



Professional Learning Communities

A Movement for Teacher-led Professionalism

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Professional Learning Communities: A Movement for Teacher-led Professionalism

*Daphnee Lee, Tay Wan Ying, Helen Hong**

Abstract

This working paper builds on existing work on teacher professional learning communities (PLCs) in both local and international contexts, to examine how collaborative learning can enrich teacher professional development for the actualization of teacher-led professionalism. It also aims to bring together the multiple views and lenses of state, local and international academia, and practitioners into an integrated strategy for the research on PLCs in Singapore schools. In doing so, the paper aspires, through research, to contribute to efforts for reconfiguring teacher professionalism, buttressed by teacher-led professional learning efforts. In response to these aspirations, we propose a 5-year research trajectory for actualizing teacher-led professionalism through mentoring collaborative reflection among teachers in PLCs.

Professional Learning Communities for Teacher-led Professionalism

The introduction of teacher professional learning communities (PLCs) in Singapore schools, according to the vision articulated by former Minister of Education, Mr Ng Eng Hen (2009), was to help hone "a world-class education service" by "strengthening teacher expertise". Identified as one type of professional support networks introduced

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to build teacher professionalism in Singapore, PLCs form an integral part of ministry communications on in-service teacher professional development (Ministry of Education, 2014b). Through participating in PLCs, teachers come together to develop knowledge expertise and advance professional growth as a community. It is hoped that by providing the space for dialogue, teacher ownership in the development of collective professionalism can flourish. Elsewhere, teacher professionalism has also been articulated as "teacher-led culture of professional excellence" (Academy of Singapore Teachers, 2014). In this, PLCs can be said to support school-based professional development, led by teachers, for teachers.

Using this discussion on PLCs, we aim to examine how research can parallel the move from specific initiatives to general capacity building of Singapore teachers. From this, we seek to identify key cornerstones that will contribute towards the strengthening of teacher professionalism. Existing professional-development plans tend to be seen as product suites (i.e., the fish), rather than enculturation processes (i.e., how to fish). By product suites, we mean the various initiatives (i.e., Community of Practices – CoP, Learning Study/Lesson Study – LS, Networked Learning Community – NLC, Professional Learning Community – PLC, Skillful Teaching Enhanced Mentoring – STEM, etc.), which commonly serve the purpose of getting teachers to come together and grow through collaborative learning. Each initiative has its merits and different specifications to enrich collaborative learning. Whichever the initiative, they share in spirit the desire for teachers to learn together, even though these initiatives are rolled out at different points in time, by different implementers, and supported by different sets of scholars and scholarly literature. Given the multitude of initiatives implemented for the one purpose of encouraging learning communities among teachers, it is all the more crucial for teachers to engage in reflective dialogue, so as to make informed decisions about the knowledge they integrate (not imbibe) into practice. PLC is an established collaborative learning initiative in Singapore, involving almost the entire school population (in more than 300 participating schools). This paper looks at how further leverage in collaborative learning can be gained by examining research insights that have emerged from the study of an established movement such as PLCs.

In this, we propose the extension of school PLCs' successes to other domains and practices of collaborative learning, so as to provide sustainability in continuing the wheel of collaborative learning efforts among teachers. A research trajectory on the use of PLCs as a vehicle to actualize teacher-led professionalism is proposed. Derived from the compilation of international and local research efforts, an integrated strategy for research on teacher collaborative learning in Singapore is put forth.

Background to Research Interest

The PLC aims to construct a knowledge society through knowledge co-creation, which sets the departure from the way professional development was traditionally perceived to be (Shumar, 2009). Hord's proposition for collaborative learning as core to teacher learning and professional development was conceptualized within this intellectual context (Hord, 1997). Against this background, policymakers, schools and researchers are interested in how PLCs are faring in the facilitation of 21st century collaborative learning.

In this knowledge era, the digital revolution has provided generous resources in terms of social media and open-access knowledge via the Internet. Teachers have never been in a better position than now to take charge of their own professional growth. Learning has become a lifelong endeavour, as teacher education no longer needs to be contained within a finite pre-service programme (Niemi, 2002, 2008; Stoll, Bolam, McMahon, Wallace, & Thomas, 2006). This inspired teachers to venture out of the isolation of their classrooms to form teacher collaborative networks, which heralded the PLC school movement (Hamos et al., 2009; Hargreaves, 2003; Vescio, Ross, & Adams, 2007).

With the embracement of dialogues that accommodate a diversity of voices, tensions may inevitably surface in professional environments (Pella, 2011). Emerging from this is a rising emphasis for openness in embracing conflict (Stoll et al., 2006) and maintaining trust amidst differences (Vescio, et al., 2007). Thus, the notion of "shared values" can no longer be a forethought conceived by policymakers or the school principal in the drawing room (Hamos, et al., 2009; Louis &

Marks, 1998; Vescio, et al., 2007). Authentic teacher professionalism needs to be organically conceived from the emergent dialogues amongst teachers (Fullan, 1993).

