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Leadership in Times of Pandemics: Reflections From Singapore

David Hung, Jun Song Huang and Chloë Tan

Abstract: The COVID-19 pandemic is compressing the timeline for Singapore’s digital transformation in education. Reflecting on the implementation of Home-Based Learning (HBL) during the pandemic, we examine three barriers that inhibit digital transformation and technological implementation in education with leadership considerations: the first order barrier is infrastructural and can be mitigated by leadership foresight; the second order barrier concerns design capabilities of teachers which can be mitigated by tight-but-loose calibration; and the third order barrier deals with sustainability which can be mitigated by ecological leadership. The tight-but-loose calibration optimises the ‘tight’ system-led innovations such as Student Learning Space (SLS) for efficient deployment and for equitable access of high quality online resources for students; and ‘loose’ opportunities for teacher-led innovations on learning designs within and beyond system-led innovations to nurture teacher agency and professionalism. We posit that ecological leadership is key to sustaining deep change together with the ‘tight-but-loose’ system calibration.

Keywords: Online learning, system leadership, ecological leadership, tight-but-loose calibration, home based learning, digital transformation

Introduction

As we reflect on the current pandemic, we come to grips with human mortality and the frailty of humankind. Despite our technological and scientific advancements, previously unshakeable billion dollar institutions and industries like airlines, tourism, and oil are now teetering on the verge of bankruptcy in a matter of months. In these uncertain times, we really develop the latitude to come to an accounting of what matters more than others. There is an urgent need to prioritise what is crucial and what is urgent. This prioritisation is inextricably linked to good leadership and courageous action.

Although the COVID-19 pandemic is a crisis, it also presents opportunities. Since its outbreak, Singapore has been both lauded and vilified in the news. Our strong governance and courageous action by our leaders to do what is right to flatten the curve, even in the face of what is unpopular, has stood us in good stead in terms of combating the virus and making
sure life goes on. The Deputy Prime Minister (DPM) Heng Swee Keat (2020), in his parliament address made reference to a McKinsey (2020) study showing that five years of digital transformation had been compressed into eight weeks due to the COVID-19 pandemic. With Home-Based Learning (HBL) being part of the new normal, the timeline for digital transformation in education will be compressed as well. In this paper, we delve into observations on the ground and our reflections on technology-mediated HBL that schools have implemented swiftly.

The general public may perceive three gaps associated with digital transformation in Singapore education arising from the HBL episode recently: a lack of resource equality; perceived variations in how teachers engage students in HBL; and inadequate alignments between central agencies and local partnerships. All three perceived gaps indicate the need to think more deeply about how to sustain digital transformation in education where leadership is imperative. We weave these leadership tenets within our recommendations on overcoming barriers to technological-cum-curriculum integration.

In terms of resource equality, especially for low income families, the Ministry of Education (MOE) has loaned out over 20,000 devices (MOE 2020a) in addition to opening school premises for students who need additional support (with more than 4,000 students continuing to go to school during COVID-19 circuit breaker period according to MOE, reported by the Channel News Asia, April 20, 2020). In terms of teacher variations, MOE has, for the last decade, been working to heighten teacher capacity for use of education technology (EdTech). In terms of partnerships with parents, a substantial effort has been put in place by the MOE recently to connect with parents and prepare them for home-based learning. These efforts include the establishment of school-home partnership guidelines; up-to-date information on back-to-school arrangements, national examinations, cyberwellness, and other advisories.

Extant literature identifies three barriers influencing EdTech implementation and digital transformation in education: the first order, which is infrastructural in nature; the second order which speaks to the design competencies of those who provide for learning and instruction, in other words, the design abilities of teachers and how they use technology effectively (Ertmer 1999); and the third order, which concerns the sustainability of interventions or implementations (Hung et al. in press), including sustaining design thinking by teachers (Tsai & Chai 2012).

Managing the First Order Barriers: Leadership Foresight

MOE’s development of infrastructure and resources for schools, such as the Student Learning Space (SLS) to be deployed system-wide, has narrowed the inequality gap in schooling. The SLS is an online learning portal that allows all students to have equal access to quality curriculum-aligned resources (MOE 2020b).
But when learning has to take place at home during a pandemic, inequalities in society continue to manifest. This is especially true for students from low income families who may have fewer supportive resources and peer support at home. Schools can provide additional infrastructural resources but they are not able to eliminate social inequality. Fortunately, even before the pandemic, MOE had accelerated the provision of laptops to all students, and all secondary school students would have their laptops by 2021 (MOE 2020a). Social Service Agencies (SSAs) have been working alongside schools in providing support for low income families (MOE 2019, 2020c). The launch of the ‘smart nation’ blueprint seeks to extend broadband access for all households through a stipend. Most of these infrastructure plans are already underway to empower education to be a more effective social lever. These efforts need to be sustained and expanded through sustainable ecologically enabled partnerships.

