

# Chapter 2

## Leadership from the Middle (LftM) in Singapore: Distributing Leadership Upwards, Downwards, and Sideways for Innovation Sustainability in Schools



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**Abstract** This chapter describes a middle-out community growth innovation phenomenon that leverages teacher leadership upwards and downwards from observing inquiry-based learning in schools. Based on the evidence of school change in the Singapore context, inquiry-based learning interventions act as the key drivers for change within a systemic perspective. The case examples illustrated involve technology for twenty-first-century learning, and the evidence for change requires the confluence of leadership, teacher learning, and student outcomes to sustain and scale efforts. The leadership from the middle at every level of the system is needed to evolve and propel change. The tenets and key hypotheses of capability building, community growth, and carryovers of cultural and technological supports are described. In summary, leadership from the middle is thus about micro-level apprenticing/mentoring, meso-layer alignment of ecological fluencies, and macro-level systemic thinking that all cohere in tandem sideways, upwards, and downwards percolation of expertise, practices, and epistemic beliefs.

### 2.1 Background

The Singapore education system has been progressively emphasizing student-centricity in classrooms (Ng, 2008) and sound pedagogy over teacher-centricity in the last decade. But this shift goes to the core of instructional practices that have been ingrained in the educational system since the 1960s. While pockets of change can occur, sustaining student-centricity—often catalyzed by pedagogical innovations—requires significant leadership entailments both at the school and teacher levels. This chapter illustrates teacher and school leadership in believing that student-centricity is beneficial to the students—especially from less advantaged family backgrounds—and how structures and processes are set up for teacher mentoring and apprenticeship for the appropriation of skills necessary for sustaining change. This teacher (and

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E. R. Koh and D. W. L. Hung (eds.), *Scaling up ICT-based Innovations in Schools*,  
Studies in Singapore Education: Research, Innovation & Practice 3,  
[https://doi.org/10.1007/978-981-16-4469-6\\_2](https://doi.org/10.1007/978-981-16-4469-6_2)

school) leadership as connoted in this paper is characterized by “leadership from the middle.” But teacher leadership cannot be divorced from the larger context of the school and its ethos—the “culture of care” for the student. Because change is difficult in the context of twenty-first-century learning, with schools already well-poised to deliver academic results and PISA scores, moral courage and purpose are needed by the leaders.

In this chapter, we discuss how it is critical for leadership to be distributed not just downwards from senior management to give agentiveness to those who enact the innovations, but upwards and also sideways. Traditional conceptions of distributed leadership suggest a decentralized model (Tan & Ng, 2007), however, we argue from the Singapore case that a more nuanced understanding of the cultural context is needed. In addition, the paper also argues for school leaders developing a strong moral purpose in their school’s instructional decision-making, in particular on issues of equity in spite of the challenging demands (perceived or otherwise) imposed on them for achieving academic results. However, moral purpose alone cannot sustain change in instructional and school practice(s) unless there is leadership that is able to implement the necessary mandates for sustainability with moral purpose. These practical implementational leadership stances include being able to think systemically (i.e., systems thinking) yet being grounded. This paper argues for the complementary perspectives of grounded and systemic leadership, yet motivated by a moral purpose which is needed of sustaining student-centricity in classrooms, and for transforming schools in new norms relevant for the twenty-first century and for preparing learners holistically, including being cognizant of character and citizenship development. The recent COVID-19 pandemic speaks on the importance of being civic-minded and socially responsible.

The Office of Education Research (OER, National Institute of Education) has been seeding various pedagogical innovations in classrooms across schools in Singapore over the last decade. These innovations involve fostering disciplinary ways of seeing meanings. Common among the innovations is the use of language-oriented scaffolds in enabling critical thinking. For example, for science disciplinary ways of seeing meanings, scaffolds include: “My hypothesis is ...”; “The evidence to support my theory includes ...”; “I need more information on ...” These are language scaffolds to prompt students to think along with certain perspectives. We recognized that not only in the discipline of science were these scaffolds adopted but in mathematics and also in language, including character and citizenship education. In mathematics, we have: “What or which problem solving stage are you in now?”; “Do you understand the problem?”; “What exactly are you doing?”; “Why are you doing that?” When it comes to specific heuristics, the teacher would prompt the student with scaffolds such as “Why don’t you try with ... (with regards to a problem specific)?”; or that the teacher would give problem-specific hints such as: “Think in terms of smaller number... what numbers will you try?” These language-oriented prompts create in students the thinking along; for example, George Polya’s stages in problem-solving. Prior to such interventions, it is common place for teachers to give answers too readily to problems or to teach formulaic procedures rather than the process thinking required. Due to the need to cover the curriculum and to help students ace

the examinations, procedural knowledge was probably overemphasized compared to conceptual knowledge. In citizenship and character education, language scaffolds are given to students in first-person perspectives, rather than the third person. For example, “What would you have done in such a situation?” Such a view is consistent with first-person role-playing pedagogy in game-based learning theories.

According to the Ministry of Education (MOE) policy, every teacher is a character and citizenship teacher (Ministry of Education, 2014). Instructional materials from the Ministry of Education (MOE) often manifest instructional prompts in third-person perspectives or voices, for example, “What would Jane (or John) do this instance (of a particular situation requiring moral judgements)?” Instead, in our interviews with teachers, they found situating these decision-making scaffolds and prompts in the first-person voice appears to be more effective in students being more agentic in their answers.

We have observed that teachers adopt these student-centric instructional/learning strategies for the period of the inquiry interventions, but many of them often default back to teacher-centric approaches when teaching workloads increase or when nearing the examinations. While teachers undergoing such transformative pedagogical interventions recognize the efficacies of such approaches (as expressed in interviews), sustainability is challenging. To which, teachers have to manage a host of demands such as completing the syllabus, meeting certain assessment grade standards for their students, preparing students for procedural accuracy and fluency for tests and exams, and the like. These requirements can be characterized as performance pedagogies, preparing students for the high-stakes examinations at specific junctures of a student’s academic trajectory. In Singapore’s education system, typical students undergo these examinations in grades 6, 10, and 12. While there are policy intents to mitigate the stress in these examinations, changing the public or parent’s anxiety is far from simply an implementation issue due to years of cultural habituations. To many teachers, preparing students for the examinations well is the responsible and ethical demand as doing well in high-stakes exams is a social lever to success. Philosophically, while student-centricity in pedagogy is morally right, it could be a perceived alignment or misalignment between *performing* (to the test) and *learning*. Even if school leaders and teachers cognitively recognize the tension between the two, being able to skillfully execute learning for a typical class of 25 students takes time to develop.

We discuss how schools can sustain these interventions despite meeting the demands of performance requirements for examinations. In the interviews we conducted, we have even encountered schools who believed in such process-oriented pedagogies that they overcame apparent tensions and dichotomies between the inquiry- and performance-oriented pedagogies. While most schools do not undergo a whole-school reform toward these efforts, they engage in a staged scaling effort within the school. These scaling efforts are also not done en masse and are usually done on a per subject or discipline basis within schools. These efforts are done progressively with significant support from school leaders as schools have to manage the learning gains underpinning inquiry-based approaches that students do not perform worst off for the examinations. We discuss leadership for sustainability as

requiring school leaders to distribute leadership downwards to teachers; and yet at the same time, teachers are to align what they do with their school leaders (distributing upwards). Hargreaves and Fullan's (Leadership from the middle: a system strategy, p. 24) notion of "leadership from the middle" speaks to this upwards and downwards distribution of leadership for the sustaining of inquiry-based learning in schools.

