TRANSFORMING SCHOOLS AS 21ST CENTURY INNOVATIVE LEARNING ENVIRONMENTS

Opportunities and Challenges Confronting School Leadership in Singapore

June 2015

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The
HEAD
Foundation

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Abstract

It is well recognised that emerging knowledge-based economies (KBEs), pose challenges for school systems such as Singapore as they demand new forms of curricula, pedagogies, and assessment. Less acknowledged, however, is that transforming schools as 21st century innovative learning environments requires new configurations of school leadership and organisation. This paper focuses on transformative change – in contrast to smaller scale piecemeal innovations – as the means of creating 21st century innovative learning environments and especially emphasises the new forms of leadership and organisation required. Focus is placed on Singapore as a fast developing KBE to exemplify the argument that dramatically different forms of leadership and organisation are required to deliver holistic, school-wide, school-deep, scaled-up, and sustainable change in preparing workforces for the KBE.

Introduction

It is well documented that knowledge-based economies (KBEs) demand of schools new forms of curricula, pedagogies, and assessment systems (Gopinathan, 2007; OECD, 2013a, 2013b, 2013c; Tan & Dimmock, 2014). These holistic changes presaged by KBEs constitute what OECD terms "21st century innovative learning environments" (Dimmock, Kwek & Toh, 2013). Less well documented, however, is the realisation that new forms of learning environment in turn require different configurations of leadership and organisation. While an abundance of literature has clarified the nature of the new learning environments, less attention has been devoted to the implications for leadership and organisation. This paper focuses on transformative change – as opposed to smaller scale piecemeal innovations – as the means of creating 21st century innovative learning environments, including leadership and organisation. Singapore is a fast developing KBE.

The paper is structured as follows. First, reference is made to comparisons, and in particular contrasts, between Singapore and England, mainly to provide a sharper understanding of the distinct features of Singapore education. Second, the salient argument is presented by tracking the emergence of the KBE and its ramifications for curriculum, pedagogy, and assessment. Third, passing reference is made to the school design model (a description of which is given for interested readers to follow-up elsewhere) as a method of addressing the implications of the KBE for teachers and leaders in school systems, for classrooms and school organisation of the holistic changes required to schools – namely, school-wide, school-deep, scaled-up, and sustainable. A final section identifies the opportunities and challenges presented to Singapore school leadership going forward.

Logistical contrasts between Singapore and England emphasise the smallness of the former system. Previous studies have argued that smallness seems to be a distinct advantage in terms of system performance in international rankings (e.g., Finland, Hong Kong, Ontario-Canada, Victoria-Australia are either small nation states or smaller state within federations). However, Japan, Korea, and Taiwan hardly have small populations and they all figure in the top-10 PISA rankings. Of probably greater significance is that the current top-seven places in PISA rankings are occupied by

Asian (East and Southeast) systems, leading to the conclusion that societal culture may have a more compelling effect on education system performance than smallness (Dimmock & Walker, 2005).

In one outstanding respect, however, the smallness of Singapore's school system is significant. A total population of just 5 million which is heavily urbanised on a small island, affords it the uniqueness of having fewer but larger schools, with an extremely high average size. For example, the total number of schools is 365, and the average primary school size is 1524 and the average secondary school is 1300. Comparison with England reveals the smallness of the Singapore system in every respect except, paradoxically, the size of each school. The small number of large schools helped enable the Singapore Ministry of Education (MOE) to establish a strong central command-and-control system at the start of independence in 1965, and for it to perpetuate today. Such a small system allows the MOE control over every important aspect of system management and to keep close supervision of what happens inside every school. In short, it enables tight alignment between policy and practice (Tan & Dimmock, 2014). While most developed systems have moved to school-based management and high levels of school autonomy, Singapore schools are judged to be below the OECD average on an autonomy index (OECD, 2013a, 2013b, 2013c). In this respect, Singapore defies the OECD formula that the world's best education systems are correlated with high levels of school autonomy. Rather, it is tight alignment and close coupling of all parts of the Singapore system – from the MOE headquarters through to the district superintendents into each school – that makes for an effective and efficient system, rather than school autonomy.

