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Author(s)	Salleh Hairon and Charlene Tan
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DRAFT

Professional Learning Communities in Singapore and Shanghai: Implications for Teacher Collaboration

Salleh Hairon & Charlene Tan

Abstract

Professional Learning Communities (PLCs) have been recognized as having the potential to raise the quality of teachers, teaching, and student learning through structured teacher collaboration, and have been featured prominently in Singapore and Shanghai – both considered top-performing Asian societies in the Programme for International Student Assessment (PISA). Although embedded in education systems that are considered centralized, there are still significant differences. Drawing out key implications from the experiences of Singapore and Shanghai, this paper highlights the potential challenges in implementing PLCs. These challenges include heavy teacher workload, ambiguities in the understanding and implementation of PLCs, and hierarchical work structures. The discussions emanating from the comparison between Singapore and Shanghai PLCs seek to contribute towards the international literature on fostering teacher collaboration through PLCs, which has been predominantly western centric.

Keywords: professional learning communities, Singapore, Shanghai, teacher professional development, challenges

Introduction

In an increasingly competitive world driven by knowledge creation, education has become the vehicle for achieving economic and social progress essential for the good of the public (Darling-Hammond 2012). The utilitarian value on education explains why policymakers in many countries are increasingly keen to improve their school systems in order to achieve appropriate educational outcomes. Likewise, teachers are now seen as pivotal in enhancing the knowledge and skills of the future workforce (UNESCO 2014). The need to improve education systems and the teaching work force, however, implies attention to quality teachers through investment in teacher recruitment, retention and development. In comparing a selected range of successful education systems around the world, Barber and Mourshed (2007) highlighted that besides attention to recruiting and retaining high quality teachers, developing teachers is equally important to ensure high quality teaching. Besides attention to quality teachers and teaching, there is a further realization that school curricula must not only continue to produce strong academic results, but also enhance other soft skills such as creative thinking, critical thinking, citizenship and self-directed learning. Teachers and school leaders are thus compelled to work together to develop a repertoire of new pedagogies that to

meet these broadened learning outcomes which have to be contextualized to their specific school needs and priorities. This is where teacher learning through structured and sustained collaboration at school sites, especially the kind that has characteristics of Professional Learning Communities (PLCs), finds its greatest relevance. PLCs can potentially be a good response to build teacher and organizational capacities so as to meet increasing demands in education reform ([Bolam et al. 2005](#); [Hord, 2008](#)). The importance of teacher collaboratively learning from one another has also been highlighted to be significant in improving education systems ([Mourshed, Chijioke and Barber 2010](#)).

Although there is no universal definition for PLCs, and that there are shades of interpretation of what it means ([Darling-Hammond 1996](#); [DuFour and Eaker 1998](#); [Hord 1997](#); [Senge 1990](#); [Stoll et al. 2003](#)), there is a broad international consensus that PLC has to do with a group of people sharing and critically interrogating their practice in an ongoing, reflective, collaborative, inclusive, learning-oriented, and growth-promoting way ([Toole and Lewis 2002](#); [Bolam et al. 2005](#)). Summarising the literature on PLC, [Hord \(1997, 1\)](#) defined a ‘professional community of learners’ as one:

“... in which the teachers in a school and its administrators continuously seek and share learning, and act on their learning. The goal of their actions is to enhance their effectiveness as professionals for the students’ benefit; thus, this arrangement may also be termed communities of continuous inquiry and improvement. The notion, therefore, draws attention to the potential for a range of people, based inside and outside a school, to mutually enhance each other’s and pupils’ learning as well as school development.”

PLCs integrate and function within the school strategic framework insofar as it takes into consideration the specific school’s vision, mission and values in order to achieve school goals. PLCs also have features of effective teacher professional development which include the following: community-based, job-embedded, linked to students’ outcomes, continuous, reflective, and inquiry-based ([Corcoran 1995](#); [Garet et al. 2001](#); [Villegas-Reimers 2003](#); [Boyle, While and Boyle 2004](#); [Desimone 2011](#)).

The increasing interest and popularity of PLCs including all other forms of teacher learning communities regardless of the terms being used ([Lieberman and Miller 2011](#); [Grossman et al. 2001](#)) is therefore understandable. However, the knowledge base on PLCs has been drawn predominantly from Western contexts. Relatively little analysis has been done on the nature and implementation of PLCs in Asian contexts ([Hairon and Dimmock 2012](#), [Wang 2014](#)). Not surprisingly, context has been reported to be essential in understanding how PLCs are enacted ([Bolam et al. 2005](#); [Hairon et al. 2015](#)). More conceptual and theoretical work thus needs to be done on PLCs drawn from Asian contexts. Furthermore, with growing interest in PLCs in Asian settings the apparent need to develop an Asian knowledge base on PLCs has increased. However, the task of understanding PLCs in Asian contexts is best done by comparative means as this would further highlight the importance of context in understanding how PLCs work. However, while Asian contexts share similar features such as centralized education systems, hierarchical social relations and collectivist cultural value, there would be inevitable significant variations across countries.