In the ensuing sections, we discuss how ecological leadership mitigates power distance created by systems that are more hierarchical than flat, and how apprenticing leadership facilitates collectivism or the corporate desire to come together for a greater cause. Power distance and collectivism are two social-cultural characteristics evident in the East-Asian psyche. Apprenticing leadership enables teachers to undergo transformative learning experiences. At the same time, ecological leadership mitigates the tensions that arise from apparent contradictions between societal expectations that are typically facilitated by performance pedagogies (which may appear similar to drill and practice, but in fact, they are much more) and twenty-first-century process-oriented pedagogies (e.g., questioning, argumentations, etc.), which may not always be perceived as necessary for the examinations. We argue that distributing leadership sideways is manifested through apprenticing leadership, and upwards-downwards is mitigated by ecological leadership.

In the later parts of this chapter, we would delve into systemic leadership and that of moral courage for sustaining change for the betterment of students.

## 2.2 Literature Review

Historically, Singapore has been a centralized system; however, in recent years, initiatives have been made to decentralize the system. In a centralized-decentralized system, the Ministry of Education controls strategic direction, curriculum content, budget, resources, and facilities while decentralizing schools to have autonomy in accommodating diversity, flexibility, and innovation in curricular matters.

A system-level perspective can also be rooted in principles of:

- Centrality of instructional practice
- Capacity building
- Distributed expertise
- Mutual dependence
- Reciprocity of accountability
- Reconstruction of leadership roles and functions.

Thus far, the Western-centric literature has a dearth of studies on leadership nuanced from a whole system view. Hence, the Singapore case aims to layer the system policy perspective not just as a context but on how the implementation of change is facilitated. A system-level perspective can be rooted in principles of alignment of policy and practice all through the system (up and down the hierarchies).

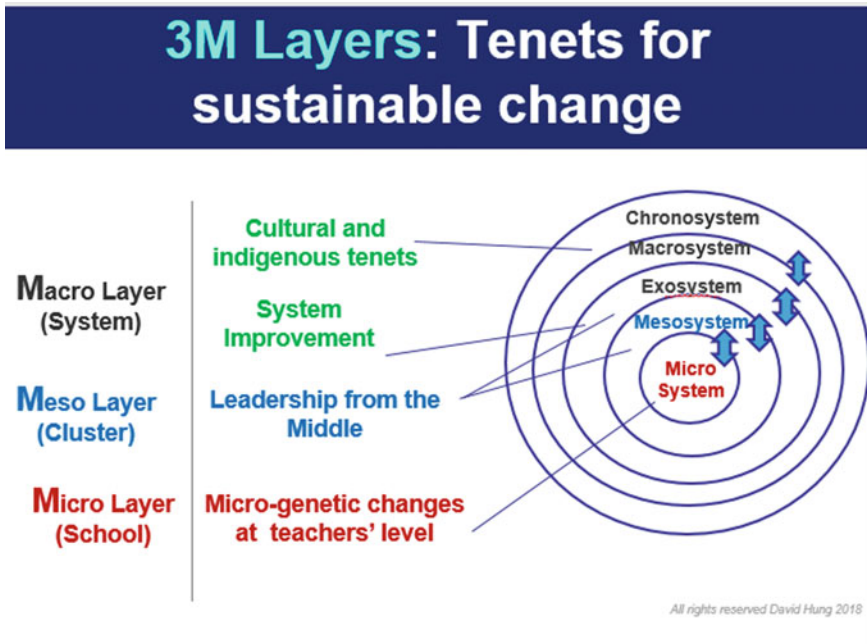


Fig. 2.1 Three levels of a system

Referring to Fig. 2.1, the 3 M layers, we see tenets of sustainable change within the macro, meso, and micro-layer which also describes the systems that exist within the layers.

In referring to cultural and indigenous tenets, indigenous tenets mainly speak in terms of native characterizations in recognition of variations in the functioning of education systems and that their historical, national, and regional policy contexts that will exert different degrees of influence on institutions’ work and therefore on the role of leaders in schools (Day & Sammons, 2013). Such indigenous knowledge is known as **local knowledge** that is unique to a culture or society, and the other names for it include: “people’s knowledge,” “traditional wisdom,” or “traditional science...” (Nakashima et al., 2000, p. 12).

Moral courage is a willingness to take a stand in defense of principles or conviction even when others do not (Miller, 2000, p. 36). A coherent policy framework to improve student outcomes is not sufficient albeit necessary (Day et al., 2009). Significant research in the United Kingdom indicates that the moral aspect of a principal’s leadership ability marks out the high performers from the rest. The added impetus, i.e., the moral purpose, is provided by the vision, values, qualities, diagnostic skills, strategic acumen, management competencies, and behaviors of individual leaders (p. 194).

Fullan (2002, 2003) identifies the four levels of moral purpose in educational leadership as:

- Effecting a change in the lives of students.
- Committing to reducing the gap between high and low performers within your school or cluster.
- Contributing to reducing the gap in the larger school ecosystem.
- Transforming the working (or learning conditions) of others so that growth, commitment, engagement, and the constant sparking of leadership in others are being fostered.

On a micro-level, teachers face a constant moral dilemma as they need to strike a balance between the needs of the individual against those of the class. On a meso-level, for example, lead teachers need to make decisions on time and resource allocation to teachers and schools. On a macro-level, for example, school leaders need to make moral decisions to balance between implementation of the curricular innovations and policy to best fit their school ecology.

### 2.3 Systemic Leadership

Systemwide and system-pervasive leadership is democratic leadership (Crow & Slater, 1996). Systemic leadership is about the leadership at all levels of the system and involves all stakeholders in the system. For systemic leadership, each participant must be a proactive, willing exerciser of both followership, which is also about the decision to cooperate (p. 21), and systemic leadership. This leads to a diversity of opinions and viewpoints which causes disagreements, conflict, and misalignments. Systemic leadership mitigates this as leaders step in to provide direction. Leadership is often as much about balancing, following, and leading and often blending the two, i.e., the necessity of cooperation with the need to coordinate (p. 20). School leadership must pervade the school system, empowering people in each classroom, school, and community (p. 23). Building choice in the curriculum empowers students in choosing what they wish to learn (p. 26).

According to Starratt (1998), leaders want to transform the school from an organization of rules, regulations, and roles into an intentional self-governing community. In such a community, initiative and interactive spontaneity infuse bureaucratic procedures with human and professional values (p. 130).

### 2.4 Leadership From the Middle (LftM): A Middle-Out Community Growth Model

In our studies of implementing educational innovations in the Singapore school system, we can observe instances of leadership from the middle of which case studies are described below. Figure 2.2 illustrates instances of LftM in our local school system.