Professional learning community – a working definition

Before we move on to highlight the facets where professional development can enhance teacher capacity building, a common understanding of the conceptual premises of the PLC is needed. A PLC is a community of practitioners who collaboratively engage in continuous cycles of inquiry-based teacher learning (DuFour, DuFour, Eaker, & Many, 2010; Hargreaves & Fullan, 2012; Hord, 1997; McLaughlin & Talbert, 2006). Teachers may first become interested in collaborating with each other when they encounter challenges in bringing about student learning, which motivates them to engage in problem-based identification of solutions to overcome these challenges (Campbell, 2005; McLaughlin, 1992; Webster-Wright, 2009). The process may involve collecting data from students to lend a contextualized understanding to these problems, and from the data, teachers may jointly reflect on existing and alternative teaching practices as they monitor their understanding of these practices as peers (Fullan, 1993, 2007; Schon, 1983; Vescio, et al., 2007). An effective learning cycle may eventually conclude with the teachers taking ownership of this knowledge as they adapt and apply this co-created knowledge by formulating and implementing concrete strategies to update teaching practices (McLaughlin, 1992; McLaughlin & Talbert, 2006; Vescio, et al., 2007). Having established an understanding of the conceptual premises of the PLC, this paper will next highlight efforts made by state governments in supporting schools to become PLCs. As the PLC movement gains momentum, it caught the attention of state governments committed to education reforms. Three notable state government efforts emerged in the UK, the US, and Singapore.

State Government Efforts for Schools to Become Professional Learning Communities

PLCs first emerged and thrived in North America and in the UK. At the same time, the movement is increasingly playing an important role in teacher learning and practice in other countries, such as

South Korea, China (Hong Kong and Shanghai), Malaysia, and Singapore (Harris, Jones, Sharma, & Kannan, 2013; Jensen, 2012). We will restrict our examination of PLC movements to those initiated by state government efforts, as these cases are most comparable to the Singapore approach.

In the UK, scholarly works prevalently feature PLC efforts in England and Wales. We have chosen to selectively feature Welsh government efforts to form PLCs in schools. Although English schools are actively encouraged to become PLCs by government education bodies (such as the Department for Children, Schools and Families and the General Teaching Council), the formation of PLCs in England was not a state-led initiative (Webb, Vulliamy, Sarja, Hämäläinen, & Poikonen, 2009). Michigan, US, provides an example of how state-led implementation of PLCs resulted in multiple trajectories to successful PLCs in the US. In Asia, our PLC initiative, led by the Academy of Singapore Teachers (Ministry of Education), will be examined. In the review of the Welsh and Michigan cases, we will attempt to draw policy lessons from state-commissioned studies of these two countries. After which, we will compare these lessons with empirical evidence that have emerged from Singapore baseline studies.

The Michigan initiative had sought to: (1) instill an integrated curriculum, instruction, and assessment; (2) promote systemic change; and (3) produce impact on schools, classrooms, individual teachers and students (Dutro, Fisk, Koch, Roop, & Wixson, 2002, p. 788). Michigan PLCs, under the flagship of the Michigan English Language Arts Framework, found a variety of expressions at the district level. Evaluation of this initiative adopted a multifocal lens to examining how teachers found effective PLC engagement within the four districts under study in Michigan. Multiple trajectories to successful PLC outcomes were identified. Some of the exemplary practices highlighted in the Michigan study include improvements in teaching and mentoring practices. Teachers also reported greater commitment to reflective practice and lifelong learning. In addition, teachers have come to see themselves as school improvement agents and policy influencers. From the survey of the Singapore landscape, we likewise found, among PLC-engaged teachers, comparably higher

engagement towards collaborative learning and stronger commitment towards enhancing teaching practices for student learning. However, while Michigan reported stronger teacher engagement as reflective practitioners, Singapore teachers (to be evidenced by our baseline study in the ensuing paragraphs), had reported lower engagement in this endeavour, as compared to their successes in other realms of collaborative learning.

In Wales, the Welsh Assembly Government also had student outcomes in mind in their support for PLCs, underpinned by the *School Effectiveness Framework* (Harris & Jones, 2010, p. 173). State-commissioned evaluation of PLCs involved a range of focused examinations in student outcomes (Hallinger & Heck, 2009; Harris, 2008). The challenges that had surfaced in the Welsh study did not show as significantly in the Singapore school landscape. Teacher resistance issues, for instance, did not pose much of a challenge in Singapore, likely due to the high value accorded to consensus in Singapore's culture. Notably, although between-schools PLC engagements exist, this is not prevalently practised in both Singapore and Wales. In recent years however, between-schools collaborative learning are on the rise in Singapore.

The Academy of Singapore Teachers (AST) has launched PLCs in more than 300 schools in Singapore. The AST, being well-attuned to the ongoing intellectual conversations on PLCs, adapted from DuFour and Fullan a hybrid model termed the "PLC Model for (Singapore) Schools" (2010, p. 5). Inspired by the DuFour lens, the AST seeks to instill in Singapore schools the Three Big Ideas: ensuring that students learn; building a culture of collaboration; and focusing on student outcomes (2012a, pp. 7-10). Although given less attention in actual communications by AST to schools, references to Fullan were made through the reiteration of Fullan's Triangle of Success: deep pedagogy (i.e., teachers should deepen teaching and learning capacities), systemness (i.e., while working within the structural affordances available within the schools they teach in) and school leadership (i.e., school leaders should support teachers in this endeavour) (Academy of Singapore Teachers, 2010, p. 6). A baseline study of this implementation has completed, involving the members of this working

paper. A further elaboration of this study will ensue in the later sections of this paper.

