Predictors of Instructional Leadership in
Singapore School System:
Reflections on Preliminary Findings
in the Context of Asian Knowledge Building

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The importance of instructional leadership for school effectiveness and improvement has not only remained to be persistent over the decades since 1970s, but also grown recently in view of contemporary education reforms and policies that seek to prepare students with the 21st century competencies. School leaders are now vested with greater responsibility to lead instructional changes that guarantee diverse learning outcomes within increasingly uncertain and complex contexts. In Singapore centralized education, the introduction of the "Teach Less, Learn More" initiative in 2005 has sparked a slew of policies that compels schools to initiate school-based curriculum development and innovation while having to maintain high test scores and quality educational learning experiences across the entire education system. In this paper, we will present preliminary findings based on multi-level analyses drawn from a nation-wide survey data to illustrate how instructional leadership is situated in the Singapore education context. Of great interest is the tight relatedness that instructional leadership has with distributed leadership, school culture, work values and school type. Reflections on these preliminary findings will be discussed in this paper with the purpose of building an Asian knowledge base on education leadership.

Distributed leadership: A response to the growing complexity in Singapore education

In the Singapore education context, the 'Thinking Schools, Learning Nation' (TSLN) policy initiative in 1997 set the stage for the influx of rapid, wide-ranging, deep-changing education reforms. These reforms are understandably motivated by globalization forces. This policy initiative received a further boost with the introduction of the 'Teach Less, Learn More' (TLLM) policy initiative in 2005, which saw further comprehensive reforms in education. By 2013, the education ministry casts further their eyes on values education. A consistent observation across these past policy initiatives is that policy reforms essentially require key education stakeholders to consider school outcomes beyond just satisfying academic achievements. The introduction of the 21st century competency framework consisting of outcomes such as 'confident person', 'concerned citizen', 'self-directed learner', and 'active contributor' is a response to the predominant

steep emphasis on academic achievement, and the need to prepare students to meet the demands of the future economy and society. The need for greater diversity in student learning outcomes inevitably requires changes and shifts in school curricula to satisfy the twin objectives of 21st century student learning outcomes yet maintaining standards in students' academic achievements (Hairon & Dimmock, 2012).

However, efforts at reconstructing school curricula to meet these twin objectives of student learning outcomes are situated in educational contexts that are characterized by increasing volatility, uncertainty, complexity and ambiguity (VUCA). The post-2011 General Election marks the augmentation of the government's acceptance to engage with the electorates' growing demand on all matters of life, including education. Concomitantly, schools are increasingly compelled to engage the growing needs of multiple school stakeholders namely parents, students and communities, while at the same time fulfilling policymakers' national needs. On the part of school leaders, they have to mobilize and optimize physical and human resources towards shared organizational goals in increasingly complex educational contexts – within and outside schools.

One reason for this rising complexity is due to the general weakening of classifications in social relationships and boundaries, and a moving away from organized social structure to network culture (Hartley, 2007). The former example is the general rise in parental expectation and intrusion into teachers' professional practice. The latter example is the general rise in partnerships between schools and external organizations. In addition, contemporary reforms in the public service have been observed to demand greater 'joined-up' or 'network' regime of governance (Hartley, 2007), where all categories and classifications are weakened and rendered increasingly permeable (a flexible 'liquid modern' view of space and time), and the new work order consistent with the knowledge economy (where individuals work and learn beyond bureaucratic enclosures using their loose spatial and temporal codes).

It is therefore understandable that contemporary school leaders increasingly use up time and energy in managing these increasingly fluid and cross-boundary relationships. It is also not surprising that school leaders resort to distributed leadership where leadership decisions on curriculum and instruction are delegated, distributed or shared to other staff members beyond the purview of school principals. Delegation or distribution of leadership decisions to middle managers such as department heads (HODs) or subject heads (SHs) has been a common place in Singapore education context for more than two decades, especially that pertaining to curriculum and instruction. In this sense, distributed leadership is closely tied to instructional leadership insofar as the former allows instructional leadership practices to be delegated or shared to other staff members beyond school principals or vice-principals. The need to distribute decisions on curriculum and instruction beyond a single school principal is also demonstrated by the education ministry's policy on creating the vice-principal administration and vice-principal academic positions. While the former is a manifestation of distribution in administrative matters, the latter is in curriculum and instruction.

