Teacher Development: Dimensions & Perspectives
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The collection of papers in this edition of the *THF Workshop Reports Series* underscores the importance of teacher capacity development and how it influences school improvement.

Workshop contributors emphasised the need for teachers to have time to embrace strategies, such as lesson study or a video-mentorship programme, in order to improve instructional quality. While these professional development (PD) efforts may be resource intensive, they have the potential to shift teacher practices from being teacher-centred to student-centred. Current PD models which emphasise Pedagogical Content Knowledge are limited as they do not factor in the value of teacher reflection and planning.

Successes and challenges in implementing and sustaining teacher PD programmes and PD’s relationship to instructional quality and enhanced learning outcomes were also examined by participants. Perspectives shared in this workshop include a call for a greater appreciation of the complexities involved in situating teacher quality beyond a simplistic measure of student outcomes.

The workshop discussions and these papers will contribute to the Foundation’s research and implementation agenda, and provide direction for school reform efforts in Asia where there is now a strong emphasis on improving teacher capacity and effectiveness. It is to be hoped that teacher development and teacher effectiveness will, in turn, positively impact school reform and learning improvement initiatives.

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Biographies of Presenters

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Adj. Prof. Peter Taylor was a Visiting Professor with NIE’s Centre for Research on Pedagogy and Practice (CRPP) and has worked closely with five Singapore schools that implemented the “Raffles Programme”. Adj. Prof. Taylor has published several books and journals articles on the broad themes of learning, innovation, and change, and has also contributed to the field of understanding how information and communication technologies impact both students and staff. He received his PhD in 1992 from the University of Queensland. His current research interests include teacher learning, staff development, and student and organisational learning and development.
Teachers play an important role in building our nation by bringing out the best in every child. The Ministry of Education (MoE) will further strengthen efforts to grow our teachers by providing opportunities at every stage and in every way to deepen their skills and expertise. Through this, MoE aims to strengthen a culture of learning among our teaching force, a culture of teachers growing teachers, and in the process, nurture a pipeline of teacher leaders who are accomplished in their profession and able to lead fellow educators. (MoE, 2014)

**Introduction**
Teacher education is a continuing process as newly qualified teachers progress through their careers and develop further expertise in teaching. Such learning endeavours of practising teachers are commonly referred to as “professional development”, a term that encompasses “actual learning opportunities which teachers engage in – their time and place, content and pedagogy, sponsorship and purposes”, as well as “the learning that may occur when teachers participate in those activities” (Feiman-Nemser, 2001, p. 1038).

Professional development is an important vehicle for defining and redefining professionalism for the teaching profession (Gopinathan et al., 2008). By learning throughout their careers, teachers not only develop their professional selves and identities, but also serve as excellent role models of lifelong learning to their students. Importantly, teachers’ professional development can directly influence students’ learning. Feiman-Nemser (2001, p. 1013–1014) argued that to produce “more powerful
Professional development is an important vehicle for defining and redefining professionalism for the teaching profession.

This paper adopts Feiman-Nemser’s (2001) conceptualisation of teacher professional development as encompassing the presented opportunities for learning, as well as the actual learning that occurs. I will use the term “professional development” (PD) interchangeably with “continuing education” of teachers to refer to the range of learning opportunities potentially available, spanning from the highly formal and formalised to the informal and personalised ways of teacher learning. My discussion will focus on selected features of teacher continuing education in Singapore set against a brief background to the PD work done in the country.

**Singapore’s Commitment to Teacher Excellence**

High-performing education systems in the world, such as Singapore, that produce sustained performance among its students have rigorous policies and plans to professionalise teaching (Barber & Mourshed, 2007).

A key initiative is through well-supported PD activities, since the PD of teachers can directly lead to improved teaching (Knapp, 2003), and, more importantly, impact student learning and transform schools (Guskey, 2002).

The journey of lifelong learning for the over 33,000 teachers in Singapore is facilitated by many innovations, policies, and initiatives that have been put in place by MOE since the nation’s independence in 1965. As the quote at the beginning of this paper shows, Singapore places a high premium on the initial preparation and PD of teachers. Teachers are recognised for their critical role in building the nation by giving the best possible education to all children and bringing out the best in each one of them. Singapore’s founding father, the late Mr Lee Kuan Yew, articulated this deep and enduring belief when he spoke in the early days of the nation: “just as a country is as good as its citizens, so its citizens are finally, only as good as their teachers” (Lee, 1966, as cited in Heng, 2015).

An important way in which teachers are supported to take on this huge task of nation building has been through the provision of diverse PD opportunities and pathways. In an annual address to teachers,
the former Minister of Education, Mr Heng Swee Keat, pledged to continue nurturing Singapore teachers through better PD, better ways to do things, and better tools and ideas. He also stressed the importance of teachers’ own determination to become better in what they do: “Beyond the initial qualification, what matters most is this commitment to a lifetime of honing one’s craft” (Heng, 2014).

Support for teacher PD is given through four enhanced MOE measures that build on existing PD efforts so as to focus on high-impact learning and developmental activities: (a) providing existing primary school teachers with more opportunities for deeper specialisation in order to develop greater content and pedagogy mastery, (b) strengthening support for mentoring of teachers and the recognition of teacher mentors, (c) growing communities of practitioners in schools and in larger networks, and (d) deepening whole-school support and culture of PD.

**Stakeholders**
The three key stakeholders in strengthening teacher quality are MOE, the National Institute of Education (NIE), and the over 350 schools. MOE is constantly learning and developing new ways of facilitating teachers’ growth. Apart from putting in place policies and guidelines for PD, and providing various kinds of intellectual and material support, MOE set up the Academy of Singapore Teachers (AST) to spearhead and coordinate PD for teachers of all subjects and domains, and to promote a culture of teacher-led professional excellence.

AST works closely with all other teacher academies and institutes, subject chapters and communities of practice in schools, and school networks, and this has contributed greatly to the provision of PD to teachers that is aligned to the Ethos of the Teaching Profession in Singapore (AST, 2012). In this regard, Singapore has also developed a learning framework called the Teachers’ Growth Model (TGM) which sets out five desired teacher outcomes that guide teachers’ PD and growth (MOE, 2012).

Another key stakeholder is NIE, the national teacher education institute. Teachers are recognised for their critical role in building the nation by giving the best possible education to all children and bringing out the best in each one of them.
in the country. Besides providing pre-service teacher education programmes, NIE also offers Master’s and doctoral degree programmes (degrees awarded by the Nanyang Technological University [NTU], NIE’s parent university), as well as in-service programmes for educators. NIE collaborates closely with AST and schools to ensure that it offers timely learning opportunities that are relevant to teachers’ needs, and that it is able to play an active and critical role in supporting MOE’s goal of having a teaching workforce of high professionalism and excellence (Tan, Wong & Goh, 2010).

Last but not least, Singapore schools also play a critical part in the teachers’ continual learning. To strengthen a culture of teacher-led professional excellence in schools, professional learning communities (PLCs) were conceptualised for schools. PLCs in Singapore are a “state-led initiative which aims to instil a cooperative approach to teacher learning”, bringing “teachers together to collaborate in communities of reflective practitioners” (Lee, Hong, Tay & Lee, 2013, p. 53). Spread across all schools in Singapore, PLCs have a coherent underpinning philosophy based on a conceptual framework developed by AST and are supported in practical aspects of organising teachers learning. In addition, the position of School Staff Developer has also been created to assist individual schools identify their professional learning needs and manage school-based PD efforts.