Having taken stock of the literature on how state-initiated PLCs have performed, there are some learning points that can be drawn for Singapore. Firstly, drawing from the Michigan example, the “master plan” for PLCs in Singapore schools has the grounds well covered in terms of collaborative learning and mentoring these practices. Secondly, with regard to recommendations for between-school PLC collaborations drawn from the Welsh example, policy makers here may wish to observe the extent of success at encouraging between-schools PLCs by the Welsh state government before taking on this recommendation. This will be highly informative for making the decision on whether it is feasible for Singapore schools to do so. Most importantly, in contrast to the Michigan story, results from the Singapore baseline study show that teachers here are much less confident about being effective reflective practitioners. The effort may be worthwhile for collaboration between policy makers, practitioners and researchers to explore on the one hand, how mentoring can be further enhanced, and on the other, how reflective practice can be augmented in Singapore schools via PLCs. Furthermore, the abovementioned examples have also shown that although the introduction of PLCs is state-led or state-commissioned, the nature of its activities as well as its implementation and development is very much dependent on teachers and schools. For PLCs to flourish, teachers and the school management have to collaboratively nurture a teacher-led culture, so learning communities can become an avenue where teachers build capacity for reflective dialogue and teacher-led professionalism.

Implementation-wise, Singapore shares a similarity with Wales in the introduction of the movement as a nationwide state-commissioned initiative. Both initiatives were also accompanied by state-commissioned baseline studies to provide the feedback loop on the implementation. The nature of the research work in Singapore, however, resembled more of UK’s and Michigan’s. As with England, the survey questionnaire of Singapore’s baseline study fielded a fuller range of indicators covered in scholarly literature, rather than adopting an intensive focus on student outcomes. Departing from Fidelity of

Implementation slants, the ethnographic segment of the Singapore baseline study aligns with Michigan's in adopting a wide-angle lens that embraces the belief that there is scope for multiple trajectories to effective PLCs.

Global Research Work on PLCs

Research on PLCs predominantly focused on examining school efforts to become effective learning communities. We focus on works with published instruments in this section, with the view of adapting these instruments for studying the situation in Singapore schools. This will allow us to more effectively diagnose which areas of concern need further capacity building in Singapore.

Through school-based fieldwork, Huffman and Hipp (2003) built on Hord's (1997) work and re-conceptualized five dimensions that are critical for the development of PLCs. They identified these five dimensions to be: (1) supportive and shared leadership; (2) shared values and vision; (3) collective learning and application; (4) shared personal practice; and (5) supportive conditions – relationships and structures. These dimensions were applied in the questionnaire – the Professional Learning Community Assessment-Revised (PLCA-R) (Olivier & Hipp, 2010). Oliver and Hipp's (2010) work comes in useful in the instruments fielded to measure what some of the supportive conditions are, such as the types of leadership, values and vision, and relationships that provide the context for PLCs. These form the Supportive Conditions measurements in our Singapore study. The measurement serves as a popular diagnostic tool for assessing the perceptions of principals, teachers, school personnel members and other stakeholders on the "dimensions and critical attributes forming the PLC" (Olivier & Hipp, 2010). In collaboration with the GTC England, Bolam's (2005) and eventually Stoll's (2006) studies fielded a good range of indicators, seeking to find out the status of PLC engagement there. A dimension that forms one of the key indicators of our Singapore study is Reflective Dialogue¹, which will be elaborated further in the review of Singapore research efforts. The applicability of these dimensions were confirmed by Stoll, Bolam, McMahon, Wallace, and Thomas (2006) and they further identified three additional characteristics as significant: (1) mutual trust, respect and support; (2) inclusive membership; and (3) openness, networks and

partnerships. In a later work by Stoll et al. (2006), other dimensions such as reflective dialogue and professional growth were added as other important themes for developing PLCs. For the Singapore baseline study, these published instruments have also been adapted and implemented to study the Singapore movement.

PLC research that adapted the above instruments found that participation in PLCs seemed to have a positive effect on teaching practice. Likewise, Louis and Marks (1998) also sought to measure core PLC characteristics, albeit with a stronger focus on student outcomes, from which we have adapted some of the measurements.

A multi-site study on 24 schools (eight elementary schools, eight middle schools and eight high schools) was conducted by Louis and Marks (1998), to examine the connection between the quality of classroom pedagogy and the existence of the core characteristics of PLCs. Learning teams that displayed the core characteristics of PLCs had higher levels of social support for student achievement and higher levels of authentic pedagogy. Another national-level study on PLCs conducted by Bolam, McMahon, Stoll, Thomas, and Wallace (2005) examined survey data from 393 schools and interview-based case studies at 16 schools. The findings suggest that teachers reported higher levels of morale and improved teaching practice. Across the reviewed studies, teachers reported an increase in collaboration as they participated in PLCs. This suggests a fundamental shift in teaching practice and teacher professional development (Cole, 1997; Vescio, et al., 2007). Participation and engagement in PLCs have helped in promoting collaborative efforts among teachers (Kaplan, 2008).