However, over the last decade, leadership decisions pertaining to instruction have been distributed to teachers who are considered informal leaders, or teacher leaders. This is a result of the growing demands placed on schools so much so that administrative decisions have to be passed on from senior to middle leaders, which result in middle leaders delegating or sharing their decisions on curriculum and instruction to teacher leaders. Teacher leaders include Senior or Lead Teachers (STs and LTs), Subject and Level Reps, and Professional Learning Community Team Leaders – all of which are involved in making leadership decisions on curriculum and instruction. The effectiveness of distributed leadership to enhance instruction is therefore dependent on how well instructional leadership is distributed through teacher leadership, and thus the development of both distributed leadership and teacher leadership. However, while delegating or sharing decisions on curriculum and instruction from senior to middle leaders has been formally established for some time, the distribution of instructional leadership from middle leaders to teacher leaders has not.

Furthermore, distributed leadership is not merely to do with delegating, relinquishing or sharing decisions on curriculum and instruction from senior to middle leaders, or from senior and middle leaders to teacher leaders. It involves developing leadership, shared decisions, and collective engagement. In a study using exploratory factor analysis, Hairon & Goh (2014) argued that distributed leadership comprises four dimensions – specifically, empowerment, developing leadership, shared decisions, and collective engagement. Hairon and Goh (2014) argued that empowerment – that is, decisions to be relinquished or distributed – is dependent on the leadership capacity of subordinates. In other words, the extent of empowering others in terms of curricular and instructional decisions is dependent on the subordinates' capacity and competency to take on the leadership roles such as in curriculum and instruction. Hence, there is the need to develop leadership capacity and competencies in subordinates if leadership is to be distributed. Following this, decisions that are distributed from superiors to subordinates are essentially shared. Hairon and Goh (2014) argued that even though decision-making power is distributed from the superior to subordinate, subordinates' decisions are essentially shared insofar as superiors are in support of subordinates' decision, and that they are still accountable to the decisions made by subordinates. Finally, the enactment of shared decision entails the collective engagement of individuals in the organization – that is, people in interaction with one another in collaboratively synergy. Centrally, the enactments of the four dimensions on distributed leadership proposed by Hairon and Goh (2014) are closely tied to curriculum and instruction.

Although the link between instructional leadership and distributed leadership has been observed (Lieberman & Miller, 2011; Spillane & Louis, 2002; Timperley, 2005), empirical studies supporting the link has still room for further substantive theorization. The link or interdependence between instructional leadership and distributed leadership has been observed to be substantive enough to have the potential to an emerging field of study in school leadership – that is, 'distributed instructional leadership' (Lee, Hallinger, & Walker, 2012). Although Leithwood et al. (2006) had argued that distributed leadership has been identified as one of the six claims on successful school leadership, they were not able to draw sufficient empirical studies to tie together the two substantive concepts or constructs. In our view, the relatedness or interdependency between instructional and distributed leadership has yet to reach it theoretical and

methodological sufficiency. Nevertheless, the fact that "school leaders improve teaching and learning indirectly" (Leithwood et al., 2006, p. 3) and that the effects of instructional leadership are indirect (Hallinger & Heck, 1996; Robinson et al., 2008) suggest that instructional leadership's dependency or inter-dependency with distributed leadership is persuasively credible.

Method

This paper serves to bring to light further connections between instructional leadership and distributed leadership based on the preliminary findings form a national survey collected from 224 Singapore schools comprising 113 primary schools, 100 secondary schools, six independent schools, and five mixed level schools. While all 360 plus schools were invited to participated in the survey, a total of 224 principals, 322 vice-principals, 686 middle leaders (e.g., department heads, subject heads and year heads), and 3513 teachers finally participated in the survey. Participation involved the completion of an online questionnaire requiring key demographical data (e.g., teaching experience, school type, school level, etc), and containing instruments measuring core leadership constructs: distributed leadership, instructional leadership, school culture, and work values. Each of the four core leadership construct contains sub-constructs which were termed as dimensions. Each dimension contains a minimum of eight items each to the 5-Likert scale response (Strongly Disagree, Disagree, Neutral, Agree and Strongly Agree). The distributed leadership construct contained three dimensions: empowerment, interactive relations for shared decisions, and developing leadership. The instructional leadership construct contained four dimensions: aligning teaching practices to school vision, leading teaching and learning, developing conducive learning environment for teaching and learning, promoting professional development. The work values construct contained five dimensions: individualism versus collectivism, high versus low power distance, high versus low uncertainty, assertiveness versus consideration, long-term versus short-term orientation. The school culture construct contained five dimensions: collegiality versus independence, high versus low hierarchy, strong versus weak nurturance, high versus low academic emphasis, people versus task orientation. The data collected from the 5-Likert raw scores were converted to Rasch measures – that

