Introduction
The need to build teacher capacity can be considered a “no brainer”. Intuitively speaking, building teacher capacity in terms of knowledge, skills, and attitude (or values) would inevitably improve classroom teaching practices, student learning, and student learning outcomes. In their review on how best-performing school systems come out on top, Barber and Mourshed (2007) concluded that “the quality of a school system rests on the quality of its teachers” (p. 16).

There has been a growing interest and priority given to the broadening of student learning outcomes, such as 21st century competencies (e.g., critical thinking, global citizenship, collaborative learning), and issues on social equity, such as low-attaining students. With this growth, the interest and investment on building teacher capacity and teacher professional development in its various names (e.g., continual professional development, continuing professional development and learning) and forms (e.g., mentoring, professional learning community) see a mirroring effect. This is because classroom factors, especially the teacher, have been identified to explain more than one-third of variations in student achievement with respect to school effects (Leithwood, Day, Sammons, Harris & Hopkins, 2006).

The primary importance of teacher effectiveness in their classroom teaching is apparent and, hence, the concomitant importance on teacher professional development. What is, however, equally or more important is to answer the question, “What features of professional development are effective and what are not?”
In this paper, eight broad key features of effective professional development will be discussed in the context of usefulness to both practitioners and policymakers. Conversely, the opposing alternatives are implied as ineffective. It is worth stating that the notion of effectiveness is understood as the effects or impact of professional development on desired outcomes, such as teacher knowledge and skills, classroom teaching, student learning, and student learning outcomes (Bubb & Earley, 2010). The concluding segment of the paper will briefly highlight the next step forward for teacher professional development field of study— that is, to further the methodological support and exploration on what could be considered effective in teacher professional development.

**Feature 1: Continual and Lifelong**

The literature has consistently highlighted the importance of learning in the development of teachers to be continual and lifelong (e.g., Cordingly, Higgins, Greany & Coe, 2015; Guskey, 2000; Villegas-Reimers, 2003). A teacher is expected to be learning beyond their initial teacher preparation experiences and up to their retirement. The importance given to continual professional development is apparent in view of the increasing volatility, uncertainty, complexity, and ambiguity (VUCA) in the current global context of change. The saying, “What one learns today may not work tomorrow” essentially holds true insofar as the pace of change is increasingly requiring organisations (along with its human knowledge and skills) to respond accordingly.

The advent of the 21st century competencies also demands policymakers and school leaders to build their teachers’ capacities and capabilities in delivering relevant pedagogies that may not be fully tested. The intensity of change is compounded when policymakers see the importance of policy reforms to effect change across all schools in their respective states and districts, along with greater accountability measures. The pursuit to invest in teachers so as to attain better and diverse student learning outcomes inevitably causes schools to constantly lag behind in terms of developing teacher and organisational capacity to implement change.

All the other aspects of professional development for teachers are also determined to be substantial and influential, leading to increased teacher performance and student outcomes. It is also worth mentioning that this notion of effectiveness is sustained over time with an intensity of effort (Cordingley, Higgins, Building Capacity for School Improvement, 2015; Guskey, 2000; Stoll, 2003; Villegas-Reimers, 2003).

**Quest for Professional Development**

In the 21st century, there is a clear expectation that the role of teachers as professional educators should go beyond that of mere transmitters of knowledge. There is a need for new approaches to professional development that range from national to local as to the identified needs (Cordingley, Higgins, Building Capacity for School Improvement, 2015; Guskey, 2000; Stoll, 2003; Villegas-Reimers, 2003).
organisational capacities in relation to intended policy outcomes.

All these factors contribute to the pressure to design appropriate professional development for teachers from start to finish in their teaching career. The broad feature on continual and lifelong learning is also a testament to the need for professional development to be sustained in terms of duration and intensive in terms of frequency (Cordingley et al., 2015; Garet, Porter, Desimone, Birman & Kwang, 2001).

**Feature 2: Diverse and Complex**

In the current context where VUCA is considered a given, it is no wonder that the approaches used for professional development mirrors that of diversity and complexity. There is need to adopt a wider range of approaches in teacher professional development along with a wider range of activities and experiences so as to tailor to particular preferences, needs, and contexts (Guskey, 2000; Stoll, Harris & Handscomb, 2012; Villegas-Reimers, 2003).

Questions have been raised on the effectiveness of the traditional approach of professional development which regard it as special events that are restricted to 3 or 4 days during the school year, graduate courses and qualifications to attain better paid salaries, and the accumulation of time-based activities (Guskey, 2000). Although traditional approaches can foster teachers’ awareness or interest in deepening their knowledge and skills, they appear "insufficient to foster learning which fundamentally alters what teachers teach or how they teach" (Boyle, While & Boyle, 2004, p. 47).

Alternative forms of professional development platforms, such as study groups, coaching or mentoring, networks, and immersion to enquiry, have therefore been proposed.