We have chosen to compare Singapore and Shanghai for several reasons. Besides sharing the obvious similarity of being top performers in the Programme for International Student Assessment (PISA) ([OECD 2010a, b](#)), both Shanghai and Singapore are developed and affluent cities with an international outlook, and have strong economy and well-educated population. They also share a common Asian heritage. Like the Chinese in Shanghai, the

Chinese in Singapore (who form the majority) learn Mandarin (*putonghua*) as their official Mother Tongue Language in schools, and are socialized into Confucian/Chinese values and practices since young. Another key similarity is the convergent education reforms in both societies initiated by strong interventionist (municipal) governments that aim to prepare their people for the demands and challenges of globalization. For example, the Ministry of Education in Singapore (MOE) has launched an array of education initiatives since 1997 under the vision of ‘Thinking Schools, Learning Nation’ (TSLN) and ‘Teach Less Learn More’ (TLLM). Similarly, the Shanghai municipal government has introduced major education changes through its ‘First curriculum reform’ (1988-1997) and ‘Second curriculum reform’ (1998-present). Regardless of these similarities, the way PLCs is implemented in each country varies.

The purpose of this paper is to compare and contrast PLCs in Singapore and Shanghai so as to highlight contextual configurations which impinge on how PLCs are understood and enacted in these two contexts. This paper starts with a description on the developments of PLCs in Singapore and Shanghai, along with the rationale for its adoption. The next section then discusses key challenges in the implementation of PLCs in both education systems. Finally, the paper highlights lessons that can be learned by comparing the implementation of PLCs in Singapore and Shanghai, especially with regard to how the conditions of PLCs in Shanghai seem to mitigate the potential challenges to PLCs.

The Development of PLCs in Singapore and Shanghai Schools

Singapore PLCs

Singapore was founded as a British trading post and colony in 1819. It was granted self-government in 1959, and was then briefly occupied by the Japanese from 1942 to 1945. After a short-lived union with Malaysia in 1963, it was separated to become a sovereign state in 1965. Singapore is a plural society with foreigners comprising about 36% of Singapore’s population of 4.9 million people. Despite being multi-ethnic, the majority of the population as well as its political leaders are ethnic Chinese (72.4%) whose ancestors mainly came from South China. Compulsory education is implemented in Singapore where all children have to complete at least six years of primary education. Almost all students proceed to another four or five years of schooling at the secondary level, before continuing their study at a vocational institute, junior college or other post-secondary institutions.

Although the PLC policy initiative started in 2009 (MOE 2009a), the philosophy and practices of teacher learning in communities started in 1997 with the introduction of Teachers Network, along with its version of teacher learning communities known as ‘Learning Circles’ (Hairon and Dimmock 2012, MOE 2001). The spirit of teacher-led professional development that values collaborative inquiry to improve classroom practices had encouraged other similar models of teacher learning communities to flourish (e.g., communities of practice, action research, and lesson study). MOE aspires that Singapore teachers take greater lead and initiative to not only bring about appropriate curricular innovations and students’ learning experiences, but also professionally develop their colleagues. The assumption is that PLCs have the potential to level up teacher professionalism in a quick and effective way (MOE 2009b). PLCs are perceived to bring about a culture of teacher-led professional development and raise the quality of instructional expertise across all schools and classrooms in Singapore. After piloting PLCs in 51 schools in 2009, the Singapore MOE has strongly encouraged and thus required all its schools to come onboard the PLC journey (Hairon and Dimmock 2012;

Lee and Lee 2013). It is also worth noting that although the PLC policy initiative is centered on teacher collaborative learning the decision for teachers to embark on PLC activities usually rests in the hands of school leaders. This is due to the centralized and hierarchical nature of policy implementation in the education system (Hairon 2006).

Singapore is probably the only country in the world to have a nation-wide PLC model with an explicit use of the term and concepts relating to PLCs. The ability of the MOE to standardize a PLC model across all schools in Singapore is partly due to the smallness of the country, and the hierarchical structure and workings within the education system (Hairon and Dimmock 2012; Lee and Lee 2013). The Singapore MOE conceptualizes each school as a PLC consisting of several PLTs (Professional Learning Teams) (TDD 2010). Each PLT may consist of teachers belonging to the same grade level (more common in primary schools) or the same teaching subject (more common in secondary schools, or junior colleges).

The Singapore PLC model focuses on ‘3 Big Ideas’ or aims – enabling students’ learning; building a culture of collaboration; and focusing on student outcomes. It also focused on ‘4 Critical Questions’ – What is it we expect students to learn? How will we know when they have learned? How will we respond when they don’t learn? How will we respond when they already know it? The ‘3 Big Ideas’ and ‘4 Critical Questions’, which were inspired by DuFour’s (2004) work on PLCs, serve to positively impact on classroom teaching and school learning culture, which would then have a positive impact on student outcomes.