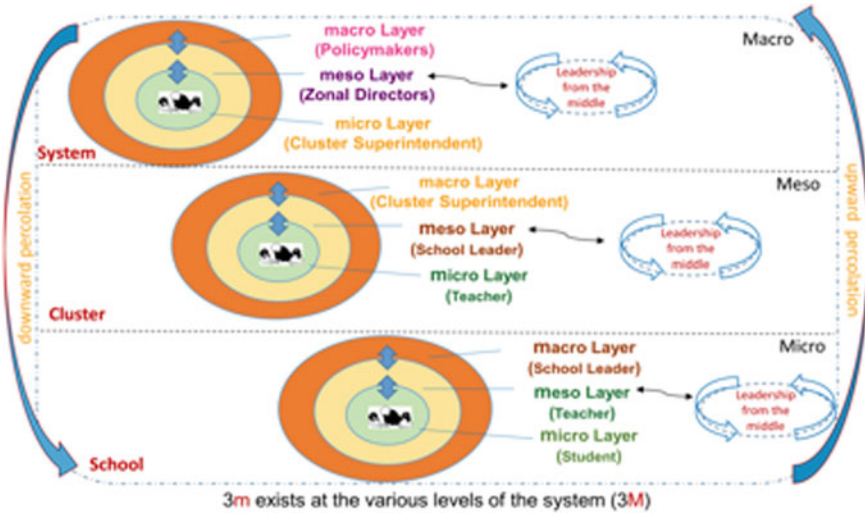


Fig. 2.2 Levels of the Singapore school system with leadership from the middle at every middle of the system

“Leadership from the Middle can be briefly defined as: *a deliberate strategy that increases the capacity and internal coherence of the middle in as it becomes a more effective partner upward to the state and downward to its schools and communities, in pursuit of greater system performance. ...*” (Fullan, 2015, p. 24) “... it implicates the whole system starting from the **middle out, up and down**. In addition to our system-use of the concept, LftM can and should be used at other levels. Schools, for example are the middle if you use a within-district focus. Teachers, students and families are the middle when you think of intra-school and community work” (Fullan, 2015, p. 26).

### 2.4.1 Hypothesis 1

We thus hypothesize that LftM is mostly conceived from Western-centric literature with little considerations of issues such as power distance. Power distance is defined as “the extent to which the less powerful members of institutions and organisations within a country expect and accept that power is distributed unequally” (Hofstede, 1980). Singapore’s traditional Confucian background and the syncretic East–West cultural values present a seemingly paradoxical system of hierarchy and collectivism from a Western-centric lens (e.g., Rowley & Ulrich, 2012). These values are largely represented by views such as respect for elders (hierarchical), collective good

(Walker & Dimmock, 2002), acceptance and expectation of unequal power distribution (Hofstede, 1997), and high(er) power distance when compared to Western societies. East-Asian leaders orientate toward harmony, collectivism, social hierarchy, and relationship-based trust (Craven & Hallinger, 2002). "...the social legacies of Confucianism can turn citizens toward communitarian democracy under which individual members collaborate instead of competing against each other" (Sing, 2013, p. 563).

While the cultural nuancing is critical, the general principles of leadership for sustained innovations in schools are consistent. Large-scale, sustained improvement in student outcomes requires a sustained effort to change school and classroom practices, not just structures such as governance and accountability. The heart of improvement lies in changing teaching and learning practices in thousands and thousands of classrooms, and this requires focused and sustained effort by all parts of the education system and its partners (Levin & Fullan, 2009, pp. 189–190).

#### 2.4.1.1 School Improvement Tenets

School improvement tenets guide the course of change when innovations are introduced. Schools are capable of improving themselves *when there is a coherent relationship with the broader educational context with a system-wide change strategy* (Levin, 2012). Within the Singapore education context, our schools are guided by the school cluster at the meso-layer and the Ministry of Education at the macro-level. "Guiding coalition" (Levin, 2012, p. 18) is the idea that *key leaders at different levels, politicians, administrators, teacher educators, teachers, all understand and articulate the change strategy in very similar ways so that leadership at all levels is mutually reinforcing. Success depends on changes in the actions and beliefs of teachers* (OECD, 2009). Promoting and participating in teacher learning and development has a significant effect size of 0.84 (Robinson et al., 2009). *Factors and conditions of the (indigenous) context* are important in system improvement and related theories of action/implementation (Fullan, 2009, 2015; Hung et al., 2015), including *system infrastructure to support system-wide improvements* and the ability of an education ministry to lead and support the work (Levin, 2012) are all important tenets.

Teachers are at the center of the change process. As such "leadership from the middle ... [is] *a deliberate strategy that increases the capacity and internal coherence of the middle as it becomes a more effective partner upward to the state and downward to its schools and communities, in pursuit of greater system performance. ...*" (Fullan, 2015, p. 24). The teacher is the middle in many of the leadership enactments in schools. Schools are in the middle when it comes to being a partner upwards to the district or school cluster. In other words, the need to be ecologically consistent upwards and downwards is the critical role of the leader in the middle.



### 2.4.2 Hypothesis 2

To summarize the aforementioned constructs, we claim that varied researched approaches, each preceded by different “adjectives” such as the list below, do not sufficiently account for East-Asian cultural tenets, and are too broadly construed to attend to the gaps created in change and transformations:

- Change leadership (e.g., Wagner et al., 2006),
- Connective leadership (e.g., Lipman-Blumen, 1988; Walker, 2011)
- Constructivist leadership (e.g., Lambert et al., 1995)
- Curriculum leadership (e.g., Glatthorn et al., 2005)
- Distributed leadership (e.g., Harris & Spillane, 2008)
- Ecological leadership (e.g., Brymer et al. 2010; Toh et al. 2014)
- Educational leadership (e.g., Dimmock & Walker, 2005; Leithwood & Jantzi, 1999)
- Instructional leadership (e.g., Hallinger & Heck, 1999; Hallinger & Kantamara, 2000)
- Sustainable leadership (e.g., Hargreaves & Fink, 2004)
- System leadership (e.g., Caldwell, 2011)
- Teacher leadership (e.g., York-Barr & Duke, 2004)
- Transformational leadership (e.g., Bass, 1997; Howell & Avolio, 1993; Day & Sammons, 2013).

We theorize that the above leadership constructs have a dearth of understandings in terms of how LftM can be appropriated for upwards (in a hierarchical system) leadership. We hypothesize that LftM in the context of East-Asian cultures requires more “upwards” (trust-building and ecologicing) leadership, and sideways (in terms of apprenticing) compared with Western systems.

### 2.4.3 Hypothesis 3

Much of Western literature on leadership inadequately connote the complexities of innovation change and “scaling”. In other words, no single model of leadership satisfactorily captures school and teacher leader enactments, rather leadership trajectories are evolutionary in nature within the context of change.

What would probably help or work better is a leadership whose unit of analysis is not an individual nor is it non-person related. LftM has characteristics such as distributed, systemic, centralized, and decentralized, yet requires personal attributes such as moral courage and the skills to enact the change.