The literature also suggests that PLCs served well in promoting a collaborative culture in schools so as "to promote school and system wide capacity building for sustainable improvement and pupil learning" (Bolam, et al., 2005, p. 157). The literature review compiled by Vescio and associates (2007), and more recently Avalos (2011), provide a comprehensive snapshot against which we can take stock of our current research efforts. What stood out in the earlier review by Vescio et al. (2007) was the concern over the dearth of research that is able to link PLC to Student student outcomes. In the more

recent review by Avalos (2011), collaborative learning and student learning continue to be the mainstays of PLC characteristics. In addition, the author also pointed out teacher autonomy as a key characteristic of PLCs (which we relate to the dimension of Reflective Dialogue in our study), where teacher autonomy refers to the ability of teachers to make the decisions within their community and in school governance (Avalos, 2011). The research findings on Singapore will be presented in the next section.

PLC Research in Singapore

A variety of research efforts on in-service teacher learning communities (be it PLC, Community of Practices, or Lesson Study) had contributed to the knowledge of teacher learning that distinguishes it from pre-service teacher education, and individualized professional development efforts. Occurring either face-to-face or online, this strand of research efforts maps collaborative professional development toward the creation and dissemination of knowledge repertoire² and skills contributing to reflective practice (critical, reflective and adaptive skills)³.

Empirical research seeking to lend a contextualized understanding of PLCs in Singapore can be considered to be at its nascent stages, as only four studies have been dedicated to this field in educational research. The first study was an evaluation of AST's efforts at piloting PLCs in 51 schools. The more recent studies were concurrently implemented to establish a baseline of the actual implementation in the more than 300 participating schools.

In the first evaluation, it was found that a theory-practice gap exists (Hairon & Dimmock, 2012). Four implementation difficulties were identified: (1) heavy teacher workloads; (2) ambiguity of PLC processes and their efficacy; (3) bureaucracies and red tape hindering teacher professional development that is autonomous; and (4) contextual barriers, such as school leadership styles and the overly centrist implementation of PLCs. These issues continue to exist in the current state of affairs at PLCs.

However, as the initiative now involves more than 300 collaborating Singapore schools, we found a more varied spread in the full-scale

implementation. As no system-wide empirical study has been carried out since its full-scale implementation, a baseline study is needed to provide an updated view of the Singapore PLC landscape. To fill this research gap, three OER research projects were commissioned to investigate the development of PLCs in Singapore: OER18/12LWO *A Value-mediated Approach to Profiling Professional Learning Communities in Singapore Schools*; OER49/12LTL *Exploring the Variety in Lesson Study: Unpacking the Variety from Cases in Singapore*; and OER14/12HS *The Impact of Community-based Teacher Learning on Student Learning Outcomes*. The first study seeks to outline the variety of PLC practices that influences the degree of teacher engagement in Singapore schools. The second study maps the variety and quality of lesson study efforts in Singapore, and how these efforts are instrumental to the advancement of PLCs. The third study examines how Singapore's PLC framework has an effect on school-based curricular reforms that may translate into student learning outcomes.

Phase 1: Contextualization of PLC implementation in Singapore

Common across the three studies is the seeking of a contextualized understanding of learning community efforts, and the impact on Singapore in-service teachers. What we have found was, as a baseline, the different projects looked at different professional development initiatives that aimed to enhance teacher capacity. But we converge strongly in the identification of the gaps across these programmes, in terms of the future work that is needed in teaching and learning, and in building a teacher-led professionalism. The shared focus underpins the importance of adapting externally imported teacher professional development (Japanese Lesson Study, US/UK PLC) to the local teacher network.

To date, OER18/12 LWO has submitted the Final Report of the mixed-methods study to AST (Lee, Tay, Hong, Ning, & Lee, 2014)⁴. Teachers are individuals before they are professionals. Through the measurement of individual Value-Orientedness⁵, we hope to provide a scope for comparison in terms of the value-context that shapes predispositions in PLCs. This mixed-methods inquiry of in-service

teachers engaged in school-based professional learning communities examines the interaction between PLC Engagement and Value-Orientation. Teachers who report the highest PLC Engagement in the survey were found to possess the Value-Orientation profile of having lower Power Distance, higher Rule Orientation and higher Risk Taking. Ethnographic observations give further insight in how Value-Orientation adapts to group influence within PLCs. In high-PLC-Engagement teams where members are predominantly low in Power Distance and high in Rule Orientation, they were observed to be more open to negotiating with authoritative figures and taking risks in pushing for pedagogical reform. This was also observed to be the case even when members reported themselves to be high in Submission to Authority and low in Risk Taking as individuals. Observations point to the potential of learning communities in developing dispositions that may have been originally lacking when teachers functioned as isolated individuals.