The Singapore PLC model also places importance on school leadership to support the processes of PLC in the form of the Coalition Team comprising the principal, school staff developer (SSD) and a few heads of department. While PLTs are to have positive impact on improvements in instructional practice (content and pedagogy), the Coalition Team is to have positive impact on building the school learning culture (structures, processes and resources). Borrowing Fullan’s “Triangle of Success” model, improvements in student outcomes are achieved when the PLTs impact on ‘Deep Pedagogy’ and the Coalition Team impacts on ‘System-ness’ (TDD, 2010). PLTs have the choice of adopting a range of collaborative tools, such as ‘Learning Circles’, ‘Lesson Study’ and ‘Action Research’. These collaboration tools are consistent with Cochran-Smith and Lytle’s (2009) notion of ‘theory of action’.

Shanghai PLCs

With a population of 20.7 million, Shanghai has the most developed basic education system in the country. It is a cosmopolitan city with a relatively high percentage of non-locals compared to other Chinese cities: 13.8 million are permanent residents and 5.4 million are temporary residents. A pioneer in education reforms in China, Shanghai was the first city to implement the nine-year compulsory education in 1978. All children are required to complete at least nine years of schooling: five years of primary education and four years of junior secondary education. Almost all students proceed to the senior secondary (high school) level for another three years of study, where they will either sit for the national college entrance examination to qualify them for tertiary education or opt for vocational institutions.

Although the specific term ‘PLC’ has not been specifically used in China even in direct translation, several researchers have made observations of its usage in practice (e.g. Sargent & Hannum, 2009; Lee & Sharicz, 2014; Wang, 2014; Zhang & Pang, 2015). Teacher collaboration in Shanghai/Chinese schools primarily takes the structured form of a ‘teaching-research group’ [*jiaoyan zhu*] and ‘lesson preparation group’ [*beike zhu*] (Tan 2013; Wang 2014). The organization of teachers into teaching-research groups and lesson preparation groups, which were first introduced in 1957, originated from Russia (Wu 2010). The objectives are to exchange ideas on teaching experiences, and raise teachers’ thinking,

professional standard and educational quality (Wu, 2010). The ‘Work regulation (draft) on research group for secondary teaching’ [*guanyu zhongxue jiaoxue yanjiuzhu gongzuo tiaoli (caoan)*] by the Ministry of Education, covers details on the organization of teaching-research group such as the teaching-research work content and organizational leadership. The document states that three or more teachers will form a subject teaching-research group. If there are insufficient number, the group can be combined based on similar subjects. The objectives of the teaching-research group are for teachers to “carry out research work, draw conclusions, exchange teaching experiences, enhance the teachers’ thought, improve professional standard, and raise the educational quality” (Wu 2010, 13). The above objectives reflect the essential purpose of a PLC where a group of people gather to share and improve each other’s practice in an ongoing, reflective, collaborative, inclusive, learning-oriented, and growth-promoting way (Toole and Lewis 2002; Bolam et al. 2005).

The Chinese PLC model plays an integral role for school teachers and leaders to continuously seek and share learning, and act on their learning so as to enhance their effectiveness as professionals for students’ benefit (Tan 2013). Since the late 1950s, secondary and primary schools progressively and comprehensively formed teaching-research groups based on the same subject (e.g., mathematics teaching-research group) and lesson preparation groups which group the same subject teachers based on the same grade (mathematics grade 1) (Tan 2013). While all schools have teaching-research groups for all subjects, not all schools have lesson preparation groups for all the grades. For example, a school in Shanghai combines the teaching-research group and lesson preparation group into one for English language, while the mathematics teaching-research group is divided into upper and lower grades rather than five grades. The size of a teaching-research group varies from three to around ten. There are three levels of teaching-research activities in Shanghai: municipal, district, and school. At the municipal level is the teaching-research office. The district level comprises the teaching-research offices from the teacher training colleges of all districts. At the school level is the teaching-research department in schools. Each school’s teaching-research department is in charge of the teaching-research groups within the department, and the lesson preparation groups can be a subset of the teaching-research group. Most teaching-research groups meet once a week for about two or three periods (each period lasts 40 minutes). The meeting is planned into the timetable to ensure that structural support is given to teachers to take the teaching-research activities seriously.

Within the hierarchy and structure of PLC in China and thus Shanghai there is however a high level of flexibility for the teaching-research groups. The teachers usually come together to discuss their teaching experiences, share about a new theory in practice, discuss exam questions and problems encountered in teaching, and conduct research that is linked to their teaching. Typical activities include discussing group’s plan at the start of the term, going through the teaching concepts together before class, planning public lessons, discuss teaching-research competition, checking assignments, reviewing test papers of different grades, monitoring the level of difficulty for teaching, and seeing to problems that teachers face.