### 2.4.4 *Teacher Leadership*

Teacher leadership should play a very important role in brokering between teachers and school leaders especially if the change in substance is an instructional one for the betterment of students' learning. While we hypothesize that LftM is a construct-concept, the person of the teacher as “standing in the gap” as leaders from the middle at every middle of the system plays an important role.

What is teacher leadership? Simply put, it is an evolving definition “Today, leadership roles have begun to emerge and **promise real opportunities** for teachers to **impact educational change**—without necessarily leaving the classroom” (Boyd-Dimock & McGree, 1995). Harris & Mujis (2002) included **four dimensions** in their definition of teacher leadership, namely **brokering**, which is managing how teachers translate principles of school improvement into classroom practice; **participative**, which is to ensure teachers feel part of, and own, change and improvement (fostering collaborative ways of working); **mediating**, as a source of expertise and information, the teacher leader draws on additional expertise and external assistance; and **relationships, which is** forging closeness with individual teachers, to underpin mutual learning. Teacher leadership is more about “...the authority to lead is **not exclusively located in formal positions**, but is **dispersed** throughout the organization....” Some scholars conceive the nature of teacher leadership as an **influence-lateral, upwards or downwards** regardless of whether it is formal or informal leadership. Learning in context leads to cultural change (Elmore, 2004) explains that as teachers embrace innovations in their pedagogical practices within the classroom and school and even the cluster/system context, this results in an incremental cultural shift. Day and Sammons (2013, p. 2) state that school leaders “play an important role in establishing the conditions, structures, cultures and climate for professional learning and development in their schools” (p. 2). To reiterate, we believe that in Singapore's context, we need more teacher leaders to engage in upwards regulation and this requires the teachers to have moral courage, wisdom, and social capital in the midst of the realities of power distance.

In our earlier studies (Hung et al., 2013), we also observed another important distinctive characteristic that requires teachers who undergo the change-sustainability problem. Teachers have to have an epistemic change if they were to sustain inquire student-centred practices. Hung (1999) found that the apprenticeship learning process progressed from a state of tolerance to acceptance and finally cumulating in signs of epistemic change. Epistemic change occurs for teachers when they undergo an initial phase of “tolerating” the assigned role of undergoing discussions within professional learning communities engaged in inquiry pedagogy, then coming to grips with the tensions underpinning change and the struggle to “let go” of their epistemic stance(s), and this phase is followed by experiences and satisfaction when they see for themselves the fruits of their learning (Hung et al. 2018).

## 2.5 Methodology

This qualitative case study involved ethnographic observations and focus group discussions, with the interview participants comprising cluster superintendents, principals, vice-principals, key personnel (KP-HODs), lead teachers (LTs), and teachers. LTs have the specific assignment to work across a cluster of schools in order to apprentice teachers in the student-centred inquiry pedagogies. This study documents efforts made by LTs in particular as they engaged as teacher leaders from the middle, and we particularly highlight the efforts in distributing leadership upwards.

The lead teacher scheme is part of a specialized teaching track in the Singapore school system which enables teachers (and not just school leaders) to reach the pinnacle of their careers being good at the craft of teaching. The pinnacle of this track is being a principal master teacher.

Each of the interviews was coded and categorized into themes. From Spillane (2006), *learning in context changes the context itself*, our case study also found that both improvement processes and outcomes dialectically co-inform and co-evolve and we also found an intertwining relationship between leadership, curriculum and pedagogy, and teacher professionalism.

### 2.5.1 Cluster of Schools

These observations were documented during networked learning communities (NLCs) (i.e., teachers collaborate across the cluster of schools) and professional learning communities (PLCs) (i.e., teachers collaborate within schools and within-subject disciplines) over a six-month period. In the reported interviews we use professional learning communities and professional learning teams (PLTs) interchangeably as this is how our study's participants meet. NIE researchers played the roles of a critical friend sharing insights and observer providing input on a science inquiry-based learning topic for the design, review and student artifact analysis in 2018. We observed monthly NLC sessions and weekly PLC sessions.

The data collection involved a series of interviews conducted with the cluster superintendent, school leaders, key personnel such as the heads of departments (HODs) and school staff developers (SSD), lead teachers (LT), and teachers who participated in the cluster deep learning journey. Sample interview questions can be found in Appendix 1.

#### 2.5.1.1 Findings

The findings of our case study can be summarized in three broad areas, namely at the micro, meso, and macro layers of the system (see Figs. 2.1 and 2.2), and they apply to the lead teachers and teachers, school leaders, and cluster steering committee (for spearheading the intended goals), respectively.

### 2.5.2 *School-Level Micro-Layer (Teachers)*

Some of our findings from observations at this level include observing apprenticing leadership in action, both in formal and informal settings and also within the school-to-school networks. In scaffolding individual epistemic change of the teachers, we documented teacher's learning trajectories, for example, on how LTs and Heads of Departments (HoDs) did the apprenticing work: "We have to explain to them [the teachers] why we are doing and then we have to tell them how we can benefit, that kind of communication. And then we have got to do it with them. It's just walking the talk" (HoD A).

Platforms such as PLCs or PLTs create space and openness for conversations and an open-sharing culture that fosters apprenticing processes such as learning from each other, questioning each other, observing each other's lessons, and gradually creating a culture of trust among the teachers. Teachers participate in PLCs and PLTs by dialoguing and bouncing off ideas in these spaces. Due to in situ professional development and peer apprenticing in such time periods, they engage in the enculturation of beliefs by teachers resulting in their epistemic change trajectory which enable them to implement innovations in classrooms to improve students' learning experiences.

Strategies for the creation of protected time lead to open discussion, share on-the-go, walking the talk. We found that teacher outcomes and learning needs are catered to by the design skills of teacher capacity to adapt, redesign curriculum or pedagogies, differentiate instructions, facilitation skills in the classroom and the PLCs, PLTs, epistemic shifts, and in analyzing student artifacts. In short, we found that teacher leaders, in their endeavour to cultivate change both for themselves and for their students, were at the heart of the change process.

Not only are LTs involved in helping and supporting teachers teach and learn better in the journey of relooking at student-centred learning and they are also focused on what can be done to bring that about in the classrooms and how that could look like. In other words, not only do they apprentice their cooperating teachers in the PLCs, they scaffold them and give them assurances in actual classroom enactments. Such enactments are the sideways distribution of leadership.

The lead teachers are also observed to help in facilitating different perspectives when instructional dialogues occur. In an interview with a lead teacher [A]: "Because generally, practices breed practices, assessment drive practices. ... Being very conscious that our teachers have developed very strong instructional strategies to bring about certain outcome in terms of teaching all these years. ... see different perspectives and engage them to see what is the mindset that they are looking at and compare to what it is" (Lead Teacher A).