The development of SLS, the plan to provide laptops to all students, and the smart nation blueprint highlight Singapore leadership’s foresight and commitment in the digital transformation journey and that every child is enabled to be a life-long learner (MOE 2020c).

Managing the Second Order Barriers: Leadership for ‘Tight-But-Loose’ Calibration

Technology is not a silver bullet for education and digital transformation requires more than just resource provisions. Student-centred pedagogy requires teachers to be designers of learning, not just users of technology. For example, from time to time, a teacher may play YouTube videos in class to help students learn from video representations. Alternatively, the teacher may choose to use a flipped classroom design by asking students to watch the YouTube videos at home before the class and using the classroom time for deep discussion and problem solving. With the need to stagger students coming to school, and the starting times, for different cohorts due to COVID-19, flipped classroom design is an opportunity. The teacher’s pedagogical design determines how technology is used to support learning. The perceived wide variations in how teachers engage their students during HBL suggests that while technology is essential and equipping teachers with digital tools is necessary, both are not sufficient for high quality learning to take place. Innovative pedagogies have also taken place, including doing science experiments in the kitchen at home, and playing music instruments together online in a synchronous fashion (MOE 2020a).

When we analysed EdTech implementations especially those afforded by research, we observed numerous teacher experimentation efforts enabled by funding sources provided for researchers and teachers. EdTech research and development has always been more expensive compared to non-EdTech based interventions, and they are usually ‘fit for purpose’, and hence, cannot be always scaled up across curricular topics. Insofar as pedagogical experimentations in classrooms are concerned in the past decade, EdTech affords new pedagogical opportunities. They enable teachers to experiment with diverse forms of pedagogies that enable differentiated instruction and assessments for learning. While the
system may be uncomfortable with too much diversity, teachers and schools need to recognise that teacher professionalism is crucial with transformations in education, be it digital or otherwise.

More recently, as part of the insight for digital transformation in Singapore’s education, the MOE has been streamlining EdTech experimentations with greater consolidation, for example, through the development of SLS as system-led innovations. Understandably, consolidation aids in optimising and harnessing bottom up teacher and researcher efforts. During the HBL period, SLS has been instrumental in allowing for students to learn from home. Comparing with other education systems that struggle to revive educational television during COVID-19, the MOE’s consolidation in terms of system-led innovations has paid off. However our observations are that research in EdTech and teacher experimentations may have been sidelined, albeit not intentionally. Hence the fostering of bottom-up innovation in schools was also reduced. It might have particularly contributed to the perceived (wide) variations in how teachers engage students in HBL.

To optimise efficiency and innovation for better schooling practices including HBL, we propose that policymakers and school leadership consider making a constant tight-but-loose calibration (Thomson & Wiliam 2007). This includes the optimal calibration of tightening system-led EdTech innovations, such as SLS, for efficient development and deployment on the one hand, and loosening the space of innovation for teachers to innovate learning designs on the other hand. Loosening the space of innovation helps to continue nurturing teacher agency and professionalism, and develops their design thinking and related competency for innovative content cum 21st century learning.

We also need to calibrate teacher-led innovation within and beyond system-led innovations. This effort would create a pipeline of innovations beyond the tight SLS structure. Progressively, as SLS enhances over time, some of these teacher-led innovations may find their way into being integrated in SLS and others may remain outside the boundaries of SLS as useful supplements. These supplements may better prepare us for the next pandemic. In this regard, we argue for a need to revive funding opportunities for both teachers and researchers to experiment deeply with EdTech. Although more expensive in general, the payoff is that teacher competencies in design is developed through lived experiences and in demand-driven teacher learning opportunities, scaffolded and mentored by evidence based research and development. These competencies would then aid teachers in being more sensitive to learners of diverse profiles and needs. If we begin now, we can be better prepared so that in the next pandemic, the (wide) variation across teachers in HBL can be narrowed.
Managing the Third Order Barriers: Leadership for Ecological Sustainability

Sustaining digital learning requires a culture of innovation. It requires coordinated efforts at all levels, including school leaders and parents, not just MOE and teachers as we discussed earlier.