Opportunities and Support
In this paper, I categorise PD opportunities for teachers as (a) formal, certificated, and accredited teacher learning; (b) contextualised and work-based teacher learning; and (c) personal and self-paced teacher learning. This paper focuses on the first two because it is in these that we see the greatest impact of MOE support and the outcome of strong collaborative efforts among all three stakeholders.

Formal, Certificated, and Accredited Teacher Learning
In this first category, teachers’ continuing education is recognised through documentary evidence of achievement or participation and consists of study programmes, short courses and workshops, and professional events. In this regard, NIE plays a key role in offering relevant certificated opportunities to education officers in Singapore. An institute within NTU, NIE has been offering higher degree programmes for more than two decades.
Although these programmes serve the general purpose of further studies in any university, they are also matched to the three career tracks of teachers or education officers, namely, leadership, specialist, and teaching. Since 2009, hundreds of MOE education officers graduate with an NTU Master’s degree from NIE each year. This has been made possible largely through a special MOE scheme that was jointly developed with NIE in 2005. Called the Professional Development Continuum Model (PDCM), the scheme provides MOE subsidies for fees to education officers attending part-time studies at NIE through a customised delivery mode.

NIE also conducts classes at designated external venues provided by MOE in order to reduce teachers’ travelling time to the NIE campus, which is on the far western side of Singapore. Through a 3-year completion route, hundreds of teachers have managed to juggle work, professional demands, and personal lives to obtain their degrees. MOE’s financial support also extends to some selected programmes in other local universities by allowing reimbursement of compulsory course fees when teachers complete their studies.

The PDCM scheme also supports teachers in in-service courses, workshops, and certificate/diploma programmes delivered by NIE. The institute also has an academic route called the Professional Development–Higher Degree (PD-HD) Pathway which enables teachers to complete up to four standalone Masters-level courses as an in-service participant before applying for admission to a Master’s degree programme.

In addition to requesting NIE courses/workshops for teachers, MOE also supports schools by giving them the autonomy to finance other kinds of PD activities for their teachers. NIE also works with MOE to offer milestone executive programmes in school leadership for MOE-selected participants in the leadership and teaching tracks. In addition, each year MOE also provides scholarships and awards to teachers to pursue their graduate studies in Singapore and overseas.

Another opportunity for formal teacher learning is conference attendance. Teachers are usually nominated by their schools to attend important conferences on teaching and education research, as well as discipline-specific ones. There is also an increasing number of teachers presenting papers at local and overseas conferences. This trend can largely be explained by MOE’s efforts at developing teachers’ classroom inquiry capacities (MOE, 2008),
as well as more teachers having received a Master’s or a doctoral education.

**Contextualised and Work-based Teacher Learning**

Singapore has also seen much success in teachers’ PD through work-based learning that is situated within the unique sociocultural contexts of their work. In a PLC, teachers meet together in groups of about four to eight members during a timetabled period to work on enhancing teaching and student outcomes. They engage with colleagues in a department- or school-based collective activity, such as planning lessons and developing assessment literacies.

Individual PLCs may also collaborate with other PLCs around a common interest, such as improving student outcomes for low-performing students or improving assessment. Referred to as Networked Learning Communities, such professional activities provide a platform for exchange of ideas to bring about improvements in daily teaching or solve specific educational problems.

PLC activities are not restricted to teachers in a school or their networks. External experts are also invited to introduce new ideas, such as by offering teachers tools for reflection or analysis of classroom data, or to act as a catalyst to spur teachers to examine their own practice or sharpen their professional dialogues. These experts may be university faculty members from NIE or overseas institutions, or Master Teachers from AST and other academies.

On the whole, situated workplace PD, such as PLCs, can be powerful opportunities for teachers to learn in and to learn from their practice. Research into Singapore PLCs have shown that teachers who were active in professional dialogues and reflection reported, perhaps unsurprisingly, higher levels of engagement than those who were not active, and these findings were also borne out through ethnographic observations of PLCs in action (Lee et al., 2013, p. 56). Through participation in professional learning, teachers also develop positive professional selves, in particular when they can influence the directions of their own professional learning and the ways its success can be evaluated (Lee & Lee, 2013).

The latest innovation in Singapore teachers’ continuing education is in
the establishment of the Centre for Teaching and Learning Excellence hosted at the Yusof Ishak Secondary School (Yang, 2015). The first of its kind, the Centre has Master Teachers of curriculum subjects from AST, as well as NIE experts, teaching alongside teachers from the school. Besides further enhancing teaching in the school, these lessons also serve as demonstration classes which can be observed by both practising and pre-service teachers through special facilities, such as one-way mirrors. The establishment of such a centre is an example of the nation’s continual collaborative quest in offering innovative ways for teacher learning.

**Challenges**

The literature on teacher learning has highlighted a number of challenges and limitations in PD work in various parts of the world. These include the need for coherent approaches in teachers’ continuing education that can pull together related ideas from bodies of knowledge and research, as well as integrating the perspectives of all stakeholders, especially the teachers themselves, in such plans. A lack of coherence in PD efforts, some have argued, will result in the teachers’ needs not being met. As teacher educators innovate new ways of providing continuing education to teachers, those teachers will also need to develop new personal learning skills. This may also be a personal challenge for some teachers who are used to traditional forms of PD.

The international literature also points to issues of translation and transferability of what teachers are presented with during PD activities. Commentators have questioned how much deep learning takes place and the extent to which teachers’ learning becomes embedded in their day-to-day practice. The availability of sustained forms of learning is also a major concern noted in the PD literature. The most prevalent format across many countries and systems is the offering of standalone courses or workshops. These activities, however, have often been criticised for their “one-off” treatments of professional or curricular needs, quick fixes that do not allow for teachers’ prolonged engagement with the required knowledge and skills. On the other hand, when teachers are involved in PD that is sustained and spread over a longer period of time, chances of positive changes in teaching practices and student learning are higher.
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**A Singapore Study**
In Singapore, teachers are entitled to 100 hours of PD each year and they can make use of a range of opportunities to improve their own learning and professionalism. There was, however, little information on how the hours were being utilised until recently. The study by Chang, Teng, Tan, Tham-Poh and Chan (2015) has provided some much needed empirically based insights into teacher PD work in Singapore. Their study examined teachers’ motivation for PD and their preferred types of learning opportunities. Data was collected from about 1,000 teachers using a questionnaire survey while about 20 teachers were included in group interviews and focused-group discussions.