In the same interview with the lead teacher [A], he shares that shifting mindsets is part and parcel of his work with teachers. "I can actually shuffle the topics or shuffle the things so that with this limited time, how I can maximize my ability to help teachers learn, pupils learn." The lead teacher makes teachers realize certain things and to see that "we need to recognize that as we become facilitators, we really need to facilitate the growth and not facilitate the answer." Facilitating the growth

of teachers means changing the behaviour of teachers so that they stop expecting answers and being told what to do to think about the solutions to the problems. The lead teacher also discussed templating versus designing, with his stance being that templating, while efficient in cascading down to many teachers, ends up in “locking down” teachers, while on the contrary, the nature of design means contextualized needs, which means teachers need to analyze their students’ needs. Challenges faced by the lead teacher involved time to work with teachers and buy-in of curriculum innovations where teachers will learn and be enculturated in the design competencies to see meaningful changes in their classrooms.

Thus, “walking the talk” for teachers involves evolving teacher design skills, epistemic change, protected time, open culture for sharing, and these processes are facilitated by LftM principles of sideways percolations or distributions as aforementioned. The work of lead teachers and the work of heads of departments are overlapping especially when it comes to instructional enactments. While HoDs are on the school leadership track and lead teachers are on the teaching track, the level through which they function whether within or across schools is similar. In our observations, it may be quite prudent for HoDs to switch tracks to be lead teachers as being in the school leadership track exposed them to management perspectives which are necessary for upwards and downwards percolations of leadership when learning becomes the epitome of what schools do. In a nutshell, learning cannot be neatly divorced from management and vice versa. Deliberate and intentional cross-pollination between the different tracks in the Singapore education system is crucial. LftM is a 360° distribution of learning management leadership to be successful and relevant to the people around at the very middle of the system where they are situated.

### ***2.5.3 School-Level Meso-Layer (HODs and LTs)***

An open culture in schools as facilitated by school leaders results in and comes about due to trust-building, more professional dialogue, bouncing off ideas and forming collective wisdom and fresh perspectives when teachers of different schools come together and brokering upwards with the management. Apprenticeship in schools means walking the journey together, handholding and talking things through, and working with teachers to figure things out bit by bit. These apprenticing leadership enactments are not just on instructional oriented activities but as discussed earlier overlapping into management, and the power distance cultures and phenomena.

Teacher leaders, lead teachers, and HoDs often have to “stand in the gap” (Lead Teacher, B), where they communicate upwards and downwards. This horizontal percolation is mediated by teacher leader-in-the-middle mediating upwards and downwards for ecological consistency, which communicates and makes evident the examples of good work at department and classroom levels to spread awareness.

From our study, when teacher leaders are able to spread inquiry practices inter- and intra-cluster-wise, they grow professionalism in their fraternity. Working with school leaders they engage in culture envisioning and sense-making with teachers,

and in the process enable teachers to come to a realization of the need for change. Teacher outcomes and learning needs are met when ecological leadership is in place. Growing people professionally is realized when quality interactions are maximized through structures such as PLCs and PLTs that cater to teachers' need for professional dialoguing.

In summary, standing in the gap for teacher leaders in their apprenticing and ecological leadership work means good facilitation of enactments, growing expertise of teachers, sense-making of policy and practice, and enabling trust and open culture. A lead teacher, in his apprenticing work, describes it as "having somebody to walk the journey with them, helps them to see it faster, engage them to discuss through their concerns. And it is important that the person who does this also have the experiences of what they are actually looking at and helping them to see both sides..." (Lead Teacher, C).

The lead teacher [C], in describing trust in apprenticing and ecologizing, "When we came into school, when I came into school, one of the big difference is first, *gaining the trust of the teachers*, that we are here as part of the team. We forge a new vision of the school and the forging of this vision, the acceptance of this vision and direction needs buy-in and needs convincing to say that we are taking a bold step and *working with school leaders*, the enculturation becomes key. After the enculturation, the need to also look at possibilities of how this can be happening instead of telling them what they have to do and *working with them to figure out bit by bit how this comes about with certain frames put inside, giving them space to work within their own, becomes also very important because then that is how we build trust with the teachers.*"

The lead teacher [C] further shares that it is a matter of beliefs and going into deep learning. "*But for the change to be enduring, the first engagement and the basic foundation in the engagement has to happen in beliefs. And that takes time. ...* Because they need the talking through and unpacking in the review session process about what makes sense to catch on and the facilitation of this, *providing the frame for them to rethink* it in a different perspective becomes important. We assume that teachers know how to reflect. They do reflect in a certain way but perhaps not in the kind of...*because if we want people to think deep and work deep, to make sense of things, rather than replicate and produce things. We have to actually show them how to do it and that is an essential thing.*" The lead teacher's [C] opinion on beliefs, deepening of learning and context were as follows: "The right thing is if we have the right beliefs and the right tenets of practices, scaling is possible. If the beliefs and practices and tenets of what is teaching and learning doesn't change, bringing the lesson packages and resources to another school is just blind replication. A robot could do better than the teacher in that aspect. So what we are working with the teachers now is that we are teachers, not robots. We are not looking to replicate. We are looking to understand certain things, and find certain way of doing things relevant to you and your child. And because of that, the contextual engagement, being able to be there, apprenticeship for involvement for contextual discussion becomes key. I think at the initial part, yes. And as we go further to push the boundaries of what could deep learning, active learning or teaching and learning in certain pedagogical

transformation look like. That portion will have to be very intensive until a steady state of understanding is reached and a critical mass of people have been grown.”

The lead teacher [C] on growing teachers professionally, said that “So the need to grow teachers and be leaders per se, ... teacher leaders, pedagogical curriculum leaders takes time and need to be given space. And the investment of time and the willingness of schools and cluster to put aside the resources to engage this and giving the allowance for things that don’t work out, is important. While we work out, we know that there are teachers who are ready to take up, there are teachers who [are] not [ready].”

The realities of teachers and their challenging tasks of executing instruction to students and yet at the same time engaged in professional learning cannot be underestimated in the Singapore school context. Teachers are also involved in administrative functions, including that of co-curricular activities such as uniform groups, sports, and others. For teachers to juggle all the demands and yet engage in a journey of change, in particular epistemic change, is fraught with tensions and purposeful moral courage. Lead teachers bring teachers along a journey of “growing together” about issues on curriculum, teaching and learning, and as a collective to make professional decisions within and across schools—“how that process eventually pans out, how far we can go and how do we eventually help to move toward the same direction, actually vary. We end up with different departments going at different pace. Even within the department, different groups of teachers going at totally different pace” (Lead Teacher, C).

Autonomy in teachers’ professionalism was also a central theme that surfaced from our interviews—“We have to give them [the teachers] the ability and the authority to make that decision.” Because with decision-making, responsibility also comes in, “I need to be accountable to my actions. I need to be clear in my thinking” according to the teachers we interviewed.

Lead teachers also relate to us how they perform the crucial functions of ecologizing across and within schools. They consistently relate the importance of working with the school leaders in setting directions, with HoDs in their department’s mission and plans, and supporting teachers in designing lessons and deconstructing them, and subsequently reconstructing them, and aiding these teachers in communicating upwards.