Of the range of indicators fielded as measurements of teacher engagement in PLC activities (i.e. Collaborative Learning, Reflective Dialogue, Student Learning and Student Outcome), Reflective Dialogue was reported as the capacity that teachers feel the least proficient in. The pattern was consistent across all participating schools in this survey. Furthermore, this capacity was also found to be the most significant differentiating factor between higher and lower engagement clusters. In contrast, the gaps between higher and lower engagement clusters are much narrower in comparison for teacher Focus on Student Learning and Student Outcome. Ethnographic observations converged with survey findings. Teams selected for observations from high-engagement clusters were observed to demonstrate stronger capacities for reflective dialogues. In addition, observations also point to facilitating (as opposed to directing) mentoring relationships as influential to PLC Engagement (Lee, Tay, Hong, et al., 2014).

The baseline study has provided headways as to future inroads to PLC research in Singapore. The proposed research trajectory for the next 2 to 5 years, built upon the baseline, is charted based on key insights drawn from the study.

Phase 2: Teacher capacity building in collaborative reflection and mentoring reflective dialogue

With the goal of fostering a professional culture towards teacher-led professional excellence (Ministry of Education, 2014a), the Academy of Singapore Teachers has introduced the PLC initiative in schools since 2009. Being an avenue where teachers come together to engage in professional dialogues, the PLC provides the opportunity for teacher-led articulation of professional culture. With the aim of establishing a research agenda for teacher-led professionalism, we propose a framework informed by Phase 1. Phase 2 of the research trajectory addresses gaps in professional development. This proposed research trajectory is illustrated in Figure 1. Phase 3 will examine gaps related to the growth of a teacher-led professional identity and culture, which will be elaborated in the next section.

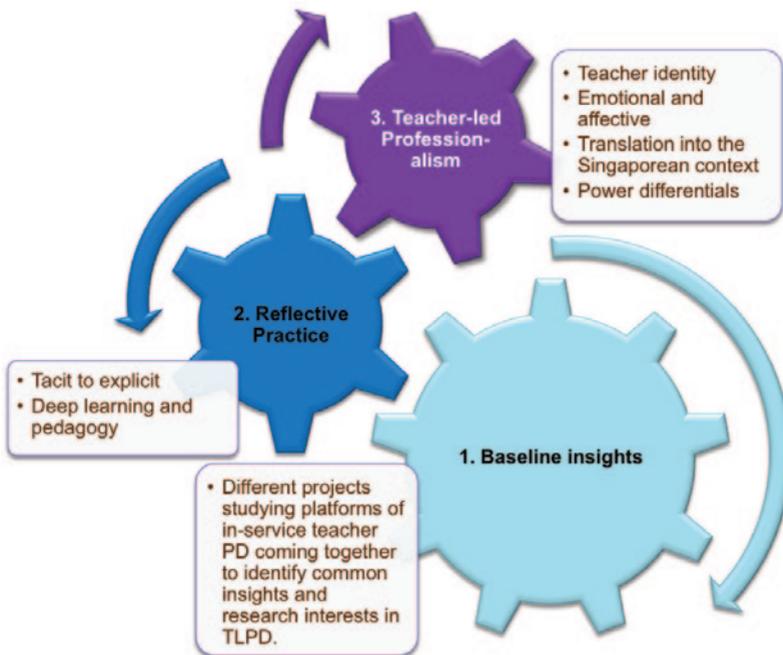


Figure 1. The-layered iteration in the scaling and translation of PLC research into teacher learning and professional development programs.

Phase 2 of the research trajectory targets a three-layered translation and scaling effort. Firstly, efforts for the adaptation and application of teaching innovations are sought. Reflective Dialogue will be used as a capacity that could be built to organically diffuse teaching innovation, and adapted and translated into practice that is scaled to whole-school, or between-schools which may be complemented by lesson study, learning study, or action research. In terms of skills and capacities, we found exceptional cases where teachers possess the capacity to articulate and share tacit knowledge, and there are also exemplary examples of teachers demonstrating deep learning and pedagogy. However, as a general cohort, there is a need to level up teachers in Reflective Dialogue and practice capacity. Secondly, we seek to calibrate PLC efforts to the Singapore school context. Given that further capacity building is required in Reflective Dialogue across Singapore schools, we seek to bolster stronger engagement of this dimension to the local context. Thirdly, we will tap on the mentoring and other networked learning platforms in Singapore to support efforts at capacity building in Reflective Dialogue. Tying the three interests together, we seek through the concrete tasks they perform in adapting teaching innovations into practice, to build teacher capacity in Reflective Dialogue to enhance professional learning.

Sustainable innovation needs to be translated into scalable school improvement (Hargreaves & Shirley, 2012). Translation and scaling efforts may occur on a larger scale with more mechanistic approaches. However, large-scale mechanisms targeted at systemic change may require complex forms of re-orchestration, such as the introduction of policies for large-scale contextual change (i.e., school and broader societal levels) (Dede, 2006). Furthermore, although mechanistic approaches may be highly effective for introducing product innovations, they appear less effective at introducing cultural processes for the development of tacit knowledge on the ground.

Organic approaches to the translation and scaling of teaching innovation via PLCs can complement mechanistic ones, making translation and scaling work more authentic to teachers. Change efforts could target the more flexible components within the education system, such as human networks, with the view of engaging teachers

in meaningful ways. Through collaborative intervention among policy, research and practice entities, teachers can be engaged to hone their capacities in the "decisional" aspects of teacher Professional Capital (Hargreaves & Fullan, 2012, p. 88). That is, professionalization of teachers takes the form of creating robust dispositions to enhance teacher capacity to interpret, adapt, apply and evaluate reform priorities (Harris & Jones, 2011).