**Feature 3: Collaborative-based and Community-based**

There is a rise of popularity in collaborative-based and community-based teacher learning platforms, such as professional learning community and lesson study (Darling-Hammond, Wei, Andree, Richardson & Orphanos, 2009). This can be attributed to several reasons. Collaborative professional development experiences provide
opportunities for teachers to collectively discuss concepts, skills, and problems that intimately related to teaching and instructional contexts (Garet et al., 2001). They also contribute to shared professional culture where common understanding of instructional goals, methods, problems, and solutions can be developed.

Collaborative learning practices also inevitably lead to the formation of communities where teachers share not only common practices, but also common goals and values. In such a learning context, learning is "as much a socially shared undertaking as it is an individually constructed enterprise" (Alexander & Murphy, 1998, p. 38). Collaborative-based and community-based teacher learning also provide a forum for debate and through this improving understanding on knowledge on teaching in a safe and trusting environment.

Besides growth in knowledge in teaching, collaborative-based and community-based teacher professional development also affords the emotional and psychological support to teachers having the same challenges, issues, and dilemmas that many face. Collaborative-based and community-based teacher professional development can also benefit teachers’ commitment to their teaching (Cordingley et al., 2015). In a nutshell, collaborative-based and community-based teacher professional development has the features of the principles of effective adult learning as proposed by Vella (2002): a safe environment for learning, sound relationships (respect for all), immediacy (knowledge applicable quickly), and teamwork.

Feature 4: Integrated with Work
The sustained critique on workshops and in-service courses that are held outside school is that they are disconnected from and are not contextualised to the day-to-day teachers’ work experiences, realities, and professional needs – even though timely knowledge, skills, and resources are given by experts. This perhaps explains the main grouse by funders of teacher professional development – that is, the issue of transferability from teacher learning to classroom practice. The lack of relevance of what teachers are learning to what teachers are experiencing in their teaching environment essentially dilutes this transferability.

Furthermore, the commitment to strengthen this transferability is timely and significant. As teachers already have many competing responsibilities and no substantial time is available for professional development, the point when workshops and in-service courses observe learners, analyze, and present new ideas to teachers is an opportunity for professional development.

Final Focus
Emotions and relationships are recognized as necessary to teacher experiences and professional needs – even of adults (Alexander & Murphy, 1998, p. 38). Collaborative-based teachers’ work experiences, realities, and community-based teacher professional development also affords a learning context, learning is "as much a socially shared undertaking held outside school is that the you expel as it is an individually constructed enterprise" (Alexander & Murphy, 1998, p. 38). Collaborative-based teachers’ work experiences, realities, and community-based teacher professional needs – even though timely knowledge, skills, and resources are given by experts. This perhaps explains the main grouse by funders of teacher professional development – that is, the issue of transferability from teacher learning to classroom practice. The lack of relevance of what teachers are learning to what teachers are experiencing in their teaching environment essentially dilutes this transferability.

Feature 5: Inquirers in their own learning
The role of inquirers in learning is also important in teacher professional development, inquiry being the core of research for school improvement. This is now being recognized as an impor...
is time demanding on teachers and school leaders who are already committed to heavy work responsibilities and workload. It is no surprise that Desimone (2011) suggested active learning in these professional development courses whereby teachers are actively observing and receiving feedback, analysing students’ work, and making presentations is more beneficial as opposed to passively sitting through lectures.

Finally, workplace learning or job-embedded learning has been well recognised to be consistent with experiential learning – in simple terms, learning from actions in real-world situations (Cordingley et al., 2015).

**Feature 5: Reflective-based and Inquiry-based**

The need for teacher professional development to adopt reflection and inquiry is due to the growing need for societies to engage in knowledge. This is germane with the rising importance placed on the knowledge economy and society. Teachers are now expected to go beyond being knowledge users to knowledge creators.

Effective teacher professional development has been said to challenge teachers’ thinking as a fundamental part of changing their teaching practices (Stoll et al., 2012). Hence, the policy model which requires teachers to implement central curricula to their classroom teaching is no longer viable. Even in situations where central education authorities come up with a set of curricular materials containing specific instructional goals, strategies, and tools which teachers can use immediately in their teaching, teachers are still required to make sense of centralised curricular knowledge in relation to the diverse learning needs of their students.

Teaching in the knowledge society is therefore more an intellectual than a technical enterprise (Nelson & Hammerman, 1996) whereby knowledge about teaching is questioned and interrogated through reflection and inquiry activities, such as reflective practices and action research. While the former helps teachers to surface their assumptive knowledge on teaching, the latter compels teachers to defend their assumptive knowledge on teaching using logical thinking through the use of evidence. Inquiry has the potential to turn data and experience into knowledge, using evidence for decision-making, participating in
others' research, and promoting communities of inquiry (Cordingley et al., 2015).

Finally, reflective-based and inquiry-based teacher professional development has resonance to the importance given to the focus on the curricular content and pedagogy (Desimone, 2011; Garet et al., 2001), and also assessment.

**Feature 6: Linked to Student Learning (and Outcomes)**

The rationale for teacher professional development to be closely tied to student learning and its outcomes is simply because teachers' work and motivation is centred on student learning and outcomes within the contexts of their classroom teaching. Teachers are essentially motivated by students' learning (Darling-Hammond, 1998). The heavy workload that teachers have on a day-to-day basis further constrains and compels teachers to focus on teacher professional development which leverage their day-to-day teaching and learning of their students.