#### ***2.5.4 School-Level Macro-Layer (School Leaders)***

From our interview with school principals, fostering an open culture for teacher learning and innovation/experimentation is important for change. School leaders recognize that for teachers to be designers of learning and instruction, professional competency is key and determining how well the students learn formatively and summatively are important. Strategies employed include enabling structures and organizational routines, protected time for NLCs and PLCs, including school and cluster level teams to strategize and implement the change process. According to

Principal [A], “It’s cluster for schools not schools for cluster.” In other words, this school principal understood that the cluster superintendent’s interest in the school was to support the school’s own mission and in aiding the school in achieving the MOE’s policy goals in twenty-first-century learning (aka student-centred learning) and not the former model where schools have to achieve cluster goals in a top-down fashion. Clusters and schools work collaboratively in achieving common goals facilitated by school leaders in the middle of the two. While systemic in his perspective, this principal [A] understood that “deep learning is about giving good feedback to students, *go back to what learning ought to be about, what sort of culture will need to be in the school.* Not too obsessed about using this or that frame.” This grounded perspective speaks to the grounded-systemic dialectics we mentioned at the beginning of the chapter. Principal [A] noted that:

“Now there is a new team of teachers coming on board. I think there is a tendency to say, we want to replicate, go back and enact it the same way. But then we start to realise that, oh, ***the resources are different*** ... The resource person is not there anymore like the past. Then how do we deal with it? ... Of course, the struggle will be different. But I think once we distil, “What was the key learning out of it?” Because at the beginning, why was it difficult to start off? I think that terrain, nobody has ventured before. So we needed a very critical friend to guide us through it (the terrain), to give us certain... Even at that point in time, they did not feel very assured until they ventured, navigated the terrain. *But once they have done so, this group of teachers, I think their mindsets have opened up.*” The principal’s observations on teacher learning were as follows “Really need to know the ground in order to enact. Synthesis of what matters, do we need ground enough, students learning enough to keep in view to navigate, eventually to find the equilibrium. The teacher involvement is not homogenous, as teachers progress to next level, there is still learning. There is also need to invest time to learn again. There is a lot of discomfort on the ground.” The principal’s observations regarding system-icing policy translation to practice were “With the existing policy, one of the priorities is to develop the capacity that is still in the school, it cannot be singularly controlled by a school leader alone. The manner in which to grow capacity is *something other than curriculum leadership but also broader as management and leadership is about.*”

The principal’s observations from systemicing by identifying principles, were “we are not short of resources but what doesn’t help is too many things on our plate as people get confused as to how *to unify common principles.* What helped was the emergence of the STP [Singapore Teaching Practice—a model from the MOE]. STP helped us rationalize the different dimensions of learning. But internalising it at the school level, we go after the curriculum philosophy as well. The school has been in the deep learning journey. *With these 2 words, deep learning, we are also trying to rationalize what it means to us, as far as we are concerned, it is about the integrity of T&L processes, but essentially it is pinning down what are the key processes the school is concentrating on.*”



### 2.5.5 Cluster-Level Micro-Layer

At the cluster level, the space for collaboration, the willingness to put aside resources and time for the change process to happen is important. One LT [C] commented: “The past two years plus, the time that is given to the school and the collaborating schools ... School leaders putting aside time for us to meet, 2 h every week previously to look at lessons to redesign, to be willing to open the school and things to each other, is critical. The support and belief from leadership, school leadership, cluster leadership to say that, this is the direction, keep telling them that this is the direction, encouraging that this is the direction, telling them that we want you to try, it is okay if it does not work out, is important.”

Building capacity for adaptive expertise to be shared across the cluster was a systemic decision taken by the Cluster Superintendent and the school principals. The operational details that enabled a cultural shift, most significant of which, involve opening up the classrooms and deprivatizing teaching and learning in classrooms.

One HoD [C] observed—“it takes 3 years on average to be willing to open up that space.” Opening up of classrooms encourages a diversity of ideas as facilitated by the LTs. Spreading the beliefs for epistemic change involves spearheading innovation in groups. Differentiated instruction and looking at the data by teachers ensure they gain valuable fresh perspectives, meaning that teachers are analyzing whether pupils are responding accordingly to desired outcomes as brought about by instructional strategies such as critical thinking and questioning by the teachers.

LT [A] explained that “... spreading beliefs at multiple levels should be performed in a coherent fashion with an ecological perspective ... **Now, what we are trying to do now is how to get this to work towards ecological level where within the school zone, across clusters, we can actually drive a certain direction by first identifying the people with the common belief.** ... if we are not going to move into an ecological perspective, apprenticeship can only get us so far. The question that I am also grappling with now is this. I actually told my P (principal), I said, my question is yes, in the next lap as we grow this ecological leadership, the school leaders actually see that there are certain things they want me to do and the role that they want me to go into, which I am comfortable because I have been working at different levels. But the question I also ask myself is although I can do all these things, would it be that my contribution level and utility that we will gain, which means staying in this school, is coming to a point where while I can still contribute, the gain is not as much as previously. Because the school is reaching a certain state of maturity and when the school reaches a certain state of maturity and readiness, **I think we may need to reach a stage where once the ecology is set up, we need to let go and let them find their own way.** Then what I am doing here may be more beneficial to go into another school who is starting off.”

In subject-based leadership teams (SBLTs) where the cluster of schools form NLCs, the teachers often are in the position of “standing in the gap” which involves influencing teachers’ beliefs and moral courage to question the higher-ups, in the apparent influx of policies that come down from the top and which affect their work

assignments, and in turn, their abilities to perform the intended goals in classrooms. Standing in the gap is thus the courage to disagree or to counter-propose decisions made from a higher body, yet reconciling demands on both ends.

On the other hand, “standing in the gap” also involves downward percolations in helping teachers to “see.” School leaders share the “beliefs” and that if teachers are willing to go in that direction of change, e.g., in assessments, and the collective (SBLT) belief is that as a group, “if they are united, they will hit a sweet spot” (LT, C]. Through our interviews, we gathered that “standing in the gap” includes four tenets which are as follows: enabling spreading of beliefs (opportunities), fostering partnerships, encouraging sustainability (succession planning), and open cultures (percolating upwards).

The Vice-Principal’s [A] observations as a member of the SBLT is in orchestrating partnerships and collaborations between schools where **“the schools saw the benefits and advantage of collaboration. ... We saw the benefit of collaboration. We find that *the quality of the lessons has improved*. So from there, the school leaders actually wanted to move together again. **Because through the critique, through the kind of form of learning, through the form of lesson plans that we have. ...we are able to look at lessons involved in the 5E model, a lot of students’ artefacts that they are able to explain better.**”**

The VP/SBLT’s [B] observations on school readiness were about the schools moving on board when they are ready. He shared that “we don’t have that kind of numerical plan, targets. We just want to move when the schools are ready. Because actually the cluster superintendent shared with us the concept about the MRT train. So with the analogy, or metaphor when the train comes to your door, are you (school coming on board) ready to step up the train? Once you are ready, you can alight, you can do other projects.” The VP/SBLT’s observations on teacher readiness were “we get the schools to share their lessons with us. So from the sharing, we roughly know where they are. So that’s why ‘is the school ready?’ Coming back to the school readiness again. *If the school is ready and we engage them, definitely we can spread the kind of good practices*. If the school is not ready yet, definitely if the school leader feel that the school is not ready, but we can take a baby step or we do it differently. Definitely, it’s about the growth of the teachers. Because it takes a while for teachers to see the benefit.”

