision making and collaborative efforts to bring about sustainable school change. Fullan (2002) describes the principal of the future as a “cultural change principal”, one who is attuned to the big picture, a conceptual thinker who transforms organisations through its people. In the same vein, school leaders in Singapore schools have also been found to be willing to distribute ‘power’ to develop other middle managers and teacher leaders, especially in terms of instructional matters. Such planned distributed leadership requires teachers and managers to rise to the occasion and grab autonomy by its horns. They are empowered to lead changes to their pedagogical instruction and curriculum improvements (Ng *et al.*, 2015; Ng & Ho, 2012, Ho & Ng, 2012). Thus,

we see that, while policies need to travel down to schools, there is also a need for school leaders to ensure that the translated versions of it have adequate depth in the school. The translation of policies requires teachers to embrace cultural changes and school leaders to restructure organisational practices and routines and promote values of collaboration, autonomy and openness.

Notwithstanding the fact that MOE gives schools more autonomy, the perennial challenge lies in ensuring there are accompanying capacity building strategies that allow schools to harness this autonomous pedagogical space more effectively. There have been examples of teachers eschewing autonomy and instead expecting prescription from school leaders or MOE. These mindsets can impede sustainable school change by creating resistance and mute the intended effects of distributed decision making. To work around resource constraints, some schools may choose to import innovations without understanding the essence of it. They also fail to engage deeply with the process of knowledge creation. Because of the above, an unhealthy dependency culture on school leaders or the providers of the imported innovation may have worked against the purpose of providing autonomy, which is to design localised solutions to better address the local needs of the schools. These challenges may pave the way for school leaders to exercise not just distributed leadership, but an emergent leadership known as *ecological leadership*. We argue that ecological leadership will allow leaders to account for diverse perspectives and expertise amongst actors.

A NEW WAVE: ECOLOGICAL LEADERSHIP

The conceptual anchor for ecological leadership comes from Bronfenbrenner's (1979) ecological model of human development. Ecology was first used to describe the study of habitats where organisms live, and this term has been widely appropriated to understand theories surrounding the management and development of socio-ecological systems (Olsson, Folke, & Berkes, 2004). Bronfenbrenner described ecology in terms of five dimensions, namely: microsystem, mesosystem,

exosystem, macrosystem and chronosystem. Ecological leaders have been postulated to be able to mitigate the three dualities of educational leadership in Singapore schools and can garner support from their teachers to walk the journey with them (Toh, Jamaludin, Hung, & Chua, 2014).

School change can be inhibited or supported from the different ecological dimensions enabling ecological leaders to connect the dots across the subsystems. Ecological leaders will be able to convince actors in the ecosystem via evidence-based arguments, forge system-wide beneficial partnerships, optimise resources and resolve concerns within the socio-technical infrastructure (Toh *et al.*, 2017). As ecological leaders believe in inclusivity, they will try to initiate and maintain support for inclusion. They will resolve concerns via the ecosystem carryover effects affecting the structural, socio-cultural, economic and epistemic dimensions to ensure access to opportunities. Carryover effects are a transfer of effects that result from a previous innovation situation. We will elaborate on these carryover effects in greater detail in Chapter 4. They are also preoccupied with systems thinking seeking to benefit other schools in the system. This form of cohesiveness as an ecological leader is required to affect all the other subsystems in the ecology.

As ecological leadership argues that leadership does not completely originate from one individual, there is a propensity to tap on the expertise of leaders from the middle. There is leadership springing from multiple levels in the ecological system. Although there is strong evidence of distributed expertise, there is still less evidence for an upward percolation or slowing passing on of feedback. The lack of sufficient upward percolation could be due to the hierarchical nature of the teachers' work in schools as these teachers may see doing so as questioning the status quo or for fear of disturbing their superiors, known as reporting officers in schools here. The latter is in line with concepts of bounded empowerment (Hairon & Goh, 2015) where Singapore principals empower their staff with some restrictions. They passed on certain decision-making responsibilities to their staff and continued to welcome them to make decisions within their scope of work.

As mentioned in the preceding section, when middle managers have accountability for the decisions that they make, it also empowers teachers to drive curriculum and instructional implementation. Many decisions that teachers make lie within the realm of lesson activities and planning. This is found to be in line with an East Asian preference for observing hierarchical rules and power distance. We observe that school leaders prefer to have some semblance of power distance even when demonstrating distributed leadership as it promotes efficiency (Hairon & Goh, 2015).

Among the various types of school improvement and reform, we observe that epistemic changes hold the key to sustainable change. Ensuring that changes are sustainable has been elusive for many a school leader as policies and goals keep shifting in episodic waves. In our meta-synthesis of leadership projects, we have found that the influence of teacher capacity and innovation ownership are paramount to the sustainable diffusion of innovations (Toh *et al.*, 2017). Similarly, a cultural transformation where a change in the way people work in an organisation and how they come together for a common goal would indicate the propensity for deep, enduring change (Fullan, 2002). Even when school leaders rotate on a term of five to six years, teachers' epistemology must shift if we want to build capacity in the school. Teachers will need to be convinced of the merits of the innovation and mentors guide new incumbents to the school. As such, the question is how then can ecological leaders foster epistemic shifts?