The study revealed that teachers:
- spent on average 77 hours on PD;
- did not utilise their 100-hour entitlement in the same ways;
- had different beliefs about the purpose and the outcomes of their PD experiences;
- agreed that the ultimate goal of any PD was to help students;
- mainly participated in PD due to normative obligations (e.g., nominations by school leaders);
- recognised their own PD needs;
- preferred mainly workshops and courses, as these suited their busy schedules;
- found PLCs to be useful, as they could learn from one another;
- tended to attend formal professional activities individually;
- were generally willing to attend PD activities; and
- were affected by six factors in PD participation: time, finance, personal needs, nature of PD, students’ needs, and support from school environment. (Chang et al., 2014, pp. 1373–1374)

In summing up their study, Chang and colleagues (2015) observed the intertwining of success factors and challenges in the teacher PD work done in Singapore. The multipronged support structure, the top–down but guided approach, and teachers’ sense of professionalism all contributed to the high level of teacher participation in PD. The researchers suggested that these enablers could also simultaneously constrain teachers because of conflicting priorities among the needs of the school, the department, and the teachers themselves.

**Looking Ahead**
Continuing education for teachers in the last 50 years of Singapore’s
Successes and Challenges in the Continuing Education of Teachers

history has seen many successes that contributed to a highly skilled teaching force. An outcome of this can be seen in Singapore students’ achievements in international benchmarked assessment rankings (Barber & Mourshed, 2007). Clearly, MOE policies and strategic initiatives have successfully incentivised many teachers to improve themselves professionally and to keep up with new ideas and demands. Innovations, such as PLCs within schools and school networks, have also been strengthened in recent years through bottom–up initiatives, reflecting teachers’ professionalism through ownership of their learning, as well as the fraternity’s confidence in leading their own learning.

Since its independence in 1965, Singapore has laid a strong foundation for teacher excellence and professionalism through its policies, programmes, and continuous innovation. Though PD work in the country will continue to progress through the various structures and support already in place, there is nevertheless room for further strengthening of PD work in the following ways.

Combining features: Many existing features of professional learning can be combined in different ways to create powerful learning opportunities for teachers. These features include individual, collaborative, face-to-face, remote, situated, incentivised, intensive, self-directed, facilitated, incentivised, and sustained (Australian Institute for Teaching and School Leadership, 2014, p. 14). For example, more blended learning that combines some of these features should become an important characteristic of PD activities.

Keeping pace: The new generation of teachers is generally comfortable with learning through the new media and online platforms. PD activities will therefore need to recognise the new and preferred ways of learning of this generation, especially when the country is being transformed into a smart nation through huge investments in ICT infrastructures. Anywhere and anytime learning will be a reasonable expectation in time to come. The challenge is to ensure that teachers who prefer traditional ways of learning are not left behind in their development.

Strengthening sustainability: Workshops and short courses, which are Singapore teachers’ preferred forms of PD activities, do not provide sustained learning opportunities unless they can be integrated as a learning programme. For example,
several workshops or short courses on an area or topic can be held over a school semester or year. Interspersed within this period are teacher sharings, online support, expert consultations, reflections, and other forms of contextualised work-based learning. Therefore, instead of spreading their attention over a number of topics, teachers may focus on just one in a deep and sustained manner.

*Consolidating coherence*: The effort to integrate perspectives from policymakers, teacher educators, and teachers is an ongoing process which needs to be attended to continually. In particular, teachers’ continuing education will need to account for different professional needs arising from different stages of career progression. Differentiation between beginning and experienced teachers can address their respective needs and will, in turn, avoid potential negative perceptions of the usefulness of PD.

*Learning to learn*: As PD activities may provide new tools for professional learning, teachers will need to learn new skills in order to engage meaningfully in their learning. Besides learning to use new tools for technology-enabled courses, teachers also need specific skills to participate in other areas, such as analysing classroom data. As reflection is a popular PD learning activity, teachers need to learn thinking and language skills to support their written reflections. They also need to develop metacognitive skills and strategies for self-directed and self-regulated learning.

*Valuing prior learning*: The way we think about formal programmes where teacher participation is academically certified needs to be re-examined. We may need to recognise and accredit teacher learning in non-institution-based contexts where rich learning can occur, such as in teacher-led PD like PLCs.

*Developing teachers’ professional selves*: PD work should go beyond the bread-and-butter matters of knowledge and pedagogical skills to also address teacher identities which can influence professional efficiency. The formation of teacher identity does not stop at the initial teacher preparation phase. PD activities should therefore provide opportunities for teachers to understand their cognitive and affective selves, and identify areas in need of attention. More specifically, the development of a global mindset among teachers should also be a part of their PD, which should offer teachers space to learn what it means to be an educator in a globalised world and in a global city like Singapore.
Conclusion
Developing a quality teaching force and the continual professionalisation of the work of teachers through PD have been a result of thoughtful planning and careful implementation by the Singapore government. There is a deep collective belief among key stakeholders in Singapore that teachers’ own learning will directly raise the quality of education for every child. It is this belief that drives the country’s commitment to excellence in teacher continuing education and that has resulted in many of the successes experienced today.

References


The Potential of Lesson Study

Japanese lesson study (LS), jugyou kenkyuu, has become increasingly popular as a platform for teacher learning and the development of professional learning communities (PLCs) in schools worldwide. It has spread beyond the shores of Japan to many countries in Asia (e.g., Hong Kong, Indonesia, Singapore, Vietnam), the United States, Europe (e.g., Norway, Sweden, the UK), and elsewhere (Lee, 2011). The robust communities of LS practitioners and researchers emerging around the world indicate that many educators outside Japan recognise LS as a suitable approach for developing teachers’ capacities in curriculum, pedagogy, and assessment, and for improving student learning.

Education systems that invest heavily in developing the quality of teachers to bring about necessary educational reforms are keen to have a teacher development system that is sustainable and impacts classroom practice. Teachers, after all, are considered vital to the success of education systems in countries, such as Finland and Singapore (McKinsey & Company, 2010). There is disenchantment about one-shot professional development workshops for teachers that do not allow for the transfer of teacher learning to classroom practices. Teachers, being pragmatic practitioners, are reluctant to adopt new practices or procedures unless they feel sure they can make them work (Guskey, 2002).

Teacher learning is “most likely to occur when teachers can concentrate on instruction and student outcomes in the specific contexts in which they teach” (King & Newman, 2000, p. 576).
LS holds promise as the heart of LS is the enactment and observation of research lessons (Lee & Lo, 2013).

**What Is Lesson Study?**

LS is a collaborative inquiry process among teacher teams to systematically examine their practice. The goal is to improve the effectiveness of student learning experiences for better outcomes. Teachers collaboratively explore what they want their students to be and to learn in the long term. This inquiry leads to an intensive discussion and study of the curriculum, and the design of learning experiences that will bring about better student learning. LS teams then observe the research lessons that they have planned collaboratively and, after these observations, discuss the impact of these lessons on the learning of their students. The LS cycle allows for the unfolding of the teaching–learning process in the context of actual lessons.

Discussions about student learning are based on evidence derived from the enactment of lessons – research lessons that are supported by “knowledgeable others” who could be senior teachers, principals, university teacher educators, and researchers.

Figure 1 shows the LS cycle and the kinds of activities that can take place at each step of the process.

**The Global Spread of Lesson Study**

LS has spread to many countries since the initial English-language publications “A lesson is like a swiftly flowing river” (Lewis & Tsuchida, 1998) and *The Teaching Gap* (Stigler & Hiebert, 1999) appeared. One important indicator of the global spread of LS is the number of country attendees at the World Association of Lesson Studies (WALS) annual conferences.