At PLCs, teachers engage in conversations to make sense of educational policies and adapt learning into practices they will come to own. However, if conversations centre on brainstorming, administrative matters, and team building, but never go deeper to monitor how these activities reflect teacher professionalism, teachers will perform only the roles of executors, rather than owners of professional knowledge. One of the key capacities identified by Harris and Jones (2011) is an inquiry-based disposition towards collaborative professional learning. As this inquiry-based disposition coincides with engagement in Reflective Dialogue, we propose the building, equipping and strengthening of the Reflective Dialogue capacity among teachers for the purpose of developing an authentic Singapore professional culture. Plans to achieve enculturation should not be taken as an end in itself. Otherwise, professional development efforts would be seen as product suites or a checklist of items to be completed. Through this paper, we seek to draw attention to teachers who are the key to enabling teacher-led professionalism. Teachers may commence by engaging each other in more concrete tasks, such as inquiring into how theoretically-informed teaching innovations may be translated into classroom-applicable practices (i.e., bridging the theory-practice nexus). By anchoring Reflective Dialogue upon more concrete activities, teachers can acquire dispositions/capacities as reflective practitioners while finding gratification in acquiring achievable outcomes in the interim.

The introduction of the inquiry-based approach to Reflective Dialogue will be complemented by the reconfiguration of mentoring processes. As mentoring is critical to the successful facilitation of Reflective Dialogue, this inquiry-based approach to PLCs will be complemented by specification of conducive mentoring processes. Addressing the

dilemma between the reliance on top-down policy-drivers and bottom-up initiatives, we concur with DuFour and Fullan's view of finding the balance between "tightness" and "looseness" (2013). While teacher autonomy has to be respected for individuals to take ownership of their professionalism, teachers will benefit much from mentoring networks. Research evidence identifies Facilitating Mentoring⁶, and to some extent Guiding Mentoring⁷, as most effective for increased PLC Engagement (Lee, Tay, Hong, et al., 2014) Overly tight (i.e., Directing Mentoring⁸) or loose (i.e., Accommodating Mentoring⁹) mentoring arrangements, however, tend to be less effective for PLC-style teacher learning.

With the introduction of PLCs, policymakers offer coherence to the initiative by offering a contextualized framework for implementation in Singapore schools. For this broadly contextualized vision to be sustainably instilled within the professional identity of individual teachers, teachers need to engage in reflective practice in the classrooms and their own professional development. By getting teachers to (re)examine practice systematically, rigorously, and exhaustively, we strengthen their capacity to engage Reflective Dialogue authentically. This capacity-building endeavor then opens up the avenue for the articulation of teacher-led professionalism that is forged within a collaborative professional culture.

Phase 3: Articulations of professional identity and culture

The teachers' professional identity is considered a critical component of teacher professionalism. With the goal of fostering a distinct professional identity of Singapore teachers, frameworks serve as broad visions to facilitate teacher professionalism and professional growth. The Ethos of the Teaching Profession (Academy of Singapore Teachers, 2012b) outlines beliefs, practices and conduct of Singapore teachers, and the Teacher Growth Model (Ministry of Education, 2012) articulates key attributes to be inculcated in teachers through professional development. Although given much thought and efforts, these articulations remain largely the vision of policymakers and opinion leaders. There remains greater scope for a more extensive representation of practitioner voices in the articulation of teacher professionalism, identity and culture.

Within the Singapore context, Khong (2005) calls for a professional development slant that forges strong identifications with the teaching profession by inculcating teacher ownership of their craft. A teacher-owned professional identity is more accessible to adjustment in a fast-changing environment. As compared to the need for periodic large-scale re-orchestration whenever policy visions change, teachers with strong meaning-making capacities are able to pre-empt changing pedagogical demands. Put simply, they would have made their own just-in-time adjustments before the communication of new policy visions, because they would have noticed shifting pedagogical needs on the ground. Much work on teacher identity in the Singapore research landscape affirms this belief, where teachers are given the avenue to articulate what they stand for. Identity, thus, is formed out of agreement or struggle (Taylor, 1991, p. 45), which provides the basis from which teachers form opinions about the value of their work, such as "what is good, or valuable, or what ought to be done, endorsed or opposed" (Taylor, 1989, p. 27). This goes beyond the description of what identity is to the articulation and compilation of ground-emergent identities.

As it seems, gaps remain in the good work done by policymakers, researchers and practitioners in the articulation of a Singapore teacher professional identity. A ground-emergent teacher identity is the basis of self-definition, where the 'curriculum' for teacher professional development is derived from everyday teaching practices. The formation of the teacher's professional identity occurs through one's identification with other teachers in the teaching profession, especially the ones they have been in active collaboration with.