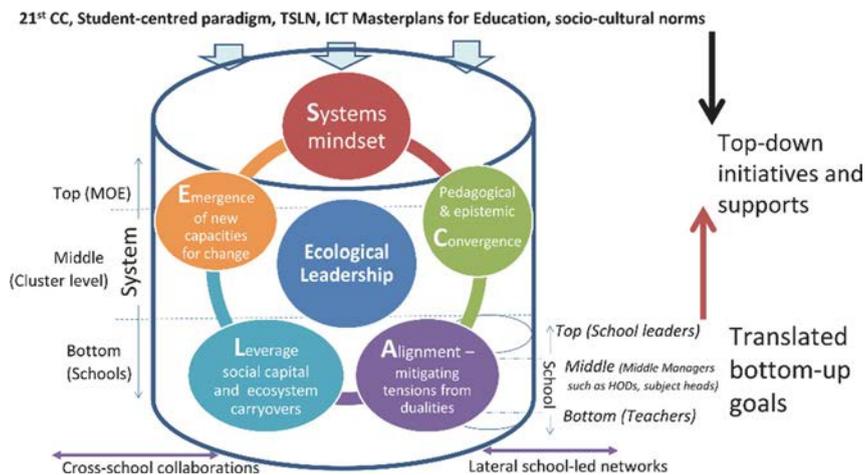
Some examples of fostering epistemic shifts would include brokering resources to inform teaching practices, encouraging lateral school-led networks for pedagogical discussions and professional learning. This can be termed as *enabling* form of leadership where leaders allow for the creation of networks to form learning teams (Toh *et al.*, 2017). There has been documentation that shows that school leaders who start with sustainability as their end goal had put in place organisational structures that would enable them to strive towards epistemic changes. These organisational structures include the establishment of in-house research centres where teachers worked closely with NIE researchers to drive pedagogical innovations and build design capacity. The intentional design

of such partnerships resulted in augmenting the capacity of their teachers with a new and improved epistemic outlook. Such changes resulted in the driving of innovations, development of innovation champions and teacher leaders.

Current leadership practices show that schools generally adopt the national policies showing consensus for schools to adopt the policies as a means to show the tight coupling of schools with the national governing body. At the exo-level, schools are guided by the cluster superintendent who provides support and guidance based on school performance. The cluster superintendent who typically oversees seven schools and their management also mentors principals and support curricula programs that are beneficial to the school and cluster of schools. At the meso-level, school leaders actively align school goals and vision with that of the national goals. School leaders set the vision and establish learning. Along with building the right culture to enact the ICT masterplan 4 and the development of the 21st century skills framework in schools, there is also an emphasis on building professional learning communities for capacity building within and across schools. As schools contextualise the educational policies to fit their school exercising a combination of professional expertise and knowledge about their environment, they exhibit professional discretion accounting for the centralised-decentralisation.

In the figure below, we visually represent the various tenets of ecological leadership (SCALE dimensions) (Toh *et al.*, 2014) as the dimensions converge for the purposes of school improvement and innovations. The SCALE dimensions refer to the convergence of thinking across ecological subsystems with a view to mitigate tensions, leverage social capital and bring together capacities in pedagogies and epistemologies that would be necessary for school improvement. A leader who deliberately sets out to bring the 5 dimensions together as a means to realise the vision of the educational change while bearing in mind the constraints, socio-cultural norms and educational policies would be one step closer to be an ecological leader.

Figure 1: Tenets of Ecological Leadership as Depicted by the SCALE Model (Toh *et al.*, 2014)



ECOLOGICAL LEADERSHIP: HARNESSING THE SOCIAL FOR SCHOOL IMPROVEMENT

As we deconstruct ecological leadership into the various levels of ecology, it becomes apparent that there are social interactions and networks between the levels transferring knowledge and capacity. Social interactions, networks and resources can be understood within the theory of social capital. Social capital has been described and deconstructed within many academic fields. Hargreaves and Fullan (2012, p. 90), categorise social capital as one of the elements of professional capital. In their conceptualisation, social capital refers to number and types of relationships, interactions that ultimately affect their access to knowledge and crucial information. Social capital is so powerful that it has been observed to increase mathematics achievement scores by 5.7% in the hands of a teacher with high social capital compared with another with lower social capital (Leana, 2011). The social capital resources generate more confident teaching and provide access to more constructive feedback just by being around the ‘right’ types of people by being involved in a

particular social network that benefits school change and improvement (Hargreaves and Fullan, 2012).

In this chapter, we have taken a different approach to social capital by separating them across three strands namely: networks, norms and trust. It is defined as “networks, norms and trust that enable participants to act together more effectively to pursue shared objectives” (Putnam, 1995, pp. 664-665). Such structures to understand social capital with will assist us to visualise the building of capacity across multi-level networks in the ecological system of leadership for school change.