At its first conference in 2007 in Hong Kong, WALS attracted participants from 15 countries. Educators from Hong Kong and Singapore formed the majority of participants, followed by Japan, Sweden, China, Canada, South Korea, Vietnam, the UK, the US, Turkey, Australia, Brunei, Taiwan, and Hungary. Between 2008 and 2014, 28 more countries attended...
The Growth of Lesson Study Globally and in Singapore

WALS conferences. New countries included Israel, the Philippines, Spain, and Switzerland in 2008; France, Indonesia, and Thailand in 2009; Malaysia and Slovak Republic in 2011; Bahrain, Ghana, Finland, the Netherlands, Norway, Russia, South Africa, and Uzbekistan in 2012; Austria, Denmark, Germany, Ireland, and Kazakhstan in 2013; and Bangladesh, Ethiopia, Nigeria, Senegal, Zambia, and Nicaragua in 2014. The extent of the spread of LS across so many countries is impressive. In countries where there is support from the education ministry, the spread of LS within the country is more extensive, as witnessed in Indonesia and Singapore.

The Spread of Lesson Study in Singapore Schools

Singapore’s foray into the world of Japanese LS began in 2004 when a team of Japanese academics from the University of Tokyo, Japan and Catherine Lewis from Mills College, USA shared at an international conference in Singapore how LS has led to the development of a collaborative culture among teachers and students in Japanese schools. The idea of LS, however, did not take root until a team of researchers and teacher educators from the National Institute of Education (NIE) worked in partnership with a primary school over a period of 2 years from 2006 to 2007, with funding from NIE’s Centre for Research in Pedagogy.

Figure 1. Lesson Study Cycle (adapted from Lewis, Perry & Murata, 2006).

1. Study Curriculum and Formulate Goals
   Consider long-term goals for student learning and development. Study curriculum and standards, and identify topic of interest.

2. Plan
   Select or revise research lesson. Write instruction plan that includes:
   • long-term goals
   • anticipated student thinking
   • data-collection plan
   • model of learning trajectory
   • rationale for chosen approach

3. Conduct Research
   One team member conducts research lesson, while others observe and collect data.

4. Reflect
   Formal lesson colloquium in which observers:
   • share data from the lesson, and
   • use the data to illuminate student learning, disciplinary content, lesson and unit design, and broader issues in teaching and learning. Documentation of the cycle to consolidate and carry forward learnings and new questions into next cycle of LS.
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and Practice. This pilot project allowed for the experimentation with Japanese LS cycles in the “just do it” implementation phase.

The spread of LS in Singapore schools took a phenomenal leap in 2010 after the Ministry of Education (MOE) announced the introduction of PLCs as a move to raise the quality of teacher professional development. LS was recommended as one of the tools to be used in the development of schools as PLCs. An NIE survey in 2014 revealed that 190 schools out of the total of 363 schools (52.3 per cent) in Singapore had implemented LS; another 12 schools reported that they would implement it in the future. Figure 2 shows the growth of LS in Singapore schools over a period of 10 years since 2004.

The rapid growth of LS in Singapore reflects a strong belief in the education community that LS has the potential to bring about impact on teacher learning and develop teachers’ capacities in curriculum, pedagogy, and assessment, with concomitant impact on student learning. This rapid diffusion, however, raises questions related to the quality and sustainability of LS in the schools.

Firstly, are schools practising LS in the right spirit and substance? What conditions have to be in place to ensure that LS is not just a passing fad but is practised with the right spirit? What aspects of LS may get compromised when schools are faced with the lack of funding and resources, and manpower constraints? Secondly, what are the conditions needed to ensure the sustainability of LS in schools that have been implementing

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**Figure 2. Growth of LS in Singapore schools over 10 years.**

<table>
<thead>
<tr>
<th>Year</th>
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<tr>
<td>2004</td>
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<td>170</td>
</tr>
<tr>
<td>2013/2014</td>
<td>190</td>
</tr>
</tbody>
</table>
This rapid diffusion, however, raises questions related to the quality and sustainability of LS in the schools. LS for several years, especially when there is a change of school leadership? The 2014 survey of how Singapore schools are practising LS and case studies of schools implementing LS for several years provide some insights into these questions, and will be discussed in the following section.

**Developing Quality Lesson Study in Schools**

Japanese teachers value LS so highly that they cannot imagine doing without it (Fernandez & Yoshida, 2004). In the aftermath of the 2011 Japanese earthquake and tsunami, Professor Kiyomi Akita, an LS expert from University of Tokyo, received the following email from the principal of a school in Fukushima, an area devastated by the earthquake and contaminated by radioactivity:

> Our school will start the school year on April 11th – five days later than usual. We’ve suffered from the cut off of the life line and have anxieties about radioactivity. But we are recovering our daily life gradually. Please come for Lesson Study on May 13th. It is our pleasure to do Lesson Study with you even in such a situation. *Lesson Study is spiritual nourishment of our school* and it is a chance to empower our teachers’ minds and hearts. Our mission is to take care of our children through lessons in the classroom. (Akita, 2012, emphasis added)

A Japanese teacher had the following to say about research lessons: “Why do we do research lessons? I don’t think there are any laws [requiring it]. But if we didn’t do research lessons, we wouldn’t be teachers” (Lewis & Tsuchida, 1998, p. 14). Research lessons provide a window into what education and teaching can be when teachers observe how other teachers create a class and a community of students, and not just teach a lesson. Japanese teachers do not just see LS as a source of feedback or of learning about new techniques; they often describe how LS has influenced their philosophy of teaching to the point of even bringing about a radical change in their ideas about education. Japanese teachers are not given “release time” to participate in research lesson activities, so the time “that teachers receive for lesson study during work hours does not reduce their teaching load, and they must meet in the evenings or on weekends when they participate in non-school-based study groups” (Watanabe, 2002, p. 38).
While Japanese teachers see *jugyou kenkyuu* as part and parcel of their professional lives, our Singapore teachers have yet to see LS as part of their daily practice. Some may perceive LS practice as an add-on or something new, even with good intentions of improving student outcomes and enhancing their own subject matter knowledge and pedagogical content knowledge. Others are involved in LS teams because it is made mandatory by the school leaders and are just going through the mechanics of LS. The transfer of their learning through their engagement in LS cycles to their daily practice is not yet evident. It is important to realise that LS is embedded in the culture of Japanese schools and integral to teachers’ professional identity for over 100 years; LS in Singapore is still very much in its infancy, having started only in 2004.

Singapore teachers generally perceive that their pedagogical content knowledge has improved and their understanding of student learning has increased as a result of the opportunity to learn from colleagues in discussing student learning and pedagogical strategies, and by visiting each other’s classrooms. Teachers, especially the experienced teachers, however, dislike planning meetings although they like observing lessons and participating in post-research lesson discussions. Time is an often cited as a challenge by teachers who are often stretched in multiple directions given that schools are such busy places and teachers are subjected to myriad demands. Teachers sometimes resent LS as “extra work” as it places heavy demands on their time. The constraint of time sometimes leads them to compromise on LS processes, such as cutting back on planning time and not scheduling research lessons in ways that would allow for observation by all members of the LS teams.