Three key pillars are the foundation of Singapore's education system. First, relying totally on its human resources for economic survival and prosperity, education is seen as hugely important in providing a workforce with the necessary knowledge and skills to keep the economy at the forefront of global competition (Gopinathan, 2007). Second, given its demographics as a multi-ethnic and multi-cultural society, social harmony is considered paramount. Hence, education serves a key function in creating and maintaining a racially tolerant society, one which is loyal to the republic and one in which individual interest is secondary to the overall interests of society as a whole. Third, education, as other sectors of Singapore society, is founded on the principle of meritocracy. In the Singapore context, meritocracy is based on rewarding achievement (which may not be the same as ability) and has come to mean that those with good education and higher levels of income and wealth are able to perpetuate their social and educational advantages for their offspring. Social mobility – once a hallmark of the then new republic – has thus begun to stall, with an emerging consensus that social injustice and inequity is a problem both now and for the future that needs addressing, in particular, education.

From one viewpoint, it may seem surprising that an education system acknowledged as *the* best – certainly *one* of the best – in the world, is facing problems. Yet from another, it is perfectly understandable: as Singapore's economy and society is one of the fastest changing and dynamic, it has to be to remain at the forefront of technological and economic change. Singapore's perceptive and astute education policymakers realise that education has not just to keep pace with

changes in the globalised world, but keep ahead. And as in the corporate world, the time to change and improve is when you are out in front.

Singapore's school system has gained an enviable reputation through the outstanding performance of its students on international achievement tests such as PISA, which measures achievement in mathematics, science, and reading. Such test results reflect a highly effective curriculum and pedagogy oriented towards a traditional academic curriculum. However, Singapore education policymakers realise that while this traditional academic emphasis must continue to be valued, it is insufficient as a preparation for a workforce in a KBE which needs will demand more and different skills.

Recent research on classroom observation in Singapore indicates the need for change and 2010 data (Hogan & Colleagues, 2009) showed that more than 60 per cent of classroom activities in primary and secondary schools were based on traditional teacher-centred methods. Less than 40 per cent relied on constructivist, student-centred methods – which are generally regarded as necessary for developing so-called "soft skills" needed in KBEs. Clearly, re-balancing is called for, not just in pedagogy, but also in curriculum and other elements of schooling. In contrast, 2009 data for England shows the opposite – 75 per cent of classroom activity was individual and group work. By 2014, this had dropped to 50 per cent and is advocated to fall more (Reynolds, 2014) as greater application of whole-class interactive teaching gains momentum. English schools have been employing more constructivist methods; however, the problem is that they have been aimed at the traditional academic curriculum rather than the soft skills required for the KBE. It seems whole-class interactive teaching and testing are most effective methods for performing well in international tests; student-centred, constructivist methods are more appropriate for developing skills for the KBE. Each system is grappling to find the appropriate combination and balance.

Labour market analysts conceptualise three sets of competencies as requirements for a KBE: academic competencies (such as language, maths, arts, and humanities); thinking competencies (such as critical thinking, originality, creativity, deductive, and inductive reasoning); and workplace competencies (social skills, complex problem-solving, technology, leadership, and decision-making). Schools – including those is Singapore – impart the first of these, but are increasingly challenged to re-configure their curricula and pedagogy to embrace the second and third. How then might they be re-configured to embrace all three sets of competencies required by fast-changing KBEs such as Singapore? How can they be turned into innovative learning environments fit for the 21st century globalised social and economic world?

A coherent transformation model is required that re-engineers all parts of a school in connected, synergistic ways. Coherence, connectivity, and transformation of all parts are necessary to achieve sustainability and scaling up. This approach is the antithesis of the typical response to the need for change, namely, piecemeal innovation which sees ad-hoc, small-scale changes to the curriculum or pedagogy introduced with only some or none of which have impact and sustainability. Only through purposefully re-designing schools – making them fit-for-purpose – can they

successfully confront the formidable social and economic challenges of relevance confronting them. In this regard, the *school design model* addresses the key issues of connectivity and methodology for school-wide and school-deep change (Dimmock, 2000). The model has been endorsed by OECD and is described and explained in detail elsewhere (Dimmock, Kwek & Toh, 2013).