The SBLT’s observations on systemic-ing structural affordances were that “It’s the timetabling team that have to work on this. For example, are we going to free up 2 h for the teachers to meet? At first, the teachers will feel that this is not my teaching period, why am I here? However as time passes, they find that they actually benefit. Although we give them 1 h, actually they meet for more than 1 h because they find that it benefits them. So we are actually not short-changing the teachers because it’s for their professional growth.” The SBLT’s continued observations were that they would share their plans with the VPs first how they could develop the teachers together. “Sharing of plans is something like not just the meeting time, what we are going to do at the meetings, who are the people and what are we going to change. So for the SBPT for the Geography and English, we work the other way. *We started to map out the dates, the meeting time, which usually is in the afternoon*. We will

also send all the information to the school leaders to free up these teachers' time. For example, the last meeting was last week, so they can meet in the afternoon. So we already point out the dates. There are altogether about six meetings, so the date and time were all fixed. So at the beginning of the year, we do the planning. We can't tell them last minute we are going to meet at this hour."

### 2.5.6 Cluster-Level Meso-Layer (Cluster-Level Steering Committee)

School leaders should have the view of "cluster for schools, not schools for cluster" and support capacity building of teachers with no prescribed one-size-fits-all model. Local school readiness and ownership should be assessing themselves their own readiness and the decisions should be made by the school. Cluster for schools by the cluster-level steering committee means enabling adaptation by schools, planning for school readiness and adoption, strategizing for the supply of expertise, adapting the language genre for open cultures and innovations, and integrating processes and programs. These are the planning done by the cluster steering committee. One of the committee member shared: "So far, the school leaders that we have been working with, they share the same thinking with us (think of developing teachers) ... we let the VP to be the culture builder in the way that we want to develop that kind of deep learning for the school. And we have to assess the readiness of the school as well. Assess means by the VP and the school leaders, definitely we take a look at that. Why did [YYY] Primary only come onboard for Science? Is that because other subjects are not important? It's not that. Because we are already engaged in another platform. For example, **Math, we already have the 'I CAN' (programme). For the English, we have the STELLAR chapters.** So we see how we can move it. And also the resources that you have, if you only have two teachers for Science, are you able to spare these two teachers all the while? It all depends on the school's needs and school basis itself. So how strong is your team in your school? How are you going to develop it? So we let the school leaders decide and of course, we have this one-off that kind of sharing, learning journey for them to create more awareness."

The cluster committee's view on resourcing or the supply of expertise were: "So first, you are able to see what the ... schools are doing and [we] give more critical feedback or some constructive ways of doing things. That's why for the other two subject groups that we have, which is the secondary school Geography and primary school English, *we are able to secure support from AST [the Academy of Singapore Teachers].*" This committee had to engage in systemic thinking in its planning for the cluster and to adapt to individual school needs. By focusing on learning, coordinating with the clusters on how expertise can be shared, carried over, or spilled over creates the new organizational norms/structures and sets the tone for open cultures in the change process. For example: "What we did was we had 2 sharings. The first sharing was to get those schools to share in 3 domains: leadership, teacher use and students

use in the entire domain. Subsequently, we get the schools to adopt some of the practices in their schools and second half of the year, sometime in November, we get them to come back and share about what they have done after learning, what they implemented in their schools. And we also get ETD [educational technology division of the MOE] to facilitate the whole session. We get ETD involvement in a way to talk to HOD ICT. If they need any help, actually ETD will go to the school to guide them. Some of them adopted the practices like the other schools have shared.”

## 2.6 Discussion—Leadership from the Middle (LftM) Expanded

From the case studies and interviews, we can surmise that leadership from the middle thus is about micro-level apprenticing/mentoring, meso-layer alignment of ecological fluencies, and macro-level systemic thinking that all cohere in tandem sideways, upwards, and downwards percolation of expertise, practices, and epistemic beliefs. The lead teacher’s role consists of teacher learning, enacting inquiry practices that sustain, going deep, opening up, and facilitating different perspectives: *Ecologicing* with a view to finding structural supports, e.g., time-tabling time; *Systemicing* and sense-making of policies and identifying enabling leverages (principles); *Apprenticing* toward adaptabilities to fit into schools’ needs and readiness.

LTs (or equivalents, e.g., innovation champions) are at the *middle* of Ps (VPs, KPs) and teachers, and thus apprenticing leadership and ecologicing leadership are needed. Ps (or equivalents) are at the *middle* of school and cluster with ecologicing leadership needed in particular, and systemic thinking needed at the policy resourcing levels. SBLTs (or equivalents) are at the *middle* of SBPTs and cluster/schools with the systemic thinking needed for assessing school/department readiness and how resource sharing is planned and facilitated and the ecologicing for alignments between policy and practice. Teacher leaders are from the middle out at every level (Table 2.1).

The supply of expertise leading to dynamic alignments and coherences, both horizontally and vertically, involves the micro, meso, and macro-layer, respectively. The nuances and experiences to become a lead teacher lead up to attempting to face up to challenges faced in innovation diffusion. On-the-job (OJT) training develops a skillset relevant to do well as a teacher with skills training increasing capacity and competency.

Ecological leadership exhibits the characteristics of forging alignments and convergences in the different ecological layers, mitigating systemic paradoxes as well as local and cross-school tensions ... (Toh et al. 2014, p. 845). To iterate the earlier point made, while there is upward percolation, the degree of downward percolation and horizontal percolation (through apprenticing leadership) appears to be significantly more evident. This is not uncommon in a system historically and culturally

**Table 2.1** Summarizes the entire levels, people, process, product, and outcome of the system. From the table, we surmise that the entire ecology is co-dependent on the sum of its parts to function, i.e., each function is integral to the whole system in order for the ecology to operate

Levels of system	People (LftM)	Process	Product	Outcomes
Micro	Student	<i>Learn-ing</i> for both performance and 21 <sup>st</sup> CC (according to the 4 lives framework)	Artefacts produced by students	Values, Skills, Knowledge, including 21 <sup>st</sup> CC with metacognition (4 lives framework)
	Teacher	PLCs - <i>apprentice-ing</i>	Lesson plans and nimble Apps	TPCK
	HoD	<i>Ecologic-ing</i> between teachers and principals	SPID, STP	Alignment
Macro	School Leader	Networking of schools with cluster for change management ( <i>ecologic-ing</i> between schools and clusters and MOE) <i>Systemic-ing</i> for change management	Change management tools	Change in school socio-technical infrastructure
	Cluster Sup	Networking with MOE, Zones ( <i>ecologic-ing</i> )	Change management tools	School to school networks
Exo/Meso	Lead Teacher	NLCs – <i>apprentice-ing</i> and <i>ecologic-ing</i> between teachers and exo parties	SPID, STP, and change management/leadership	Supply of teachers with design competencies
	ETO	NLCs – <i>apprentice-ing</i> and <i>ecologic-ing</i>	Pedagogical innovations e.g., Java Sim	Curation of innovations
	NIE Researcher	NLCs and PLCs – <i>apprentice-ing</i> and <i>ecologic-ing</i> with evidence base data	Pedagogical innovations e.g., WiRead, Mycloud, PF, etc.	Systematic evidence base
Chrono	ICT implementation & ICT innovations	<i>Systemic-ing</i> centralized-Decentralized (systems thinking) balances	Hybrid – SLS & Appstore	School cultures for transformative practices (including hybridity)