Our 2014 survey revealed that Singapore teachers would like to have a reduced workload so that they can have more time for LS. This is in spite of the fact that Singapore teachers are fortunate that MOE has instituted 1 hour of timetabled time within the school curriculum for them to come together for discussions – a structure not found in many other education systems.

We have also found that Singapore schools do not relate their LS work to their vision, mission, and the long-term goals for their students (Lee & Lim-Ratnam, 2014). School-based LS (*konaikenshu*) in Japan “brings together the entire teaching staff of a school to work in a sustained and focused manner on a school-wide goal that all teachers have agreed
is of critical importance to them” (Fernandez & Yoshida, 2004, p. 8). These konaikenshu goals tend to target not only the development of academic skills in students, but also other areas, such as developing in children broader dispositions towards learning, school, peers, and themselves (Fernandez & Yoshida, 2004; Lewis, 2002). Singapore schools tend to focus mainly on short-term academic goals in their LS. Work is needed to move teachers beyond a focus on short-term goals and to see the connection that their LS effort can bring to the long-term development of their students. The problem may lie in having LS teams within subjects and grade levels with teachers working in silos and focusing on their own peculiar problems and learning goals. Such a fragmented nature of LS works against the Japanese konaikenshu approach.

**Sustaining Lesson Study**

How sustainable will LS be as a practice when the main catalyst for LS, such as the Principal, Vice-Principal, Head of Department, or LS Coordinator, leaves the school? In our case study of a school which has been implementing LS for 6 years, we asked this question to the school leaders, LS Coordinator, and teachers. The school has since seen its Principal, Vice-Principal, and School Staff Developer move to MOE headquarters and other schools.

What is most revealing in the interview data is that LS has become so much a part of the school culture that it will remain in the school and “we will go on”, according to the LS Coordinator. This culture is sustained by a strong belief that LS has brought about benefits to the school, and teachers are familiar and comfortable with the LS processes. Hence, there is no reason for removing LS even with the change of school leadership.

According to the Principal, LS is “more deeply rooted than just residing in the position of the Principal or the beliefs of the Principal”. The school leaders have been “nurturing the next generation of Senior Teachers and Heads of Department [HODs] to continue the work and will also bring the new school leaders who will join us to support/lead in building the lesson study culture in the school”. There was also a conscious attempt from the school leaders “to make sure that there are people who are leading lesson study, who are keen on lesson study, who understand lesson study, who are skilled in lesson study, to be present at all levels of the staff. That means from the leadership level all the way to the Senior Teacher, HOD level, to the teacher level”.

The school works in partnership with faculty from NIE’s Curriculum, Teaching and Learning Academic
Group, Master Teachers from the Academy of Singapore Teachers, and curriculum specialists from MOE’s English Language Branch to deepen the understanding and the experience of their teachers in LS. In addition, the school has a partner school, Mutsumi Junior High School in Japan, and they have regular exchanges and visits. These local and regional collaborative networks bring additional expertise to the school community. It is through this school that another school in London has embarked on LS. The London school has visited the school in Singapore, and learnt about LS and how it had shaped the school over the years.

Our earlier 2011 survey (Lim, Lee, Saito & Hairon, 2011) revealed that the following factors seemed to be important in sustaining LS in schools:
1. the school leader (Principal or Vice-Principal) is critical in providing supporting conditions for LS to take root in a school and to flourish;
2. school leaders must feel that LS is able to impact student learning and outcomes;
3. school leaders must feel that LS is able to impact teacher knowledge, particularly subject matter knowledge and pedagogical content knowledge;
4. protected time for LS meetings; and
5. the presence of an advocate among the teachers.

The case school we studied in 2014 had displayed all these conditions and more.

Future Directions
Singapore is still in the nascent stages of implementing LS on a school-wide basis and has much to learn from our Japanese colleagues. Our schools have, however, “started the ball rolling” by putting in place structures to encourage LS teams in their efforts and support for teachers to attend training and conferences. More work still needs to be done to ensure that LS will not be a passing fad in Singapore but work will continue to ensure LS takes root, deepens, and will be routinised in the culture of schools and be an engaging practice (Spillane, 2009). The dissemination, development, and sustainability of quality LS in Singapore and elsewhere requires:
1. ongoing support from ministries of education and partnerships with teacher education institutions;
2. distributed leadership at all levels from classroom teachers to school principals, with a focus on teaching and learning;
3. development of networks of schools to energise and support the ongoing development of lesson studies;
4. development of toolkits, including technology tools, to support the LS work of teachers; and
5. development of a pool of
“knowledgeable others” or external resource persons to lift the quality of LS discussions.

More research is also needed to gather evidence of impact to convince policymakers of the value of LS in schools. Lewis, Perry, and Murata (2006) have made a call for three types of research to study the potential of LS as a tool for instructional improvement: (i) the creation of a descriptive knowledge base about LS as it is practised in Japan and elsewhere so that sound ideas about its central features can be established; (ii) the explication of mechanisms underlying LS that will enable it to work so that there will be less focus on the surface features of the practice or tool; and (iii) cycles of design-based research that will test key design features and create actionable artefacts to support learning and transfer at new sites.

Since that call, we have seen an increase of reported case studies of how LS has been contextualised and adapted in different countries, such as Singapore (Lee & Lim-Ratnam, 2014; Tan, 2014), Vietnam (Saito, Khong & Tsukui, 2011), Indonesia (Tatang, 2012), and the UK (Dudley, 2011).

References


Introduction
To educate is to intervene. Therefore, building teaching necessarily involves interventions. Yet, the nature and timing of such interventions continue to be a matter of debate. Traditional approaches rely on telling teachers what they ought to do, or providing resources that they ought to use in particular and new ways. Such methods have had very little positive impact on the practice of teaching to date. The literature on teaching improvement has been greatly enriched by the works of John Hattie and Helen Timperley.

Hattie’s (2009) work, involving a synthesis of the meta-analyses of the impact on student achievement of various interventions, has given us a clear indication of priorities for future capacity-building. It has helped teachers understand that their participation in professional development (PD) ought to impact their students’ achievement in positive and demonstrative ways, and, moreover, that the selection of foci for PD can and should be informed by quite precise indicators of likely payoff for student learning.

Timperley’s work complements that of Hattie by synthesising research on the impact of leadership on student achievement, and by foregrounding inquiry as an approach to PD in the interest of “transforming learning in schools” (Timperley, Kaser & Halbert, 2014). In an earlier paper, Timperley (2011) provided a rationale for the inquiry-based approach to PD. She was advocating forms of PD focused on developing adaptive expertise in teachers, and by implication, schools as adaptive organisations. Adaptive expertise, a notion discussed in some depth by John Bransford (2007), involves deep...
knowledge about what to teach and how to teach it, with a particular awareness of the assumptions that underpin practice. Adaptive experts know that expert practice is based on routines, and they “are constantly vigilant about the impact of [their] teaching and learning routines on students’ engagement, learning, and well-being” (Timperley, 2011, p. 6). Adaptive experts expect to improve their practices so as to more effectively promote the learning of their students. They see engagement in inquiry and learning as core to their professionalism.