Phase 3 of the research trajectory seeks to support existing teacher professional development frameworks by offering evidence bases grounded from teachers' points-of-view, and in identifying supporting/inhibiting conditions for teacher-led professionalism, identity and culture. As it is, we may still be expecting teachers to align their identities with the Teacher Growth Model (TGM), for instance, rather than creating a TGM based on ground sentiments. We may perhaps have been focusing too much on the cognitive aspects of being a teacher, while neglecting the reality that teaching is also very much

characterized by emotional labour. Tapping on the PLC platform, reflective teacher conversations are encouraged especially about their experiences and frustrations with the initiatives, and how teacher-led professionalism may emerge from this movement. Through research partnerships with teachers, we hope to facilitate the articulation and compilation of a teacher-led professional identity that relates to both cognitive and affective realms of teaching.

Research¹⁰ on professional culture examines putting teacher professionalism into practice. Prevalent scaling and translation efforts examine how schools can be populated with the latest proven-to-work teaching innovations. We may have focused too much on implementation coherence, while overlooking the importance of how these initiatives can be translated into one viable platform for enhancing Singapore teacher-led professionalism. Culture is seen as the synthesis of everyday teaching practices, guided by tacit understandings of teacher professionalism, rather than a static contextual backdrop within which teachers operate. In envisioning how teachers can lead in creating their own Singapore professional culture, we may first need to tackle the intangibles that influence this endeavour, such as the issue of power differentials among teachers. Professional culture entails the practices that enable a member to engage with confidence of one's identity as a professional with the capacity to exercise his/her professional judgment with high standards (Hargreaves & Fullan, 2012). The professional culture to emerge from a teacher-led professionalism will be examined, so as to better understand how tacit knowledge and identifications manifest in teacher's everyday practices. In addendum to this effort, studies on the supporting/inhibiting conditions of this process will provide insights to infrastructural support for providing environments that are conducive for the fruition of a teacher-led professional culture.

Work on building the tacit and intangible will be challenging in Singapore. Looking at the precedence of reform approaches, the efforts did well in providing physical infrastructures to education excellence, but tended to fall short when attending to the amorphous. It is hoped that with the introduction of Phases 2 and 3 to the PLC research trajectory, the work in these phases, when carried out in tandem, will elicit a teacher professional development that is scoped to provide manageable yet challenging options for teachers to work with.

A holistic view of professional learning communities in Singapore schools

In this working paper, we have pointed out the limitations of PLCs if taken as an initiative that operates in isolation. However, we do see the potential for its development into a platform that can lend support to the growth of professional capital and teacher-led professionalism. Broadly, there exist three sources from which teacher professionalism is promoted in Singapore. One source of inspiration emanates from everyday teaching practices – either by drawing inspiration from scholarly perspectives, or in the effort to translate policy into practice. Scholarly theorization and research on PLCs also contribute to works on evidence-based analysis of teachers in practice, the development of teacher professionalism, and the analysis of how teachers interpret and adapt policies. State implementation provides the scope and coherence for large-scale PLC practice, and the translation of PLC theories from a macro perspective. The three sources work in tandem to promote vibrant and dynamic PLC landscapes.

However, gaps understandably arise between the entities due to the distinctive lenses adopted. Our view is to find convergences between policy, research and practice, so as to better integrate the work among these entities. This is not to say that the entities are to engage in unquestioning conciliations. Rather, diverse views ought to be represented in the formulation of policy, in research efforts and in informing practice. In other words, differences are addressed to formulate a collaborative outcome for education reform. The October 2013 PLC Symposium organized by AST represents one of such efforts to bring local and international researchers, practitioners and policymakers together in dialogue. Ongoing translation work exists, but needs to be made more salient. The visibility of these efforts can be better communicated if collaborators and critical friends engage each other productively.

One of the issues addressed by scholars of education is the sustainability of the PLC as a vehicle for the translation of learning in PLCs to practice, and subsequently, to the building of teacher professionalism that is robust. This proposed research trajectory examines how teachers may learn collaboratively to improve student learning, teaching practice, and consequently, teacher professionalism

(Vescio, et al., 2007). As the findings from our baseline study suggests, there remains room for further explorations on how PLCs can be deployed to support education reform.

International studies of PLCs offer insights to the potential for adapting the recent research directions. They point to the importance of broadening (e.g. whole-school, inter-school or nationwide levels) and deepening (e.g. depth, sustainability, spread, shift of ownership) efforts in the translation of learning to practice (Coburn, 2003).

In our deliberations about the PLC, we see the initiative as one of many professional developments that have been implemented in Singapore schools through policy. Indeed, PLCs are the means to an end, not the end in itself. The PLC is but an instrument in an array of teacher professional development tools.

However, with the existing infrastructures instilled within more than 300 collaborating schools under this initiative, it can be a powerful vehicle for the development of teacher-led professionalism. Given the clear PLC processes in place for a professional development focused on student learning, professional learning can be harnessed to hone a teacher-led professionalism that starts with students at the core. For an instrument to pave the way for the achievement of educational aspirations, the initiative needs to go beyond being just an instrument. It needs to bridge gaps in professional capacities and possess the bandwidth to support teachers in leading the shaping of their own teacher professionalism. Hargreaves and Fullan (2012) refer to the accumulation of knowledge and expertise over a series of initiatives as *professional capital*. In order for teachers to lead as professionals, they will need to first possess professional capital, or the expertise, the relational networks and the critical and reflective thinking and negotiating ability. This capacity is needed for to make sense of and interpret policy, which is essential for tighter integration between policy and practice. Leading scholars of teacher professionalism urge for the honing of resilient ("built to last") professional cultures (DuFour & Fullan, 2013), with the capacity to empower teachers with Professional Capital (Hargreaves & Fullan, 2012; Hargreaves & Shirley, 2012).