The teaching-research group also invites educational experts such as teaching-research officers from the district, university professors and senior teachers from another school for guidance (Tan 2013). It is also not uncommon for teaching-research groups of various schools in the same district to come together to be trained, plan and then exchange ideas. However, not all activities of the teaching-research groups have to be face-to-face. For example, some teaching-research groups in Shanghai schools ‘meet’ via asynchronous online discussions. To encourage resource sharing, the materials and research findings of the teaching-research groups and lesson preparation groups are often uploaded onto a staff portal.

Teacher collaboration through teaching-research groups is perceived to have much potential to benefit teachers. A common proverb used by teachers in China, ‘taking what is long to make up for what is short’ [*quchang buduan*] sums up the perceived function of PLCs in Shanghai – that is, the act of drawing upon the strengths of others to patch up one’s deficiency (Tan 2013). The mutual sharing of new ideas is especially important when it comes to sharing new ideas. A recent study from Wang (2014) found that intentionally arranged organizational structures support teacher professional learning and collective inquiry.

Rationale for PLCs in Singapore and Shanghai

The attractiveness of PLCs in both Singapore and Shanghai comes in several fronts. First and foremost, is its focus on students’ learning outcomes. Both PLCs in Singapore and Shanghai focus on student learning and outcomes through improvements in teaching. It has been observed that professional development that focuses on student learning and helps teachers develop skills to teach specific kinds of content has strong positive effects on teaching practice (Darling-Hammond and Richardson 2009). PLCs have also been reported to have a strong positive relationship with student achievement (e.g., Thompson, Gregg and Niska 2004). This is understandable as teachers are more likely and motivated to invest time in professional development activities that have more direct impact on their students’ learning and outcomes. Relevance on student learning has been identified to be one of the essential practices of teacher community (Lieberman and Miller 2011).

Besides the focus on students’ learning outcomes, the fact that PLCs take place at the work place is another plus point. PLCs in Singapore and Shanghai are embedded in teachers’ school work schedule. The job-embedded nature of PLCs could potentially contribute to a smoother translation of teacher learning to classroom teaching practices and student learning outcomes. Teachers in their PLCs, who are placed within their own unique contexts and situations, would inadvertently discuss shared instructional problems and how to improve their classroom teaching, and hence enhancing their performance. It has been noted that collaboration among teachers has the potential to improve staff performance (Schmoker, 2004). Lieberman and Miller (2011) further raised the importance of teacher communities that connect teacher learning and student learning. Improvements in student learning outcomes resulting from PLCs would also have an immediate impact on teacher morale and job satisfaction (Bolam et al. 2005).

Third, PLCs provide the conditions for continual teacher learning. As PLCs in Singapore and Shanghai are made up of teachers belonging to the same content subject and/or grade level working on achieving the common student learning outcomes in the same school, they are constantly faced with a common set of pedagogical challenges and issues which they together must solve. The coming together to share common pedagogical challenges, issues and solutions would also bring about greater camaraderie among team members and strengthen group identity and solidarity. This too is a supporting condition for continual teacher learning.

Fourthly, the discussions that take place in PLCs have the potential to ensure rigor in the way teachers develop their pedagogical and curricular knowledge. The four critical questions to guide discussions and the use of action research in Singapore PLCs are very useful insofar as it affords teachers questioning and refining their knowledge about teaching. Likewise, Shanghai teachers benefit from participating in research guided by more experienced teachers and university partners. Knowledge about teaching is amenable to interrogation through reflection and inquiry activities such as reflective practices and action

research. This is a great departure from the “transmission of knowledge and skills to teacher by experts to the study by teachers of the teaching and learning process” (Sparks and Hirsh 1997, 12). This is consistent with Lieberman and Miller’s (2011) assertion that collaborative inquiry to stimulate evidence-informed conversations is an essential practice in teacher communities. Fifthly, PLCs have the potential to contribute to positive changes to the school culture which are considered as second-order changes (Wells 2008) resulting in the potential to improve school capacity to serve the learning needs of students (Boyer 1995). On the whole, the potential of PLCs positively impacting on teacher collaboration in Singapore and Shanghai education systems has been well highlighted (e.g., [Hairon 2006, 2012](#); [Wang 2014](#)).

Challenges of PLC Implementation in Singapore and Shanghai

Notwithstanding the apparent benefits of PLCs in the Singapore and Shanghai contexts, there remain several key challenges. First, a major constraint on teachers’ commitment to PLCs is their *heavy workload*. In the case of Singapore, the workload is brought about by the increasing demands placed on schools by various stakeholders (e.g., policymakers, parents, district leaders, etc) and the sheer pace of educational change in Singapore education. Singapore teachers, as elsewhere, are already overburdened with teaching and non-teaching (administrative) tasks. Hence, the introduction of PLC processes in schools may be seen by teachers as yet another ‘add-on’ burden. In the case of Singapore, the issue of teachers’ heavy workload in teacher communities has been well documented (e.g., [Hairon and Dimmock 2012](#); [Hairon, Goh and Diwi 2014](#)). The focus on evidence-based practice in PLCs will inevitably require time on teachers on the following: peer classroom observations, reading and consolidating appropriate literature, research instrument construction, data collection, data analysis, and presentation of findings within and outside of schools; together with the administration to support such activities. Teachers are already challenged with coping to complete basic teaching workload such as completing the syllabi and marking on a daily basis.