She contrasts adaptive expertise with *routine expertise*. The latter involves expertise in the application of a core set of skills and related routines, with great fluency and efficiency. Routine expertise generates responses to problems based on intuitive and holistic “reasoning”. This understanding explains, in part, why teachers who adopt a routine expert perspective “may be surprised, or at worst feel insulted, by requirements to engage in ongoing professional development...[when] in their minds, their very experience means they are already expert” (p. 7).

As with most PD models, Timperley et al.’s (2014) spiral of inquiry assumes an adaptive expertise mindset, and tends to assume information as the currency for capacity building. Here, the teachers expect ongoing learning in order to respond to situations where existing routines or skills are not adequate in supporting achievement of the desired learning outcomes. Where routine experts might focus on the students, the curriculum, or some other context-related factors, adaptive experts are intended to embrace their own practice as a focus for improvement through their “capability to identify when [their] routines are not working as well as they might and to seek [to develop] different approaches when needed” (Timperley, 2011, p. 6). Teachers are invited to turn to the research literature as a key resource for designing those new routines.

Classroom research, as systematically analysed by Hattie (2009), has ensured that the impact of the quality of teaching on students is now well-documented. In broad terms, this work suggests that approximately 30 per cent
of the variation in student achievement can be attributed to the quality of teaching. Given that over 50 per cent of the variation lies with the home and family, the quality of teaching remains the single largest controllable variable impacting student achievement. (It is important to note that the largest systematic collection and analysis of data relies on student achievement in international tests, such as PISA, PErLS and TIMMS, and those analyses underpin these statistics.)

Core Propositions Concerning Teacher Expertise and Learning
I offer four propositions regarding teacher expertise and learning. First and central proposition is that we teachers develop our expertise largely through personal experience, interwoven with judiciously selected concepts and ideas that are traditionally accessed through PD activities.

A second proposition is that this expertise is principally an expression of implicit knowledge and related capacities. Thus, the explicit knowledge about practice that teachers can and do share tends to be expressed as anecdotes and opinions rather than detailed “theories” based on propositional and procedural knowledge.

The third related proposition is that practice-focused expertise is based largely on the exercise of routine behaviour. As a result, an individual’s competence emerges without conscious deliberation. Indeed, during performance, it is important to avoid thinking as it tends to disrupt the flow of expertise.

The final proposition, which I will focus on in this paper, is that expertise in teaching is enhanced through the deliberate development of more learning-effective routines and/or through decreasing the use of existing but less learning-effective routines. The latter involves unlearning, which is the systematic (and demanding) attempt to avoid the use of existing, but sub-optimal, routines. This begs the question of how it is possible to achieve this outcome effectively and efficiently.

Drawing from the cognitive concepts called Systems 1 and 2 popularised by Daniel Kahneman’s (2011) *Thinking Fast and Slow*, the following...

Adaptive expertise... involves deep knowledge about what to teach and how to teach it, with a particular awareness of the assumptions that underpin practice.
are the strategies to achieve the fourth proposition:
• Engage deeply with alternative explanations as a means to challenge existing beliefs.
• Continually remind ourselves of what we don’t know, and seek out ideas that disturb our deep-seated beliefs.
• Adopt an “outsider” for the purposes of broadening the framing around the issue.
• Slowing down our response rate, taking time to respond to a challenge rather than reacting to it.

The suggested strategies above are collectively based on the deliberate activation of our brain’s System 2. Kahneman (2011, p. 13) explained that in decision-making, our cognitive functioning involves two interacting systems, namely, Systems 1 and 2.

System 1 involves fast thinking that “includes both variants of intuitive thought – the expert and the heuristic – as well as the entirely automatic mental activities of perception and memory” (p. 10). It generates our intuition and emotions, and works subconsciously, meaning that most of what we do and think and feel is not under conscious control. The other system, System 2, is used when intuition fails and we turn to our relatively slow, “deliberate and effortful form of thinking” (p. 10), which enables us to direct our attention and to engage in rational thought.

These two systems interact and both are active when we are awake. It needs to be acknowledged, perhaps disconcertingly, that System 1 has the greatest capacity for information processing. In particular, it allows us to draw on the breadth of our experience so that we can make very fast decisions with minimal new information, time, or thought. System 2, with its rational capacities, is perhaps better thought of the tip-of-the-iceberg of our information-processing capacity.

To achieve the above-mentioned strategies, we need to use System 2’s rationality in ways that are relatively unfamiliar to most of us: our reasoning as a source of deliberate scepticism concerning our own thinking and also as a means of setting and monitoring progress towards quite specific goals for...
changing our routine practices. Again, these are very significant challenges given that over time, experienced teachers can be expected to build confidence in their existing behavioural patterns, beliefs, and preferences, and assume high levels of rationality in terms of their capacity to weigh up the potential value of alternative perspectives.

Achieving change in routines requires the intervention of the slow and rational System 2 in the automaticity of System 1. Our System 2 allows us to sets goals and gives our brain an “ability to supervise itself, to exercise authority over itself” (Lehrer, 2009, p. 115). This is the executive control that is related to self-regulation and meta-cognitive capacity that are discussed frequently in relation to student learning. It is essential to note, however, that substantial updating routines based on System 1 requires that we give attention to a failure of expectation. In turn, this requires that our System 2 has generated a simple sense of the preferred alternative to our current routine.

If we understand how our experiences have given rise to the System 1 neural patterns that generate our behaviours and preferences, we open up avenues for capacity building and participatory learning. Yet, this is no small ask given that System 1 operates below the level of our awareness, thereby limiting any cognitive infrastructure that connects System 1 and System 2. This implies that we are unlikely to be aware at any sophisticated level of our routines, beliefs, or preferences, or even to have a language for thinking about or reflecting on them.

My work with video-informed reflection suggests that reviewing video evidence of our own practices can provide powerful insights into the nature and effectiveness of the behavioural routines that our intuitive thought and other automatic mental activities, such as perception and memory (System 1), are generating, and the impact of those on our classroom culture. Where an individual teacher seeks to understand and improve, the video evidence allows them to select specific foci in their actual routine behaviour for improvement. This implies significant activation of System 2 in both goals setting and monitoring of performance.
Equally as important, video evidence allows extremely useful feedback on actual performance of attempted new routines. One participating teacher spoke for the many I have worked with in saying that the video record makes it possible to stay in the moment of teaching: “it really allows you to switch that part of your brain [i.e., memory] off and know that it is taken care of for later [reflection]”. By implication, it is cognitively stressful to pay attention both to the new practice being implemented and to what is happening in the classroom. Video takes care of the latter, freeing System 2 to focus on implementation.

Openness to explore our own practice allows us to develop insights into our own experience-generated routines, and video evidence can be a key contributor to this outcome. The key point here is that teacher reflection on and conversation about those routines must draw on strategies that minimise, rather than endorse, System 1 bias. As a result, it becomes possible to move on from the reassurance that “all is ok” with our practices or that current problems are the fault of “the system”.

Focused reflection and conversation about authentic instances of pedagogical work can help give us a language for thinking about our practices, and for setting goals for improvement. Finally, video evidence can free our System 2 to focus on intended improvements, allowing us to monitor the quality of our implementation at some later time.