The Unique Socio-political Environment of Singapore
As a society, Singapore is a unique mix of economic empowerment and tightly controlled personal liberties. For example, while free speech is curtailed and government censorship controls the news media, Singapore is often voted the "most business-friendly environment" in the world, with a consistently high rate of economic growth. Since foundation as a republic in 1965, meritocracy has been the principle undergirding political, economic, and social rewards (Tan, 2008). This notion of meritocracy is based on examination performance (not necessarily the same as ability) and is increasingly seen as iniquitous by some in society – especially those with fewer resources.

Traditionally, faith has been placed in nurturing high-academic achievers, who are resourced to attend world-best universities and who afterwards are expected to return to Singapore to assume leadership positions, especially in the public service. This has created an elite academic bureaucracy, which for the most part, is enlightened and smart. Contrariwise, notions of equity have hitherto been underplayed with access and opportunity dependent on academic achievement and streaming – both within and between institutions – from an early age. Overall, compared with Anglo-America, there has been less concern with social justice, early childhood compensatory programmes, and special education, although there is evidence in recent budgets that the Singapore government is starting to address some of these social inequalities.

If it is less possible to admire the Singapore government's record hitherto on addressing social inequalities, there are other grounds on which to admire its policymaking, in general. For example, on educational reform over the past two decades, policy initiatives have been consistent, evolutionary, evidence-informed, and mostly well thought-through. The absence of strong unions and competing political parties assists in the achievement of continuity, and less political ideology in policy formation. There is a strong tendency to learn from best practices elsewhere, adapt them to the Singapore context, and adopt pragmatic ways of putting them into practice. Economic success over many years has ensured that policies are generally well resourced. All of these provide a strong policy platform for a high-performing system, which in comparison with others, is successful at implementation (Dimmock, 2012).

School Leadership Issues in Singapore: Future Challenges
The smallness of the Singapore system allows the government to build a detailed career and promotional profile of each teacher and leader. Each promotional step from teacher to principal, for example, involves a 360 degree appraisal by the same or similar group of appraisers, including department head, principal, superintendent,

and MOE officers. The system, thus, gets to know the strengths and weaknesses of individuals extremely well, resulting in few mistakes over promotional appointments. Unlike the system of self-selection for promotion still used in the UK, Singapore adopts a more proactive approach of spotting, nurturing, and sponsoring leadership talent early on (Dimmock & Tan, 2013).

If MOE policy is to have more diverse schools and curricula (e.g., specialist schools), observers are asking, does the system need more principals with diverse values and talents? Moreover, does being a principal of different types of school – independent, autonomous, junior college, specialist, neighbourhood, primary/secondary – require different leadership roles and characteristics, and be more willing to challenge the prevailing orthodoxies? Where is the place in the system for creative thinking and decision-making in leadership? Can schools build creativity into teaching and learning – a basic requirement for the KBE if there is no appetite for changing conformist school leadership?

However, some commentators and even the MOE itself, are questioning whether the perpetuation of such a closed system of appraisal and selection of principals and aspiring principals is in danger of breeding a clone mentality and too much homogeneity among school leaders. Experienced and senior leaders "hand-pick" the next generation in alignment with their own image of leadership, and MOE values and policies. There are few if any "rebel" principals challenging the orthodoxy of the system. Is there a type of leader who is favoured – namely one who does not question the status quo? Is there a fear and risk-averse factor among principals in taking bold initiatives? Convergence and conformity are the order of the day. MOE values become principals' surrogate values. Does the system allow some autonomy and then choke it? Furthermore, given the high respect, even deference, for hierarchy, is it possible for leadership to be expansive or distributive? And given excessive administrative workloads, is it feasible for principals to exercise meaningful learning-centred leadership? These are major leadership issues that will increasingly need addressing.

Economists and the Singapore government realise that a successful KBE requires social mobility to meet the growing and diverse demands for skilled human capital. Yet, the income and wealth gap between the richest and poorest social groups in Singapore has widened, with the effect of slowing social mobility. Recent budgets in Singapore have accordingly started to address this disjuncture – for example, by redistributing income from high to low and middle earners, education interventions to help children from disadvantaged families, and more resources for lifelong education. In addition, recent education policy has aimed at greater equity. The MOE, for example, has begun to allocate good principals to poor schools, to push for greater diversity in socioeconomic background of students in elite schools by allowing leeway in admissions policies, and by investing more in childcare and kindergartens. Since market forces of inequality appear to be powerful and endemic in society, the question remains, are such counteracting government measures likely to be sufficient to increase social mobility?