Although the Singapore MOE has introduced the weekly 1-hour time-tabled time for teachers to come together to discuss on professional matters, it could be seen as another distraction from their core professional commitment on teaching. The roles of teaching and researching are, in a sense, contradictory when time resource is scarce. Furthermore, it is understandable for teachers to prioritize teaching rather than professional learning in an environment of high workload and scarce time resource. Besides having to prepare for examinations and promoting the holistic development of each child, teachers are now faced with a deluge of extraneous work demands that stems from school niche programmes and special school cluster or district programmes, on top of programmes that come directly from the education ministry such as National Education and ICT.

On the issue of heavy workload for teachers, a leaf may be taken from Shanghai. In contrast to Singapore, Shanghai does not have the same problem of heavy workload as teachers in Shanghai have relatively lighter workload. Shanghai teachers teach an average of 14.7 periods or 9.8 hours a week (each period lasting 40 minutes) ([Jiefang ribao 2011](#)). In contrast, Singapore teachers teach an average of between 14 and 16 hours a week in addition to extra-curricular responsibilities. Furthermore, teachers in Shanghai are paid according to their workload and job responsibilities. A teaching-research group leader, for example, is paid extra for shouldering this responsibility. In contrast, PLC involvement in Singapore is not tied to teacher’s pay.

Another potential issue for PLCs is the *hierarchical work structure* that potentially restricts teacher collaboration. Both Singapore and Shanghai have a ‘command and control’ school system – from the highest authority (MOE for Singapore and the Municipal Education Commission for Shanghai) down to the cluster (or district) superintendent, school principals, department heads and teachers. This hierarchical top-down structure – characteristic of Asian high power-distance cultures ([Hofstede 2001](#)) – traditionally ensures strong, direct alignment between the stages of policy conception to implementation. Policies conceptualized by the Singapore MOE and the Shanghai Municipal Education Commission are thus normally efficiently cascaded down through the layers of the education system to the teachers. This hierarchical work structure is a mirror of the hierarchical and efficient public administration established in all public sectors. In the Singapore case, a hierarchical and efficient public administration system is centrally motivated by economic pragmatism, breeding a culture of ‘taking directives from the top’ and ‘productive efficiency’ ([Hairon 2006](#)).

While a hierarchical work structure has traditionally been as a top-down implementation of policy, questions remain as to whether this will help or hinder the implementation of PLCs and innovative teacher practices in schools. The essence and success of PLCs rests on teacher initiative and willingness to engage in communities of learning. The PLC initiative differs fundamentally from previous policy innovations in terms of teacher-initiated learning and teachers as agents taking responsibility for developing their professional practice. Yet teachers in Singapore and Shanghai schools are externally driven from the education ministry (MOE or Shanghai Municipal Education Commission) to implement a favored or prescribed PLC model. This seems incongruous with the spirit of PLCs as understood in Anglo-American systems. In Singapore, although the education ministry does not specifically dictate how PLCs are carried out, the expectation is for schools are to support the PLC policy initiative. The Shanghai version of PLC policy initiative is different insofar as the education ministry provided a much more structured way in which PLCs are to be carried out. The hierarchical work structure for PLC implementation still remains to be the *modus operandi*.

Although work structure in Singapore and Shanghai education system are considered generally hierarchical, the implications on PLC implementation in each context are still culturally nuanced. While both Singapore and Shanghai schools face the concern of hierarchical work structure, we postulate that Shanghai schools appear to face less challenge with it. This is because there exists the ideology of collectivism among the Chinese even in the presence of centralized control and management under socialist regime. Chinese teachers, including those in Shanghai, have culturally accepted and are accustomed to carrying out PLC activities within a hierarchical work structure due to their strong collectivist mindset. The value of collectivism is strengthened by the web of ‘*guanxi*’ [literally ‘relation’] – personal connection that an individual may draw upon to secure resources and advantages at work, and in the course of social life ([Law 2009](#), 306-307). *Guanxi* ensures that relationships between the school administrators and staff as well as among staff are marked by long-term trust, respect, discussion and negotiation, loyalty, differential treatment according to different situations, personal care and relation, and exchange of information ([Law 2009](#)).