In Conclusion
Figure 1 provides an overview of this discussion’s view of teacher capacity-building. It suggests that there are two principal contributors to our knowing: reasoning and convention. Similarly, there are two principal ways of “doing”: deliberate ways and routine ways. The combination of reasoning and deliberation underlie adaptive expertise, while the combination of conventional knowing and routine practice underpin routine expertise. Most importantly, we connect our doing to our knowing through reflection, while we connect our knowing to our doing through planning – reflection...
and planning are the hallmarks of adaptive expertise, that is, how they augment and improve on routine expertise.

I offer the deliberations above in the interests of capacity building directed towards the achievement of adaptive expertise. I want to, however, offer several caveats to this aspiration.

First, I caution against seeing these as polar opposites; any successful adaptor must make new practices part of their classroom routines in order to sustain those new practices. Unless they do this, the almost inevitable outcome is a reversion to former routines. Thus, adaptive expertise builds new routines, but continues to be ambitious to improve the learning value of all classroom routines.

Second, it is unrealistic to expect those whose professional identity is intimately based on the notion of routine expertise to become adaptive late in their career. Indeed, one of the ironies of my experience over the last 15 years is the resistance of most teacher educators to test or to move on from their assumed routine expertise. They readily update the “content” they teach, but not how they teach, in spite of the extensive literature (Darling-Hammond & Bransford, 2005) that indicates a need to engage with and challenge
the attitudes, beliefs, and values that student teachers bring to pre-service teacher education.

Third, and on the basis of my mentoring work, I believe that it is entirely possible for relatively inexperienced teachers to develop adaptive expertise. That may reflect their own dissatisfaction with the routines they have experienced. The key to this achievement is co-planning, and video-as-memory for intentional reflection. And once they are functioning as adaptive experts, they are well placed to mentor their early career peers. Thus, adopting this focus and approach to capacity building has the potential to generate a substantial multiplier impact – an invaluable outcome for resource poor systems. It is an approach that can genuinely impact teachers’ capacity to improve their practice in ongoing and sustainable ways.

References
Introduction
Given the centrality of education to socioeconomic development, it is not surprising that considerable policy attention has been directed towards education reform initiatives. The shift to a knowledge-based economy, rising economic competitiveness, the rise of international ranking lists of education effectiveness, among others, have all raised questions about the relevance of curricula, pedagogy, and adequacy of outcomes. While educational access remains important, equity and quality issues have now become significant topics of discussion, nationally and globally.

Improving educational quality can be understood as the pursuit of better student outcomes and achievement; and teacher quality is a core component. While papers in this THF Workshop Report acknowledge the important issues of professional development (PD), teacher quality is a multifaceted concept and is a subjective notion especially when viewed in a paradigm of competition and change.

As such, this paper argues for a broader appreciation of teacher quality and related research issues by leveraging Moreno’s (2005) work in categorising the literature into three dimensions: Phases, Topics, and Approaches. These perspectives highlight the areas around teacher quality in a complementary fashion in and beyond discussions around PD. It also allows for a greater appreciation of the complexities in seeing teacher quality beyond the simplistic measure of student achievement.

While detailed and multidisciplinary research is important and necessary in unveiling the “right” way forward, what is necessarily right can be
...the idea of teacher quality is multifaceted across varying dimensions and is a subjective notion especially when viewed in a paradigm of competition and change. Various attempts to continuously improve teacher quality and student-learning outcomes, centred within a teacher development yet student-centric paradigm. In this publication, Goh (2016) notes that for Singapore’s next 50 years, teacher PD must be strengthened, especially in areas such as coherence and sustainability. The dissonance between policy requirements and a teacher’s capacity for PD should be tackled. Lee (2016) examines lesson study (LS) and she reiterates its usefulness as a form of PD. Lee, however, also cautions how culture and leadership can be both a catalyst and restraint to LS’s continuity within schools. Where video-based reflection is utilised in teacher PD, Taylor (2016) suggests that its successes are through how it encourages an adaptive learning process versus one based on routinisation and doctrine. At its heart, these approaches look at the importance of continued teacher education, and the various forms it can take in ensuring a constant upgrade of teacher and teaching quality.

Professional training and continuous development, however, is just one aspect of the longer train of processes that influence teacher quality. Equal on the list of considerations frequently mentioned are issues like selection criteria, preparation and training, evaluation, and incentives. Embedded within these responses are challenges and solutions situated within the social, psychological, political, geographical, and economic. Therefore, when it comes to thinking about research on school improvement and better student outcomes, one has to appreciate the multiple realities that affect the notion about teacher quality.

A useful guiding point to discuss these issues is through Moreno’s (2005) broad perspective of the teacher-researcher literature. In his report, Moreno suggested that the literature can be divided into three broad dimensions of Phases, Topics and Approaches (Figure 1). These various research dimensions, while not exhaustive, are useful in structuring efforts in research and thinking.
around teacher quality. As such, what this requires of stakeholders is a reflexive look at how research, recommendations, and policy proposals are made. While certain discussions are important, viewing an issue’s interconnectivity within a grander scheme of processes unveils a broader appreciation of how teacher quality is not just a result of a singular factor.

*A Guide for Thinking about Teacher Research and Policy Recommendations*

The first dimension of Phases introduces the chronological progressions in a teacher’s career when teacher development can take place. For example, the PD category looks at training opportunities for current and existing teachers. Poekert’s (2012) review of the literature concluded that when PD practices are effectively instituted, they lead to an improvement in both instruction and leadership. He asserted that when it is targeted and substantial, “effective professional development leads to teacher leadership [which then] leads to effective professional development” (p. 170). Opportunities in PD are an impetus for teachers to develop into leaders, as it allows one to develop his or her expertise. Furthermore, with PD, the teacher leader and colleagues are given the capacity to re-examine existing instructional methods, benefitting students in the long run.

Still, this focus in demanding that teachers become leaders for their peers requires careful consideration when it...
Professional training and continuous development, however, is just one aspect of the longer train of processes that influence teacher quality. It is systematically employed within culturally diverse communities, such as those which are hierarchial. Despite its posited benefits, distributing school leadership away from the centre can be tenuous for organisational roles and relationships (Harris, 2013), and can potentially create a situation where empowerment morphs into a form of disempowerment (Office of Education Research, 2013). Teacher leadership then, as a way of instructional and professional development, hinges on the teachers’ capacity for leadership and their understanding of the organisational structure.

Taken in isolation, teacher development through a particular method, such as professional learning communities (PLCs) or LS, can be useful for instructional improvement. For example, Doig and Groves (2011) highlighted that the Japanese method of LS has received increased attention throughout Southeast Asia. It is also an effective tool in “facilitating curriculum reforms” (Lee & Ling, 2014) at the local school level as it designates a “zone of enactment” for teachers to be committed to their craft while expanding their capacity for reform changes. Because policy reform requires teachers to negotiate changes, LS provides the opportunity to help teachers deconstruct and reconstruct ideas that come from policies and their own “native” knowledge.