It is no wonder Stoll et al. (2012) placed this broad feature as the first among the list of effective features, stating that “effective professional development starts with the end in mind” (p. 3). It is not surprising that teachers and schools to want to go beyond the conventional in-service courses or workshops and adopt forms of professional development experiences that are more meaningful and in alignment to their personal beliefs and values (Day & Sachs, 2004).

**Feature 7: Organisational, External, and System Support**

The role of support from leaders within and outside schools contributes to the effectiveness of teacher professional development (Cordingley et al., 2015; Stoll et al., 2012). The first level of support comes from leaders within the school organisation itself. School leaders play a crucial role in providing the appropriate conditions to motivate teachers to engage in meaningful professional development activities and sustain their interests. These conditions include the following: providing time for meaningful teacher learning, role-model learning, placing professional development as one of the strategic goals and thrusts of the organisation, providing recognition and reward structure pertaining to professional development, (re)designing processes to transfer teacher learning to classroom practice, and distributing leadership for learning across the school organisation.

The support from leaders within the school organisation is effective when the organisation itself is structured to support learning, and its functions are leveraged to strategically support professional development. This can be achieved by placing leadership for learning within the school organisation as one of the top priorities and ensuring that the school organisation is structured to support learning. This can be achieved by placing leadership for learning within the school organisation as one of the top priorities and ensuring that the school organisation is structured to support learning.
The second level of support is from external consultants – private or public organisations, such as universities or business partners. There is, however, the need to carefully optimise the engagement with external consultants so that the needs of the schools – both teachers and students – can be met to the fullest. In this regard, Cordingley et al. (2015) rightly specified several espoused activities provided by external consultants that maximise student learning outcomes. These include making an explicit specific knowledge base, introducing new knowledge and skills to be acquired, nurturing positive teacher belief in student learning, making links between teacher learning and student learning, and taking into consideration the different starting points of each teacher.

The third level of support comes from system-level leaders, such as district superintendents and educational policymakers at the state or national level. The support could be in the form of funding and appraisal structures to encourage and support professional development aspirations and practices.

All the three levels point towards the importance of coherence in the “programme” for teacher professional development (Garet et al., 2001), and how teachers perceive and experience coherence in all professional development activities provided by leaders within and outside school, and how it all makes sense to their own personal and professional beliefs and practices relating to teaching and learning.

**Feature 8: Teacher Led**

Lastly, it has been emphasised that teachers taking part in professional development, whether being forced or willingly volunteering, is beneficial to them as long as a positive learning environment, sufficient time, and congruence between professional learning experiences and the teachers’ wider working context is in place (Cordingley et al., 2015). There is, however, still ample logical support that forcing teachers to participate in teacher professional development is not sustainable and potentially curtails the optimal level of teacher learning, and thus the improvements it can make to classroom teaching and learning.

Although it can be argued that teachers’ resistance cannot be given into at the expense of education reforms that prepare students for the 21st century, the kind of lifelong learning that effectively support
21st century societies is centred on empowerment of the learners. Following this argument, lifelong learning is defined as:

The development of human potential through a continuous supportive process which stimulates and empowers the individuals to acquire all the knowledge, values, skills, and understanding they will require throughout their lifetimes and to apply them with confidence, creativity, and enjoyment in all roles, circumstances, and environments. (Longworth, 2001, p. 592)

Furthermore, the broad features that are mentioned above including the three by Cordingley et al. (2015) are in essence to motivate teachers to willingly engage and be continually engaged in professional development activities.

**Conclusion**

The literature support for the types of features that are considered effective in teacher professional development has been quite established over the last decade. What is still lacking, however, is the methodological rigour that supports the claims on such effective features on its attendant outcomes, such as student (e.g., academic and non-academic outcomes), teacher (e.g., teacher knowledge, attitude, and self-efficacy) and organisation (e.g., learning culture). In this regard, I wish to make several propositions for both educational policymakers and practitioners to consider.

First, mixed-method research programmes that involve the integrated use of both quantitative and qualitative research methods to explore or test the effectiveness of the above mentioned features. Second, longitudinal research programmes to explore and test change in outcomes. Third, large sample data sets to strengthen generalisability. Fourth, robust research designs such as the use of ethnographic data in qualitative research studies, and experimental and non-experimental designs (e.g., the use of correlations and regressions) to strengthen causality. Both are important to estimate “what” and “how” aspects of the effects of teacher professional development.

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**References**


to strengthen the estimates in measurement of constructs for quantitative studies pertaining to effectiveness of professional development activities. Sixth, intervention studies to compel researchers to arrive at strong theoretical frameworks on effective professional development and testing them out in practice. (Refer to Hairon, Goh, Chua and Wang [2015] for detailed elaborations on the above propositions, albeit within a professional learning community context.)

In summary, the claims made on what are considered effective or not need further empirical substantiation through either formal government funded or informal practitioner research programmes. Only through this will there be further resolutions in teacher professional development.

References