Singapore’s endeavours in ‘Future Schools’ speak to this point. This former initiative focused on innovative teaching approaches that leverage fully on EdTech and novel school infrastructure designs to bring about more engaged learning for students (IMDA 2019). What we have observed is that for EdTech to be sustained and scaled within schools, school leaders played a crucial role in creating enabling conditions that sustain innovations, chiefly the competencies in teachers in the design of inquiry based learning, apart from hardware provisions such as laptops. School leaders also needed to intentionally integrate EdTech interventions as part of their school’s mission, address curricular timetabling concerns, and develop innovation cultures and design thinking among teachers. These cultures go beyond preparing for exams, and support the 21st century learning policies of the MOE (2018). These principles are important for all schools in their respective digital transformation journeys ahead.

School-to-school networks, with the instrumental involvements of school leaders, have also been formed in enabling and sustaining a social-technological infrastructure for the support of teachers’ innovations and learning, and how they can be scaled and enacted in classrooms across schools (Hung et al. in press).

Careful trade-offs are needed to redirect some efforts from content mastery to fostering broader 21st century learning in students, enabled by technology. These are continued efforts across schools, albeit at different progressions, in the overall school system. Parental support for bold movements in such curriculum calibrations is critical. Society at large should not over privilege academic performances in terms of grades.

To sustain digital transformation with coordinated efforts at all levels, we need education leadership practices that reflect ecological patterns, processes, relationships and organising principles. According to ecological leadership (Toh, Jamaludin, Hung & Chua 2014), an education system consists of multiple ecological layers, including individual (e.g. teachers and head of departments), microsystem (e.g. classroom culture), mesosystem (e.g. institutional structure and culture), exosystem (e.g. partners) and macrosystem (e.g. national policies and cultural values). Ecological leadership aligns efforts by mitigating tensions and paradoxes within and across the subsystems in the ecology, leverages collective wisdom and resources emanating from any level of subsystem and fosters the emergence of new adaptive capacities for sustainability. More specifically, the leaders at every ecological layer act as a mediating layer to broker up (e.g. more macro) and down (e.g. more micro) and to forge partnership for deep change to take place and sustain.
Conclusion

In times of pandemics, we encourage teachers, school leaders, and policymakers to seize the hybridity of school- and home-based learning as an opportunity for digital transformation. We highlight the importance of foresight in education leadership, particularly for envisioning and resource planning with equitable outcomes.

We propose, in addition to tight and coordinated efforts in developing system-led innovations like SLS, to afford greater autonomy and agency for teachers to innovate learning designs both within and beyond SLS. We also put forth ecological leadership that school leaders and teacher leaders can forge partnerships in the educational ecology, including parents and other social service agencies, to foster and sustain deep change in digital transformation. Cultivating a sustainable ecology of education partners is important going forward, and this need has been intensified and made more urgent due to recent pandemics.

As a highly effective and productive education system, Singapore expects to continue staying ahead of other systems. But we are typically accustomed to tight centralisation and less comfortable with loose decentralisation efforts which may be grassroots initiated, thus we need to better understand how the two complement. Concomitantly, we are also oriented to structure, and less attuned to agency. We need to cultivate agentic behaviour and see them as opportunities for the system. Finally, we are not greatly comfortable with fostering diversity (apart from academic performances). We need to know how to strike a balance between tight and loose structures and mechanisms. System leadership in education is required to know how the system is culturally oriented towards by its historical past and present, and to find the balances between tight and loose in its implementations, chart the directions with future goals in mind, and calibrate the educational change journey supported by data or evidence from all levels of the system.

Exploring the above questions for a tight-but-loose calibration helps to shift our leadership thinking progressively towards system and ecological leadership. Teacher leaders, school leaders, and system leaders need to work in tight alignment in calibrating system policies as they are implemented in school divisions, clusters, and schools respectively. At every level of the system, we need leaders with acumen and courage with sensitivities to learners’ needs, and satisfying in particular the needs of the disadvantaged and marginalised is imperative.

To conclude, the COVID-19 pandemic has potential to compress the digital transformation in education. We highlight in this paper that leadership foresight in planning and developing system-led innovations and resources such as SLS is essential but not enough. To deepen digital transformation, teachers’ abilities to design for high quality learning should not be sidelined. Constantly maintaining a tight-but-loose calibration between system-led innovations and teacher-led innovations and between innovations within and beyond system structures (such as SLS) is critical. We also posited that sustaining digital transformation needs ecological leadership. Leaders at every ecological layer need to be the mediator to broker up and down and to forge partnerships for deep change to take place and sustain.
Although the current pandemic is a crisis, it also presents opportunities for deepening the digital transformation process and journey in education for the betterment of all students. Dialogues around leadership, particularly its systemic and yet locally enabled implementations (Hargreaves & Ainscow 2015) with moral courage, in times of pandemics for digital transformation can help us see and act on these opportunities. These opportunities are enabling sustainable and enduring changes in our education system (MOE 2020a).

References


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