is, logits. Using Rasch analysis, each dimension from each of the core four leadership construct gives a measure for each person responding to the questionnaire. The measures for each of the dimension from each group – that is, principal, vice-principal, middle leader, and teachers, were then used for appropriate hierarchical liner modeling (HLM) analyses. In this paper, findings will be made with respect to estimating the predictors of independent variables to the dependent or outcome variables on the four instructional leadership dimensions at two levels: teacher and school. Teachers' perceptions on their principals' leadership practices constituted Level 1 predictors. Principals' perceptions on their own leadership practices constituted Level 2 predictors. Other teacher and school demographical data also constitutes Level 2 predictors (e.g., teaching experience, educational qualifications, school type, school level). Principals' perceptions on the four instructional leadership dimensions constituted the dependent or outcome variable.

Findings

Based on the preliminary HLM analyses presented in Table 1, all three distributed leadership dimensions on empowerment, interactive relations for shared decisions and developing leadership are predictors to all the four core instructional leadership dimensions – aligning teaching practices to school vision, developing conducive environment for teaching and learning, promoting professional development, and leading in teaching and learning. In addition, the dimensions on school culture have also surfaced as predictors to the four core instructional leadership dimensions, specifically academic emphasis, collegiality and people orientation. Finally, at the teacher level, male teacher status predicts aligning teaching practices to school vision, and providing conducive environment for teaching and learning. At the school level, principals' perception of their long-term orientation is a negative predictor to aligning teaching practices to school vision. Principals' perception of their high power distance is also a negative predictor to promoting professional development. In addition, primary school status is a predictor to promoting professional development, and leading teaching and learning.

Table 1: HLM Analyses Teachers [Level 1] nested in Principals [Level 2]

Dependent Variable	Alignment Teaching Practices to School Vision	Providing Conducive Environment for Teaching and Learning	Promoting Professional Development	Leading Teaching and Learning
Level 1 Predictors	• Female Teachers (-.077) **Ts' perception of:** *School Culture* • Academic Emphasis (.077) • People Orientation (.027) **Ts' perception of:** *Distributed Leadership* • Empowerment (.048) • Interactive Relationship for Shared Decisions (.420) • Developing Leadership (0.171)	• Male Teachers (.077) **Ts' perception of:** *Distributed Leadership* • Empowerment (.398) • Interactive Relationship for Shared Decisions (.230) • Developing Leadership (.168)	**Ts' perception of:** *School Culture* • Collegiality (.046) • Academic Emphasis (.035) **Ts' perception of:** *Distributed Leadership* • Empowerment (.391) • Interactive Relationship for Shared Decisions (.255) • Developing Leadership (.171)	**Ts' perception of:** *School Culture* • Academic Emphasis (.031) **Ts' perception of:** *Distributed Leadership* • Empowerment (.079) • Interactive Relationship for Shared Decisions (.317) • Developing Leadership (.360)
Level 2 Predictors	**Ps' Work Values:** • LT Orientation (negative predictor) (-.031)		**Ps' Work Values:** • Power Distance (negative predictor) (-.045) School Level (Primary school) (.073)	School Level (Primary school) (.251)
Fit	ICC of Null = 6% Variance Explained at Level 1 = 40% Variance Explained at Level 2 = 75%	ICC of Null = 8% Variance Explained at Level 1 is 49% Variance Explained at Level 2 is 80%	ICC at Null = 6% Variance Explained at Level 1 = 55% Variance Explained at Level 2 = 88%	ICC at Null = 8% Variance Explained at Level 1 = 51% Variance Explained at Level 2 = 59%