Further, China’s management system and educational structure in general has been described as hierarchical and collectivist by researchers. Wong (2012) reports that the management system in China is a “nested, hierarchical pyramid, where policies and resources are transmitted downward level by level” (5). Walker, Chen and Qian (2008) have highlighted the “hierarchical-constructed professional learning communities among Chinese school leaders” (428). Other researchers have also noted the cultural practice of collectivism in Chinese society and education ([Huang and Gove, 2012](#); [Tan 2013](#)). In essence, collectivist

ideology is influenced by Confucianism, which intimately and inextricably ties collectivism with hierarchical relations comprising father-son, emperor-subject, husband-wife, elder-younger, friend-friend relationships. Instead of creating tensions, hierarchical social relations are considered the glue for social harmony for people to share, care, understand or tolerate differences, resolve conflicts, and even for promotion of prosperity (Chou, 1996; Lee, 1996). The Chinese culture gives primacy to the notion of *family* in society based on reciprocal responsibilities and the discharge of one's duties in their respective hierarchical positions, and in so doing maintaining prosperity and harmony (Liu, 2012). The well-defined, top-down and communitarian socio-cultural structure in the Chinese society thus makes it easy for Shanghai teachers to collaborate in groups and share resources and ideas. In addition, the highly bureaucratic and systematic way in which PLCs are carried out works in perfect tandem with the spirit of collectivism and discourages individualism.

Singapore teachers, on the other hand, are relatively more individualistic (or less collectivist) than Shanghai teachers, even though it is still considered collectivist in contrast to Western socio-cultural context (Hofstede, 2001). This has been engendered by the strong social policy on meritocracy whereby all individuals are rewarded based on merit such as effort, ability and talent. Furthermore, although Asian societies such as Singapore are generally more collectivist in contrast to Western societies (Hofstede, 2001), there is also growing recognition that the collectivism-individualism simple dualities may no longer hold true because cross-national differences might be impacted by significant within-country differences (Freeman and Bordia, 2001; Voronov and Singer 2002). The Singapore city-state has now been considered to strongly endorse collectivist traits while adopting individualist traits of assertiveness and egalitarianism (Quek & Knudson-Martin, 2006), and to manifest increasing independent values (Teo et al. 2003; Richard and Ross 2004). The culture of 'grasping self-attitude' or locally known as 'kiasu-ism' has also been reported as a prominent and significant context in which teachers work collaboratively (Ellis 2014). Finally, the tight-loose approach in PLC implementation, whereby the education ministry expects all schools to participate in PLCs, but giving full autonomy to schools and teachers in how it is to be carried out, attests to the value placed on both collectivism and individualism.

A third challenge facing teachers is the *ambiguity of PLC processes*. Again, this is a challenge that is probably more relevant for Singapore than for Shanghai. Although the Singapore MOE has provided detailed framework, instructions and tools in the PLC Starter Kit, what remains uncertain is how teachers and school leaders actually implement PLCs within their respective unique school contexts (Hairon and Dimmock 2012). The details on how Coalition Teams support and work in synchrony with Learning Teams in different school contexts are not clear in practice, and perhaps, cannot be mandated. This is understandable because while the Singapore MOE has strong expectations for schools to become PLC schools, it also wants to embrace the idea of bottom-up initiatives and contextual diversity in the practical implementation of PLC. The Singapore PLC model requires both Coalition and Learning Teams to engage in PLC activities to impact pedagogy and school culture, and eventually student outcomes, but precisely how they are to do that remains largely implicit and for each school to decide. According to Hord (2008), although there are "significant study results that inform us about what and how professional learning communities function" (p. 12), detailed documentation on what people do in PLCs (Hipp et al. 2008) is largely absent. Research outside Anglo-America is even scarcer (Bolam et al. 2005; Wells 2008). Both teachers and school leaders are challenged to engage in new ways of collaborating to ensure that they are successfully embedded in their schools. Both teachers and school leaders might also ask: 'How much flexibility actually exists for schools to shape their PLCs within government framework and policy guidelines?' 'Is there an optimal size

for a PLC?', 'To what extent are the characteristics of effective PLCs captured in generic literature that applies across different cultural contexts?', 'How do teachers learn in such communities?' And most difficult of all, 'How do PLCs bring about change or improvement in student learning outcomes?' Furthermore, the link from PLC activities to student learning outcomes is mediated by many 'variables' within and outside school – school culture, instructional time and engagement, teacher learning and the effectiveness of teaching, student learning practices, home-school relations, private tutoring and socio-economic status. As argued earlier, ambiguity in the links between PLC activities and improvement in teacher classroom practices and student learning outcomes may undermine teachers' will to participate in PLC activities. The same ambiguity may lead school leaders to not prioritize PLCs in their school reform agenda in terms of resource allocation. School leaders may opt instead for easier reforms that promise to deliver speedier and more tangible learning outcomes.