Much effort has been invested in developing a new model of PLCs that integrates "a relentless focus upon the learning of the adult as well as student" (Harris & Jones, 2011, p. 23). Rather than reinventing the wheel by inundating teacher professional development with yet newer instruments, an alternative strategy may be to step up on baseline initiatives, by riding on the PLC initiative. A long-term view may be taken to develop the sophistication of PLCs for the actualization of a constant: the aspiration for a teacher-led professionalism and professional culture in Singapore. As a community of professionals, teachers form a collaborative enterprise to actively engage the policy processes that will shape teacher professionalism. The resultant professional vision that emerges out of this negotiation will be one that will provide stronger coherence to Singapore teachers as a collective. This coherence strengthens teacher affinity with the professional identity, emotional labour, and collaborative enterprise of teaching.

Conclusion

For the development of teacher-led professionalism, it may be imperative to examine emergent professional identities and teaching culture through reflective dialogues. This is not to say, however, that teachers ought to prioritize their own professional advancement ahead of the students. Rather, the advancement of learning and outcomes, for both teachers and students, are not mutually exclusive of each other. In fact, having teachers probe deeply into how they have grown professionally through their students' learning may be one of the most effective springboards for growth of a teacher professional culture.

Singapore society is in transition. There is a growing desire to hear a medley of voices, rather than the solo voice of the state. This change may be perceived as unsettling if change agents are viewed as suspect for being harbingers of a conflicting agenda with the state. Confluences of interests can emerge when policy, research and practice unite for a common cause for the betterment of education. This convergence will require continuous work and a long-term view for deep, sustainable reform. An emergent interest is Networked Learning Communities, which in spirit shares similar interest as PLCs in terms of collaborative teacher learning and reflective practice. With

regard to teacher learning and professional development, the focus is on improving people, rather than programmes. The continuous work is believed to be deeply rooted in reflective conversations, made possible via communities of passionate teachers.

Notes

1. Reflective Dialogue refers to the iterative process of meta-analysis that teachers, through conversations, seek to collaboratively engage for the purpose of improving teaching and learning. This involvement is underpinned by four key processes: Level 1 – monitoring underlying pedagogical assumptions; Level 2 – weighing alternative pedagogical paradigms against predominant assumptions; Level 3 – concrete strategies to enact pedagogical change as a collective; and Level 4 – owning and implementing change.
2. OER 19/08 *FYP IDM-supported and Web-based Cognitive Tools to Build Virtual Community of Practice (VCoP) for Teachers and Students in Mathematics Problem Solving*; OER 09/09 *SMR Teachers as Researchers: Using Evidence-based Practice in the Singapore Classroom*; and OER 17/08 *SZ Glocalising Quest Atlantis: Globalising and localising an Interactive Digital Medium for Learning and Teaching*.
3. OER 27/09 *GQ Investigating Beginning Teachers' Classroom Management Using Teacher-generated Cases*; OER 09/10 *RS Comprehending Reading Comprehension: An intervention in P4 Reading*; OER 40/12 *RS Reading Discussions and Reading Comprehension: Sustainability in Teacher Development and Opportunities for Student Learning*; and OER 06/08 *SHJ Towards a Community of Practice: Teachers' Meaning Making Using Video for Examining Technology Integration Practices*.
4. See also other technical reports furnished to AST: (Lee et al., 2013; Lee, Ning, & Lee, 2013; Lee, Tay, Tan, Hong, & Lee, 2014).
5. Value-Oriented refers to enduring beliefs prioritizing one worldview over another, resulting in the dominance of specific courses of actions over other alternatives. Value-Oriented comprises the following five dimensions:
 - 5.1. Collectivism: Prioritization of group interests over self-interest.
 - 5.2. Rule Orientation: Inclination to minimize ambiguity through the observation of rules, regulations and protocols to ensure systematic

and methodical courses of action are taken to maximize consistency.

5.3. Risk Taking: Openness towards potentially change-making forces.

5.4. Power Distance: Acceptance and preference for hierarchical power relationships.

5.5. Submission to Authority: The extent one submits to the will of authoritative figures.

6. Facilitating Mentoring refers to the encouragement of mentee autonomy, whereby the mentor intervenes with expert advice only when mentee requires the support.
7. Guiding Mentoring refers to the close supervision of mentees in terms of expertise, while giving mentees some exposure to making autonomous decisions based on the expertise shared by mentors.
8. Directing Mentoring refers to mentor prescription of almost all matters that had arisen in the mentoring process, while the mentee executes these prescriptions.
9. Accommodating Mentoring refers to mentee autonomy in almost all matters that had arisen in the mentoring process, while the mentor monitors the mentoring process with little or no intervention.
10. A forthcoming research project seeks to explore this aspect of professional identity held by Singapore teachers. Refer to research project AFR 05/14 LHL: *A Teacher-led Interpretation of the Teacher Growth Model: Inquiry into Professional Identity of Singapore Teachers* for details.

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