Ecological leadership argues that social capital across ecological levels can be harnessed for school change and improvement. To understand this further, we can break down social capital into three dimensions, as described by Nahapiet & Ghoshal (1997) namely structural (referring to the network), relational (shared norms) and cognitive (common identity). As these three dimensions of social capital get stronger and more purposeful through the school leadership, it can stimulate innovative thinking as a means of building adaptive capacity within the organisation. As adaptive capacity grows, schools and organisations can weather the challenges and disruptions that may arise through trying to create change and improvement teaching and learning practices.

Raveendaran and her colleagues (2017) did a research study on mobilising existing social capital across the multi-level network. Based on the interviews with officers from MOE Educational Technology Division (ETD) who participated in the study, we found that these officers who were involved in the spread and seeding of innovations could leverage the three dimensions of social capital to build capacity for school change, and improvement. Actors such as the ETD officers function as brokers between significant innovators in schools and the Ministry of Education departments developing informal network ties. These ties are key to transfer knowledge and ideas for the sustainability of innovation in schools. Network position also makes a difference where actors that have leveraged the hierarchical structure in school can negotiate for school change. They can transform school teaching and learning practices by

behaving like ‘activists’ for the educational innovation enabling its diffusion and spread within and across schools. This is shown through an example where an ETD officer could influence the spread of the innovation through his network connections with school leaders, middle management and the overseas academic community. The network ties connecting schools, academic communities and Ministry of Education contributes to the flow of information and ideas to initiate school improvement.

Within the realm of relational social capital, we can negotiate norms of social co-operation with school leaders based on their level of trust and ‘bargaining’ power. In one instance, an officer from MOE Educational Technology Division negotiated with his school leader to use non-standard assessment tools congruent with school innovations and change. Such bold steps to create ‘new’ norms of structures and objectives point towards how building trust and communication at other levels of the ecological system can transform school practices. When ecological leaders exercise their relational social capital in this manner, they can gain more ‘supporters’ of school change by allowing for sharing of expertise and knowledge across boundaries.

Ecological leaders can further harness social capital by tapping on the cognitive capital of their staff and middle managers. These leaders can leverage national policies such as the ICT mp4 to use a common language through which they can communicate their goals and vision for the school. By using a shared vision as a mode of harnessing shared understanding through the various ecological levels, we argue that it paves the way to share tacit knowledge. For example, in our research study (Raveendaran *et al.*, 2017), we encountered an instance where officers in ETD, who oversee the ICT mp4 implementation, felt he was immersed in the importance of technology, critical thinking and its importance in building 21st century competencies. The messaging from the various policies resonated with him and spoke a ‘coordinated’ language. As such, if ecological leaders can foreground a resonating common thread among the various thrusts in their school goals, it can create a shared vision for school improvement and change.

Positive feedback loops of social capital within networks create a more collaborative environment adding value to the ecology of educational leadership and nature of schools. Ecological leaders need to believe in the social nature of school change and invest in all levels within the ecology. We will depict these leaders as more enlightened as they embark on a journey of school improvement and change. This collaborative effort amongst the contributors of this book is also an attempt to tackle the ecological nature of school change.

CONCLUSION

While ecological leadership can be aspirational for some schools, it's by no means out of reach for leaders who want to set out to achieve school change and reform. School leaders who have the internal capacity and the will to bring about sustainable change can make it happen. If school leaders choose pragmatism over the chance to make teaching and learning different for the students in their stead, they will once again fall to the age-old efficiency-driven model. As Singapore's education system has gained sufficient maturity and success in international benchmarking exercises, it does seem that we are advocating for change even when nothing is broken. However, it will be prudent to plan for changes before it becomes too late to change.

As we mark the 20th anniversary of the TSLN initiative, it is poignant to ask how far we have come along by looking at educational leadership from an ecological perspective. It is heartening to know that there are exemplary school leaders who have taken inspiration from the policies and executed it based on their own nuanced understanding. We hope that we can conduct more research at various levels of the ecological system tracing gaps between espoused and enacted policies that converges beyond diverse perspectives. As Hargreaves and Fullan (2012) have rightly described, school change is a movement. It is not just leaders moving their people but a 'social' movement where the different pieces need to converge on a goal. The cornerstones of successful school change is that of trust building and rapport between people.

One of the ways in which we can ignite school change is through the implementation of innovative pedagogical instruction. As ecological leaders take on the laudable goal of improving the school, they begin by looking at spreading and sustaining educational innovations.

In the following chapter, we will analyse in detail how we can sustain educational innovations leading to purposeful learning through the stewardship of ecological leaders by assessing innovation risks and scaffolding its spread through systemic carryovers within the multi-level ecological frame. We will discuss the carryover effects or transfer effects that result from previous innovation situations that include *structural, socio-cultural, economic and epistemic dimensions*.

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