Lessons to be Learned

There are a few lessons to be learned from the comparisons made between Singapore and Shanghai with respect to PLCs. Singapore teachers as well as those from other more centralized education systems could learn from PLC practices in Shanghai to resolve some of the key challenges raised earlier. First and foremost, the PLC practices in Shanghai schools had a much longer history, and this highlights the importance of investing resources and time grounding PLC practices as a way of life in school – strongly imbedding it in the school culture. The PLC culture thus cannot be established within a short period of time, neither should PLC policy initiative be one of those that teachers consider to be a passing fad, or the flavor of the month.

Second, for PLCs to successfully work, clear expectations have to be clearly spelt out so that teachers are well-informed about their involvement in PLCs. In Shanghai, there are clear structural and official frameworks for teacher collaboration and mentoring such as planning the teacher-research group activities into the time-table, giving teaching-research group leaders extra pay for performing their duties, and expecting mentors to submit their mentoring plan and completion report. In general, PLCs are the means for Shanghai teachers to carry out three main activities: lesson preparation and observation, implement new teaching methods, and involvement in teacher professional development. Although this does not have to translate to very specific nitty-gritty PLC practices, it would mean that teachers need to know what PLCs really look like in practice rather than on paper. These are appropriate support given at the organization level. For the case of Singapore, although Starter Kit on PLCs outline the possible roles of group members and school leaders, more modeling of PLCs for teachers and leaders needs to be done to gradually remove the ambiguities of PLC enactments. It is also not enough just to go through a few days full day or half-day workshop on PLC facilitation and expect effective enactments of PLC facilitation thereafter. The development of PLC competencies must be lifelong consistent with the literature on professional development.

Third, Shanghai teachers focus on a very specific and efficient process of inquiry in teacher collaboration – that is, PLCs are to improve their craft through lesson planning and observation (Tan 2013). The lesson preparation groups are formed specifically to plan lesson together, observe and critique one another's lessons, and share teaching resources. Both the lesson preparation groups and teaching-research groups are required to report on a regular basis their plans and achievements to the school, and organize talks and forums to share their

ideas with other groups in the school, or with other schools in the district. This is consistent with Wang's (2014) findings highlighting the importance of peer-monitoring for successful PLCs. The focus on specific processes is advantageous insofar as it optimizes the use of precious teachers' time to impact on teaching and learning. In contrast, Singapore teachers are given three inquiry tools to choose from consisting of learning circle, lesson study and action research. Although the choice given to them potentially enhances greater ownership, the shifts in the use of these inquiry tools over a period of time rob teachers the in-depth acquisition of the knowledge and skills in using them. For teachers to effectively engage in PLCs, it is best that they learn a specific inquiry process in an in-depth manner over a sufficient period of time.

Fourth, Shanghai PLCs leverage on the experiences of teachers within the school, district and external partners to value-add teachers' knowledge about teaching. For the former, it is common practice for teachers to conduct open or demonstration lessons at least once per semester within the PLC or open to the school and district (Wang 2014; Tan 2013). They can also conduct such lessons at the inter-district levels (Tan 2013). For the latter, schools can invite experts from teacher training universities, district teaching-research officers and others to speak at forums, participate in the group's activities, and share their research and ideas with the group members. The leveraging on both internal and external educators also serves to provide a conducive environment for teachers to experiment with new pedagogies (Ying 2009). Singapore school teachers can likewise leverage on the deep experiences of their teacher leaders comprising Senior Teachers and Lead Teachers to deepen knowledge about teaching of PLC group members. They could also tap on the experiences of Senior Teachers and Lead Teachers from other schools within the district, or partner with university professors to add value to their PLC discussions, albeit bearing in mind the optimal use of time.

Fifth, at the system level Shanghai teachers are appraised based on their active involvement in teaching-research groups, which has significant bearing on their professional development plans. School-based teacher professional development plans require teachers to be trained by virtue of their involvement in their teaching-research groups. For example, a school in Shanghai mandates that all teachers should be involved in its school-based teacher professional development with specific credits to be earned by the teacher, as illustrated below (Tan 2013):

- Each teaching-research group to organize two subject-teaching research projects a year on 'subject reform'. The speaker can be experts from within or outside the school or internal. If the speaker is from within the school, he or she needs to submit the text to the school management. Each attendance will earn the teacher 1 credit, and the speaker will earn 3 credits.
- The teaching-research groups for Chinese Language, Mathematics and English Language should have at least 8 public discussion lessons per school term. The other subject teaching-research groups should have at least 4 per school term. The person who critiques the lesson (usually a senior teacher) will earn between 1 credit (at teaching-research group level) and 2 credits (at school level). The person giving the public lesson needs to provide the teaching materials on the lesson along with teaching reflections.