accustomed to higher forms of power distance. However, for a system that undergoes changes in the context of diffusion, upward percolation is imperative. And there must be continuous bidirectional upward and downward percolation as connoted by Toh et al.’s notion of ecological leadership. In the context of change, as elements in the system are co-evolving, and especially when teachers are undergoing significant changes in enactment, it is important that middle management and school leaders are cognizant of what is happening. As it is often the case for upper levels to downward percolate, there needs to be upward percolation to co-inform each other and for alignments to constantly be meted out. Because upward percolation is usually more difficult to enact in East-Asian cultures, school leaders need to remain grounded, and teacher leaders need to develop trust with their school leaders.

Culture building through upward, downward, and sideward percolation is a form of distributing leadership that has to be practised. As with the observations made in this study, every teacher leader including the school leaders (*as the middle*) needs to percolate upwards, for example, school leaders to their superintendents and even policymakers at the MOE to formulate policies. Because of the close and tight ecology of the Singapore education system, it is often possible for school leaders to be represented in committees at the MOE. However, there is a need for school leaders to transcend higher power distance and communicate upwards. It is not just school leadership but all levels (from teachers to the MOE) that need to be in place (in alignment).

Apprenticing Leadership and Systemic Leadership Elaborated.

The PLC can be used as a structure to support apprenticeship. Below is a typical excerpt that is representative of apprenticeship work among teachers:

**Mentor:** Most people when they do PLCs will do operational issues. Definitely, we will have that too. But we will make sure that every PLC we have some *discussion of pedagogical issues*. ... *This is very important because as a teacher, our pedagogy is our foundation to what we are doing.* ...

**Mentee:** I definitely did learn a lot, because I came from PGDE, there was only 1 year. In this 1 year, *there were not many questions like [mentor] has posed, thought-provoking questions. And it actually did open up my way of seeing things, my perspective in the classrooms.*

Schools that have a sustainable trajectory are evidenced by school leaders who exhibit three characteristics: moral purpose, being systematic yet grounded, and are situated within a broader cultural-historical perspective of the school and MOE policy (see Fig. 2.3).

A case in point is illustrated in the interview with a Principal:

What should be the binding force for my teachers is how to transform the lives of our students. It's engrained in our school mission. We pride ourselves on a strong *culture of care* for the students. Knowing that students don't have a good head start, but we are student-centric, we want to drive the students forward.

Importantly, principals who particularly work with students from disadvantaged families may be motivated to care for these students, and helping them to level up to those more advantaged is a moral purpose. Moral purpose is a broader philosophical underpinning motive to appropriate inquiry-based learning for these schools.

**Fig. 2.3** Keeping to moral purpose yet systemically grounded



Moreover, principals in the interviews usually attest to the fact that they have to be systemic in their thinking—to use systems thinking in approaching their school's agenda. Yet at the same time, the successful characteristic for innovation sustainability is the ability to be grounded. Principals and their key personnel (KPs) are to be grounded, knowing the pulse of what is happening to their teachers, the curriculum, and giving agency to the ones who enact the curriculum. To be systemically grounded is consistent with the ecological leadership where alignments throughout the school are achieved.

To consolidate our observations:

Apprenticing Leadership—*sideways*.

Initial “involuntary” assignment (high power distance) does have a place here, but good facilitation is needed to achieve collectivism toward teacher learning and change. Being privileged to be called as an alternative interpretation to the initial “involuntary” assignment of high power distance.

Ecological Leadership—*upwards and downwards*.

School leaders' intentionally reach out to teachers to bridge “power distance” between levels—*two directional percolations*. Upward percolation by teacher leaders is particularly necessary to situate “*what works*” (with evidence to support) as a means of achieving alignments for the benefit of students overcoming multiple misalignments which may arise through the system.

Systemicing leadership (see big picture).

Grounded-systemic leadership at the macro layer is essential as systemic structural affordances for centralized–decentralised organizational routines of distributed leadership through leadership in the middle is necessary for orchestration at the macro layer.

Moral courage leadership (see student-centricity holistically).

Sekerka and Bagozzi (2007: 135) defined moral courage as “the ability to use inner principles to do what is good for others, regardless of threat to self, as a matter of practice.” Kidder defined moral courage as “a commitment to moral principles, an awareness of the danger involved in supporting those principles, and a willing endurance of that danger” (Kidder, 2005: 7).

Moving a school is hard enough, what more a system. Moving a system toward the change desired, yet at the same time keeping to the successful indicators without an implementation dip, is no mean feat. It requires a delicate balance of the forces at play throughout the system. While we can appropriate tenets of change from systems distant from the context at hand, this study reminds us once again of the sensitivity to the indigenous context of any particular system. Apprenticing leadership co-evolves with ecological leadership in a distributed fashion and the agenda for diffusion facilitates opportunities for teacher leaders to be positioned and to be exercised toward such leadership roles.

Throughout the chapter, we have intentionally avoided a traits-based view to leadership, nor attributing leadership to one particular leader per se, and our observations are that school leaders bring their particular leadership orientations to the school. Framed from a cultural-historical lens, and dependent on the needs of the school at a particular timeframe of a school, a school leader and the leadership team fill

in the gaps left behind from the previous leadership. Good leadership recognizes the strengths and weaknesses of the leadership held at a particular era and brings in a new leadership team to achieve the goals of the school for the sustainability of innovations to be achieved over time, even a decade.

## 2.7 Conclusion

According to Elmore (2004, p. 11), cultures do not change by mandatory means, instead they change by the specific displacement of existing structures and processes. In our research, while we acknowledge Elmore's "displacement" principle, we recognize the displacement to be evolutionary. Our work is consistent with Spillane's (2006) notion that change changes the very context itself. The three layers of enactment were co-evolutionary as the diffusion occurred. Leadership trajectories are constantly in the making as *context is evolving*. Within the indigenous nature of leadership, in Singapore's context, intentionally making formal positions of teacher leaders might enable these champions to be better positioned to diffuse their beliefs. These formal appointments, for example, appointing lead teachers to work across schools as a norm is enabling these champions to influence within the lateral networks created and cultivated through the NLC structure and process. We recognized that in order to sustain change in teachers, fostering school- and cluster-wide innovation-learning cultures is essential.

Despite the co-evolutionary nature of the innovation change context, we characterize relatively stable constructs, namely power distance issues and collectivism. Collectivism was indeed observed when unwilling teachers who underwent the peer apprenticeship learning process transited from tolerance to acceptance and subsequent to joy in acceptance. Through the process, we claim that apprenticing leadership facilitates collectivism. Ecological leadership mitigates high power distance.



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