While LS is a method that is scalable and useful for sustaining PD in different pedagogical contexts, Doig and Groves (2011) have argued that its adaptation is dependent on the cultural assumptions that structure its successful implementation. The authors raised the distinction that the success of Japan’s LS is due to an appreciation of “collegial scrutiny” and that Japanese classrooms are open for public viewing. Comparatively, teaching is considered in Australia as a “private activity”. This implies that LS’s success is contingent on how it is implemented within varying cultural contexts. Therefore, while PD programmes, such as LS, are good in themselves, it becomes problematic when the teachers who are engaged in it view the process of teacher development differently. Hence, these issues partly determine the impact of teacher development outcomes, structuring the need for research and
Futher, beliefs, attitudes, and social assumptions are core to how a teacher perceives his role; this is examined in Moreno’s second dimension of Topics, which addresses the multiple social, epistemological, and psychological issues that affect teaching. The concerns of the types of knowledge to the cultural beliefs prevalent in the social system and even the psychological reactions to a teacher’s self-appraisal are areas which give insight into the potential limiters and motivators present in teaching.

For example, Lim, Tondeur, Nastiti, and Pagram’s (2014) work on the success of PD programmes for Indonesian teachers conclude that the effectiveness of these programmes are largely based on how teachers themselves understand their pedagogical beliefs. They argued that educational reforms will only have an impact if the meanings behind it are internalised by teachers as essential in shaping instructional practice.

Bjork (2013) went further in elucidating that Indonesian teachers’ failure to be innovative in their instructional practices is largely due to their belief that they are civil servants first and not professionals who are masters of the subject. This resonates with research from Chang et al. (2014) who gave a degree of historical insight into how the Indonesian teaching profession had degraded in status because of rapid school expansion to meet the needs of the economy. The quick recruitment of teachers was achieved through a reduction in qualification criteria, leading to a deprofessionalisation of the teaching cadre. Hence, as more teachers saw their jobs as part of the civil service and not as a profession first, the idea of the autonomous educator did not take root (Bjork, 2013).

These interrelated works highlight the various Topics that expose the different dimensions to an initial approach of trying to understand what the good teacher is. While research would usually focus on pedagogical or curricular improvements, framing the issue within the larger social, psychological, and historical contexts allows one to be cognisant of the factors that were
mitigating causes and also spaces for possible intervention.

The last, but not definitive, space for research entry is the Approach dimension. While there are recommendations proposed through empirical–analytical approaches by external agencies, equally important is the phenomenological research done by teachers and teacher-researchers themselves. Underlying both perspectives is how knowledge is created, appreciated, and understood. Although the literature on education excellence may feature parallel case studies from high-performing education systems, the reasons for under-performance are not likely to be similar. The prevalence of policy prescriptives based on Western perspectives (Hallinger, 2015) found in the global literature raises questions on transferability when placed in situ; what is perhaps needed is not so much policy transfer but policy learning. Hence, for each country concerned, it is necessary that rigorous classroom-based domestic research be conducted in such issues as teacher status, professionalisation processes, the entrenchment of traditional pedagogies, and what might be effective levers for change.

The right research environment and support structure is then necessary to enable domestic research to take place. As articulated by Low, Hui, Taylor, and Ng (2012), despite Singapore’s emphasis on quality teacher preparation, there is a lack of evidence-based teacher education research to support research-informed learning. Work that has been done is fragmented, partly due to the absence of a strong support system. Therefore, as much as we advocate that more contextual research is required in understanding the good teacher, the right conditions, the environment, and the infrastructure must also be in place to allow domestic research to flourish.

**Teachers and the Quest for Better Student Outcomes**

For governments and educators alike, school improvement and better student outcomes remain an important quest that demands continued scrutiny. The dominance of the Organisation for Economic Co-operation and Development’s (OECD) Programme for International Student Assessment (PISA) that evaluates education systems worldwide and other similar indicators have created a global ranking system, compelling governments to constantly look for strategies to improve schools and improve student outcomes. Nonetheless, while these international
benchmarks are portrayed as a useful indicator on a nation’s overall education performance, criticisms in the literature about standards, methodology, cultural relativity, and outcome-centric accountability processes (Dohn, 2007; Hanushek & Raymond, 2002) have indicated some limitations. Importantly, Moreno’s (2005) categorisation of the three dimensions has shown that as teacher quality and improvement is affected by a multitude of factors, where and what strategies can be best employed to improve teacher quality and, thus, lead to better student outcomes remain very much a work in progress.

In spite of all that is measurable in terms of academic output, there is also a need to appreciate and study ways to help teachers in their contribution to learning about the self, community, and society beyond the classroom. Ladwig (2010) argued that debates about education have too frequently been about school accountability and measurable student achievements. What is often lacking are also considerations about the non-academic – also a consequence of schooling.

As such, beyond the pressures of international benchmarking, the emergence of a knowledge-based economy has shown that both multidisciplinarity and soft skills are important for a 21st century society and are factors which education systems must embrace and inculcate. This has revalued the position of teachers as even more vital for the next generation’s future. Schleicher (2011) argued that teachers today have to go beyond teaching routine cognitive skills, especially knowledge sets that are easily replaceable through technology or shifted out of the domestic economy through outsourcing. A values-driven education that prepares the student for occupational integration is just as essential in tackling the challenges presented by globalisation, uncertainty, and new futures.

These non-measurable skills are all the more important when there is a need to manage the forces of change towards desirable outcomes especially in a rapidly shifting world. The sole transmission of cognitive knowledge through the classroom is, thus, insufficient when it comes to tackling challenges, such as corruption, poor governance, rising intolerance, and xenophobia. The notion of better student outcomes is, therefore, complex beyond academic achievements and perhaps not a factor best captured by any currently existing ranking measures.
It comes with no surprise then that these high expectations in student outcomes demand the ideal teacher in our classrooms. Apart from being skilled in pedagogical practices, the teacher has to be a master in character, soft skills, and other competencies that will prepare the student in the best way possible. In some instances, they are required to be avid multitaskers, juggling the requirements in both the curriculum and non-curriculum areas. Indeed, these are calls for a high standard of teacher quality.

What this suggests then for the teaching cadre, educators, researchers, and policymakers in this new world is that who gets selected, trained, inducted, and continuously developed as a teacher is all the more important. The teaching profession is compounded with complexities, and the expectations are high.

It is precisely between the domains of the academic and the non-academic where the teacher is required to excel in. Teachers are a key determinant of student outcomes (Leithwood, Harris & Hopkins, 2008; Leithwood, Louis, Anderson & Wahlstrom, 2004; Thoonen, Sleeers, Oort & Peetsma, 2012) and are a part of the future reform agenda in developing countries (Chen & Ragatz, 2010). How the teacher performs, however, is also a reflection of the structural demands placed on them. It is a dialectical relationship that shapes our expectations of teachers as both an educator and, if a civil servant, an official of the state.

This short paper has pointed to the fact that (1) the idea of teacher quality is multifaceted and (2) that role expectations of the teacher are both academic and non-academic. Research, as it is concerned about the truth, is well positioned to propose new ideas on what works for what and within a delimited array. Research, however, also problematises the constant – revealing that how we construct teacher quality, student outcomes, or achievements is also a political and social choice set for targeted outcomes.

Nonetheless, and as a final thought, adopting too strongly a means–ends rationality approach to schooling can be a “double-edged sword” (Ladwig, 2010, p. 136). While causality is an important consideration, this degree of control also colonises daily life within a frame of systemic indicators. This does not mean that causality and measurement be abandoned in their entirety. Instead, it is a call to be reflexive, and to honestly question if the compromises and the processes we seek are necessary.
References