The appraisal system which rewards group effort thus contributes to teachers' willingness to share ideas and resources. This is also evidently consistent with their collectivist cultural value. Further, the appraisal and reward structures look not just at individual teacher's

performance but also students' results. In the Singapore education system, professional development has little contribution to staff performance appraisal although the ideal is for performance appraisal to surface areas for improvements and thus professional development in terms of staff competencies. Although it can be argued that rewards are centrally to do with the extent and quality of teacher performance and not involvement in professional development, the fact that PLC involvement is not rewarded in some ways undermine the value place on PLCs. School leaders and education policymakers need to seriously consider rewarding and recognizing teachers' work in PLCs with monetary or non-monetary implications especially when PLC is considered somewhat mandatory, and is central in teacher development and school improvement.

Conclusion

The discussion above comparing and contrasting PLCs in Singapore and Shanghai points to the importance of the structure-agency dialectical relationship. For teachers to want to learn through communities (agency) such as PLCs, a range of enabling conditions (structure) need to be in place. Firstly, teachers require sufficient time to engage in collaborative learning, and that itself cannot rob them of time to cope with existing day-to-day teachers' workload, which comprises teaching and non-teaching responsibilities. Regularity of time has been identified as an essential practice for teacher communities (Lieberman and Miller 2011). Secondly, teachers' involvement in PLCs also needs to be consistent or aligned with staff appraisal. Although some may argue that linking appraisal with development may diminish the will of teachers to initiate PLCs, a weak link between learning and appraisal may suggest a lack of importance and priority placed on PLCs. After all appraisal is inherently about appraising what is valued in schools. Teachers' involvement in PLCs should be evaluated or appraised as much as classroom teaching is evaluated or appraised. What gets valued also gets recognized and rewarded.

Third, a culture of learning through collaboration needs to be fostered over time in a continual and developmental manner. We argue that PLC should not just be another initiative – a passing fad, rather be part-and-parcel of teachers' day-to-day socio-cultural practice and identity. This only means that school leaders and teachers need to adopt a long term view when developing PLCs. Fourth, teacher discussions and participation in PLCs ought to translate to surfacing and questioning of teachers' tacit knowledge on teaching so as to develop it further. This assertion is based on the assumption that the development of teachers' knowledge will inevitably result to improvements in classroom teaching. Lieberman and Miller (2011) proposed that an essential practice of teacher communities is the purposeful organization and focus on activities that will “enhance learning for both the adult and students in the school” (19). Fifth, for PLCs to be sustainable, teachers need to be fully convinced that their participation in PLCs translates to positive improvements in classroom teaching, and crucially, to positive student learning outcomes. The link between teacher learning and student learning needs to be very tight.

The above five suggestions can apply in more hierarchical (commonly seen in Asian contexts) or more egalitarian (commonly seen in Western contexts) social structures or systems. In other words, hierarchical work structure in itself does not hinder successful enactment or implementation PLCs. The comparative analysis between Singapore and Shanghai shows that PLCs can function and thrive in hierarchical systems. The issue is less to do with policy mandates and external monitoring of benchmarks (or accountability frameworks) as raised by Lieberman and Miller (2011), but more to do with alignment of

intentions and aspirations between school teachers, school leaders, and educational policymakers. At the macro level, as long as intentions and aspirations of mandates and accountability frameworks pertaining to PLCs are consistent with teachers' day-to-day concerns on teaching and learning, they will be less resistant to them. At the meso level, as long as school leaders can prioritize PLC as a strategic lever for school improvement, and provide the necessary support and resources for it, teachers will experience greater meaning in their PLC engagement. At the micro level, as long as teachers do not have to spend unreasonable time in fulfilling accountability frameworks (e.g., documentation, showcase attainment of KPIs), they will be more willing to spend time in PLCs meaningfully and productively for the sake of students' learning. These three perspectives are what we consider a response to Lieberman and Miller's (2011) assertion – "Figuring out how to negotiate a professional orientation in a bureaucratic structure is a difficult, but necessary, task" (20).

In conclusion, it is worth reiterating that teacher professional development plays an important role in raising the quality of teachers, curriculum, teaching, and student learning in the context of preparing future citizens with 21st century skills, and remaining competitive in a globalized world. The choice of using PLCs as the key driver for improvements in classroom instruction and building a learning culture in schools is strategically wise. However, there are real challenges and issues that may hinder the successful implementation of PLCs such as heavy teacher workload, ambiguities in policy initiatives pertaining to PLCs especially in terms of genuine impact on teaching and learning, and hierarchical work structures – all of which vary in its effects on collaborative learning. These challenges need to be taken into consideration when implementing PLCs for teacher collaboration.

At the heart of PLC success is the necessity of teachers' will or willingness to learn. The role of leaders in schools is to provide the structural and cultural support to nurture teachers' will to learn. Without it, any professional development effort, project or programme will bound to falter. The discussions on PLCs comparing and contrasting Singapore and Shanghai education systems have highlighted the importance of alignment between key school stakeholders, namely educational policymakers, school leaders and teachers. This is regardless of how it is to be reached as different education contexts are bounded by their own social norms and rules.

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