P<0.05

The HLM analyses of the four core instructional leadership dimensions identified in the study gives empirical weight to the thesis that distributed leadership supports instructional leadership. At the practice level, this means that the enactment of instructional leadership practices are materialized concomitantly with distributed leadership. This is understandable taking into consideration the context of Singapore schools. The student population for the average Singapore school is about 1500, which is considered large in international terms. School leaders in such school context would inadvertently be expected to distributed decision-making powers especially in curricular and instructional matters. This explains why the role of middle managers or leaders (e.g., department heads) are significant in directly leading the subject content areas, and why instructional leadership effects from the school principals' position are said to be indirect most of the time. Strengthening the need to distribute decision-making powers on curricular and instructional matters is the school-based curriculum development movement for 21st century student learning outcomes. Schools in Singapore are expected to establish curricular niches, which are currently positioned as Applied Learning Programme (ALP) and Lifelong Learning Programme (LLP). The policy initiative that had significantly generated the school-based curriculum development movement is the 'Teach Less, Learn More' (TLLM) in 2005.

Specifically, the HLM analyses have given greater insights into the specifics of distributed-ness and their tightly relatedness in instructional leadership practices – at least in the Singapore education context. The analyses provide evidence that school leaders' practices of empowering staff members, encourage interactive relations for shared decisions, and developing teachers are for the explicit purposes to (1) align teaching practices to school vision, (2) provide conducive environment for teaching and learning, (3) promote professional development, and (4) lead teaching and learning. For one example, they empower staff members in the contexts of leadership practices that align teaching practices to the school vision, provide conducive environment for teaching and learning, promote professional development, and lead teaching and learning.

The HLM analyses also show that school culture predicts instructional leadership practices, one of which is academic emphasis – that is, the emphasis given by school leaders to promote learning of staff to support student learning – in predicting school leaders' practices in (1) aligning teaching practices to school vision, (2) promoting professional development, and (3) leading teaching and learning. This finding is consistent with the general societal value on prioritizing and investing in education for student learning – including that of academic achievement. The pursuit for academic achievement is warranted and legitimated by the establishment of the national meritocratic belief primarily based on examinations. Teachers are therefore compelled to focus on student learning outcomes; consistent with that of the parents'. Moreover, the school-based curriculum development movement is also another contributor to a school culture that place importance on teachers' capacity building through professional learning. Another school culture dimension that support school leaders' instructional practices of promoting professional development is collegiality. This is understandable taking into consideration the education ministry's strong encouragement for all schools to be professional learning communities, which formally started in 2009 but informally in 2000. School cultures with strong collegiality would thus support teacher professional development. This perhaps also explains why primary schools predict teacher professional development. Teachers in primary schools are believed to be more collaborative than secondary or high schools. This is because primary school teachers are more subject content generalists and would therefore have greater need and opportunity to meet together, and hence, greater need and opportunity for the development of collegiality. Secondary or high school teachers are more subject content specialists, and would therefore have relatively lesser need and opportunity to collaborate with other staff members.

The HLM analyses have however shown negative predictors of instructional leadership practices. The maintenance of high power distance by school leaders potentially hinders instructional leadership practice in promoting professional development. The move towards professional learning communities to develop teacher teaching competencies can potentially be hindered by the maintenance of high power distance. In essence, the spirit of professional learning communities is to give greater autonomy and agency for teachers in matters of curriculum and instruction. This is in direct opposition to the predominance of hierarchy in school cultures in Singapore education context. School leaders' work value on long-term orientation is another negative predictor on the instructional practice of aligning teaching practices to school vision. This finding is consistent with the education ministry's practice of principals' school rotation. That is, school principals' allocation to schools is based on the education ministry's decision, and their tenure is for a period of about six years. This rotation can potentially lead to teachers' perceiving that their school leaders are not aligning teaching practices to the school vision. The appointment of new school principals also denotes the implementation of another set of initiatives. This finding also suggests the importance of leadership continuity with respect to the school vision and goals when leadership positions are passed from one leader to another.

Concluding Reflections

The preliminary results of the quantitative study has given empirical support to the close relationship between distributed leadership and instructional leadership, and hence, the development of the 'distributed instructional leadership' theory. More statistical analyses can still be done to further develop this theory (e.g., HLM analyses on how instructional leadership dimensions predict distributed leadership dimensions, and person-item Rasch analysis on each of the dimensions on distributed and instructional leadership). In addition to this, the study has also opened an area for further and deeper investigation – that is, the high power distance or hierarchical social relations common in Asian contexts and its effects on school leadership.

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