Problems of inequity in Singapore, in particular, surface through its adoption of meritocracy as a guiding socio-political principle. A meritocratic system based on

educational achievement, not ability, favours children from high-income groups that have greater access to resources and opportunities. Schools and principals, in particular, have an important role to play in addressing manifestations of inequity in their schools by, for example, allocating the best teachers to the low-achieving students, explicitly valuing them and building their self-esteem and wherever possible ensuring compensatory resources are afforded them.

If Singapore principals are to play meaningful roles in counteracting inequity in their schools, the present structure-agency imbalance (in favour of the government as "structure") needs addressing. Not only are principals needed with strong beliefs and values in equity and social change, they need empowering as social agents. After decades of command-and-control, top–down micro-management of schools by MOE, how much has the principalship substantially changed? Principals are certainly encouraged nowadays to show more leadership initiative, but are they still curtailed by the frameworks and guidelines of MOE policy implementation? Is there an increasing tension between MOE control and school autonomy? As indicated earlier, Singapore is placed below the OECD average on a school autonomy index, while strongly endorsing autonomy as a key denominator of system success (OECD 2013a, 2013b, 2013c). Would the Singapore system perform even better if schools and principals enjoyed greater autonomy?

A further contentious issue is the practice of rotating principals every 5 to 7 years. Some principals welcome moving to a fresh school after this time period, feeling that they have maximised their contribution to school development. Others, however, wish to stay longer in their present school, feeling that the major programme of school reform they had embarked on would take 10 years or more. Given this range of responses, should MOE examine each school and principal on its merits, adopting a flexible approach? Good matching of principal with school is vital and involves taking account of principals' talents and interests on the one hand, and type of school and its stage in the development cycle on the other. Some principals fear that they are labelled by the MOE as good leaders of only certain types of school, such as those with less-academic intakes, when they would like a posting to a different school type.

Finally, as the age at which principals are appointed is lowered to late 30s and early 40s, principals can do three rounds of headship and still be in their mid-50s. They do not wish for another school headship, but neither do they wish to retire. At present, there are limited opportunities to use their experience, other than a rare posting to the MOE or the National Institute of Education of the Nanyang Technological University. The system could be more adventurous in developing system leadership roles, such as mentoring, school improvement partnership leaders, national leaders of education, and specialist consultant roles, as is happening in other countries so that high-achieving principals with experience can influence others.

Comparatively, while the recent MOE policy rhetoric has been to delegate more responsibilities to Singapore principals, they have comparatively little control over the three major resource "inputs" to schools: they do not appoint teachers or control the students entering their schools (other than a small percentage); the curriculum (other

than extra-curriculum) is prescribed; and they have very limited powers over budgetary matters. Significantly, the continuation of high degrees of centralised control, steering, and monitoring by the MOE have obviated the need for the adoption of neo-liberal policies. Hence, parental choice, school competition for students, school-business partnerships, and sponsored free schools and academies – favoured by Anglo-American governments as policy instruments to enhance school improvement – are not evidenced in Singapore.

Conclusion

This paper has sketched and lauded the many admirable features and achievements of the Singapore education system. Like all school systems, the Singapore MOE is aware of the need for its high-achieving school system to keep abreast of changes in society and economy. This paper argues that school systems, including Singapore's, are aware of the need to re-design, and that the design process needs to be coherent, holistic, and transformational. An understanding of schools as organisations is an essential part of transforming schools. The school design model (Dimmock, Kwek & Toh, 2013) offers an appropriate technology and methodology for schools to follow in undertaking the complex and lengthy re-design process.

Even though the smallness of the system has enabled the continuation of strong central control over schools as a reform stimulus and at the same time avoiding the need for adoption of many neo-liberal policies, there is a major challenge for leaders at system and school level to re-design schools, especially when there is a history of success. In particular, this paper has focused on the many challenges confronting school leaders going forward as the education system evolves to keep pace with changes in Singapore's politics, society, and economy. Predictably, finding a new settlement between meritocracy and equity is likely to be at the forefront of the political and social agenda while at the same time preparing a workforce for the emergent KBE. Leading Singapore's schools will become ever more challenging in trying to meet the needs of an ever-increasing aspirational, expectant, and diverse people.

Note

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